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

USACE Contract No. W912PL-17-C-0006

Prepared for:

United States Army Corps of Engineers
Los Angeles District

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ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
mg/kg	milligrams per kilograms
µg/kg	micrograms per kilogram
AAC	Arizona Administrative Code
ADAF	age-dependent adjustment factor
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
Ahtna	Ahtna Engineering Services
APN	Assessor's Parcel Number
ASR	Archives Search Report
ASTM	American Society for Testing Materials
bgs	below ground surface
C	central
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CoC	Chain-of-Custody
COPC	chemicals of potential concern
CRRL	Cold Regions Research and Engineering Laboratory
CSM	conceptual site model
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DU	Decision Unit
DQO	data quality objective
E	east
EB	equipment blank
ECO	Eco & Associates, Inc.
eco-SSL	ecological soil screening level
ELAP	Environmental Laboratory Accreditation Program
EPC	Exposure point concentrations
Eurofins TestAmerica	Eurofins Environment TestAmerica Laboratories, Inc.
FCRF	Field Change Form Request
FUDs	Formerly Used Defense Site
FS	Feasibility Study
Ft	Feet
GNSS	Global Navigation Satellite System
GPS	Global Positioning System

GTG	Ground-to-Ground
GPM	gallons per minute
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
INPR	Inventory Project Report
ISM	incremental sampling method
ISM-2	updated ISM manual
ITRC	Interstate Technology & Regulatory Council
IUR	inhalation unit risk
MC	munitions constituent
MD	munitions debris
MEC	munitions and explosives of concern
MIS	Management Information System
MRS	Munitions Response Site
MS	matrix spike
MSD	matrix spike duplicate
m.y.	million years
NAD83	North American Datum of 1983
NOREAS	NOREAS, Inc.
PAHs	polycyclic aromatic hydrocarbons
PALs	Project Action Limits
PARCCS	precision, accuracy, representativeness, completeness, comparability and sensitivity
Parsons	Parsons Infrastructure and Technology Group Inc.
PCL	Protective Concentration Levels
PPE	personal protective equipment
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RAC	risk assessment code
RfC	reference concentration
RfDi	inhalation reference dose
RI	Remedial Investigation
RL	reporting limit
ROE	right-of-entry
RPF	Relative potency factor
RSL	Residential Screening Level
SAP	sampling and analysis plan
SFi	inhalation slope factor
SI	Site inspection

SIM	selected ion mode
SOP	standard operating procedure
SRLs	Soil Remediation Levels
SU	Sampling Unit
S3VEM	Stage 3 Validation Electronic and Manual
S4VEM	Stage 4 Validation Electronic and Manual
TCRA	Time-Critical Removal Action
TCLP	Toxicity Characteristic Leaching Procedure
UCL	upper confidence limit
USACE	United States Army Corps of Engineer
USDA	U.S. Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	unexploded ordnance
W	west

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EXECUTIVE SUMMARY

This Remedial Investigation (RI) report has been prepared by NOREAS, Inc. (NOREAS) as a part of the Remedial Investigation and Feasibility Study (RI/FS) of the Former 15 Skeet Ranges[1] (Site or the Site), at the Former Kingman Ground-to-Ground (GTG) Gunnery Range in Mohave County, Arizona (Figure 1-1). The purpose of the RI/FS is to characterize environmental conditions and media at the Site, and determine the nature and extent of potentially hazardous substances related to military munitions use. This includes debris from clay targets (also called clay pigeons) used at the skeet ranges containing polycyclic aromatic hydrocarbons (PAHs), and munitions constituents (MC). NOREAS performed this work under United States Army Corp of Engineer (USACE) Los Angeles District Contract W912PL-17-C-0006. The contract work falls under the Defense Environmental Restoration Program (DERP) as a Formerly Used Defense Site (FUDS) project No. J09AZ0412-01. The project work is conducted under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The Kingman GTG Gunnery Range was used during World War II for aerial gunnery training and later transferred from DoD's control prior to 17 October 1986. For this reason, Kingman GTG is a FUDS, eligible under the Department of Defense (DoD) Military Munitions Response Program (MMRP). With the exception of the United States Postal Service office on Thompson Avenue, the current Site consists of fully developed residential properties, along with a few remaining undeveloped parcels zoned for residential use.

A Site Inspection (SI) was performed at the Kingman GTG Gunnery Range in 2010, with a final report issued in 2011 by Parsons Infrastructure and Technology Group, Inc. (Parsons 2011). During the 2010 SI, residual fragments/debris from World War II clay pigeons were confirmed present on residential parcels located near the former firing positions of the Site. World War II

[1] The 15 Skeet Ranges Site was previously identified in USACE records as part of Munitions Response Site (MRS)03. This designation was later changed, following the SI, to include the 15 Skeet Ranges as a portion of the much larger 7,936-acre MRS01. References to MRS03 are retained in portions of the report, including sample identifiers, for legacy reasons.

clay pigeons were constructed with coal tar pitch, containing PAHs. PAHs may be harmful to human health if inhaled, ingested, or if they come in contact with skin. PAHs can be toxic, but they are not explosive or radioactive.

During SI (Parsons, 2011), soil samples were collected from seven parcels within the Site. The laboratory results indicated that PAHs (acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)-fluoranthene, chrysene, dibenz(a,h)-anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2- methylnaphthalene, naphthalene, phenanthrene, and pyrene) levels in the soil near the former skeet range firing positions resulted in concentrations over 1,000 times higher than allowable under Arizona State regulations. In addition, antimony, lead, and zinc, which are MC, were found present in the soil at concentrations above background levels, but below Arizona Soil Remediation Levels (SRLs) protective for human health. Based on these soil sample results, it was deemed that there is a high potential for adverse human health risk from PAHs in the soil within portions of the Site.

During the SI work by Parsons (Parsons, 2011), significant clay pigeon debris were observed in approximately 55 parcels, located within and southeast of the firing positions of the former skeet ranges. These 55 parcels were selected for Time Critical Removal Action (TCRA). Under the TCRA program, the PAHs-impacted soils from the 55 parcels were excavated and transported offsite for proper disposal. The excavated areas were backfilled with clean fill material. The TCRA work was conducted from April 2013 through July 2014.

Concurrent with TCRA, RI work at the remaining parcels within the Site was started by Eco and Associates (Eco). Between December 2014 and February 2017, 66[2] parcels were investigated by Eco as part of the previous RI program. Under contract to USACE, NOREAS is conducting the current RI, as continuation of the previous RI.

Between 15 January and 31 October 2019, as a part of the current RI, NOREAS collected soil samples from 60 additional parcels. This RI report documents the results for these 60 parcels in conjunction with the results from the previous investigations (66 parcels) and TCRA (55 parcels).

[2] Surface samples for APN 32404640 were collected and analyzed in 2015, with subsurface samples collected and analyzed in 2019. APN 32404643 is listed as a TCRA parcels, but also listed as an RI parcel since an investigation was conducted at APN 32404643 after the TCRA by Eco.

RI work is ongoing at the Site. Results from the RI activities conducted after 31 October 2019 will be presented in an addendum to this RI report.

The current RI was conducted in accordance with Quality Assurance Project Plan (QAPP) Addendum No. 1 (NOREAS 2018). Prior to field activities associated with the RI, USACE secured right-of-entries (ROEs) granting access to properties. The RI activities included geophysical surveys, reconnaissance for visual observation of skeet fragments and lead shot pellets, soil sampling using incremental sampling method (ISM), and parcel restoration at 60 parcels. Some parcels could not be sampled due to the lack of signed ROEs by property owners, not being able to make contact with property owners or property representatives, or as a result of owners who already signed ROEs now refusing to participate in the RI/FS program.

At each parcel, soil samples were collected from surface (0 to 2 inches) and subsurface [0 to 1-foot below ground surface (bgs), and 1-foot to 2 feet bgs] and as needed, in subsequent 1-foot intervals up to 6 feet bgs. Soil samples were analyzed for PAHs by United States Environmental Protection Agency (USEPA) Method 8270C Selected Ion Mode (SIM) and for the metals (antimony, copper, lead, and zinc) by USEPA Method 6010B.

During the current RI, skeet fragments were observed on the surface at 44 parcels and in the subsurface at eight (8) parcels (Figure 6-1). During the previous RI by Eco, skeet fragments were observed on the surface at 21 parcels and in the subsurface at five (5) parcels. No lead shot pellets were observed at the parcels sampled during the current RI or previous RI. PAHs and metals concentrations were evaluated from 1,187 soil samples collected from 179 parcels during the TCRA, previous RI, and the current RI (as of 31 October 2019). The sampling results are used as inputs for exposure area determinations, assessed and evaluated in a Human Health Risk Assessment (HHRA).

The HHRA results are expressed as carcinogenic risk and noncarcinogenic hazard. Carcinogenic risks are expressed in terms of probabilities. That is, a probabilistic estimate of the upper-bound probability of an individual developing cancer as a result of exposure to a particular level of a human carcinogen. For example, the probability expressed as 1×10^{-5} can be read as a probability of cancer of one in 100,000. Carcinogenic risk probabilities ranging from 10^{-4} to 10^{-6} are generally considered within an acceptable exposure level by USEPA (National Oil and Hazardous Substances Contingency Plan (NCP); 40 Code of Federal Regulations 300.430). For noncarcinogens, a hazard quotient (HQ) was calculated, The HQ is the ratio of the potential exposure to a substance and the level at which no adverse effects are expected. If the HQ is less than 1, no adverse effects are expected because of exposure. The sum of the HQs for various substances reported is the hazard index (HI); an HI of less than 1 also indicates that no adverse effects are expected from exposure. To assess lead, the USEPA residential soil screening level (400 mg/kg) was selected for comparison to parcel concentrations.

HHRAs were performed for each parcel investigated. PAHs concentrations for incremental sampling method (ISM) samples were evaluated in the HHRA (Appendix B). Seventy-two (72) of the 124 RI parcels were quantified with a carcinogenic risk probability above 10^{-6}. TCRA confirmation soil sample results of the 2-foot confirmation samples from the 55 TCRA parcels (Tables 3-1 and 3-2) were also compared to acceptable human health risks for PAHs in the soil. Subsurface soil in 50 of the 55 parcels had confirmation sample results with PAHs in soil above the 2014 established cleanup levels. In accordance with CERCLA, DERP, FUDS and NCP, the acceptable carcinogenic risk range is 10^{-6} to 10^{-4}. Based on the results of the RI, the risks associated with chemicals of potential concern (COPCs) reported in soil samples were either within this acceptable range, or below. The highest calculated carcinogenic risk was for APN 324-39-032 (3951 E Snavely Ave) calculated as $2x10^{-4}$ at the 1- to 2- foot depth interval. Non-cancer human health risks associated with metals were below an HI of 1, and lead was found to be below the USEPA residential soil screening level. A significant limitation of the HHRA results is that soil sampling and processing for chemical analyses necessarily excluded larger clay pigeon debris (skeet fragments) containing PAHs from chemical analysis. The presence of significant clay pigeon debris at a parcel represents an on-going source of PAHs contamination both through direct exposure (ingestion) and the potential to contribute to soil contamination following further weathering/disintegration of this material.

Preparation of an FS is recommended to evaluate remedial alternatives to address parcels with unacceptable human health risk resulting from the presence of skeet fragments and/or excessive concentrations of PAHs in soil. It is also recommended to prepare a future addendum to this RI summarizing the results from the parcels investigated since 31 October 2019.

1.0 INTRODUCTION

This Remedial Investigation (RI) Report has been prepared by NOREAS, Inc. (NOREAS) to document investigation activities conducted at the former Kingman Ground-to-Ground (GTG) Gunnery Range, in Kingman, Mohave County, Arizona. This RI Report has been prepared on behalf of the United States Army Corps of Engineers (USACE), Los Angeles District, under the Contract No. W912PL-17-C-0006. Under the contract, NOREAS is to provide environmental support for the continuation and completion of a Remedial Investigation (RI), including risk assessment at the Former 15 Skeet Ranges (Site or the Site) (Figure 1-1). The 15 Skeet Ranges site was previously identified in USACE records as part of Munitions Response Site (MRS)03. This designation was later changed, following the Site Inspection (SI) to include the 15 Skeet Ranges as a portion of the much larger 7,936-acre MRS01. References to MRS03 are retained in portions of the report, including sample identifiers, for legacy reasons. The work conducted during the RI followed the general procedures outlined in the approved project *Final Remedial Investigation (RI) and Feasibility Study (FS) Work Plan* (Work Plan), (Eco, 2014a), as amended by the Final Quality Assurance Project Plan (QAPP) Addendum No. 1 (NOREAS, 2018), approved by USACE and Arizona Department of Environmental Quality (ADEQ) in September 2018.

The contract work falls under the Defense Environmental Restoration Program (DERP) as a Formerly Used Defense Site (FUDS) project No. J09AZ0412-01. The project work is conducted under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). All activities during the phases of field work were conducted in full compliance with USACE-approved work plans.

The RI was started at the Site by Eco & Associates, Inc. (Eco) in 2014. Between December 2014 and February 2017. Eco investigated 66[3] parcels, including 10 sub-parcels[4] as part of the previous RI program. Under contract to USACE, NOREAS is continuing the RI process. Between 15 January and 31 October 2019, as a part of the current RI, NOREAS collected and analyzed soil samples from 60 additional parcels, including one sub-parcel[5], This draft RI Report documents the results for these 60 parcels, in conjunction with the results from the selected 55 parcels for Time Critical Removal Action (TCRA) implemented by Eco in April and May 2013 (Eco, 2014 b-1) and Ahtna Engineering Services (Ahtna) from October 2013 to July 2014 (Ahtna, 2014a-aq) and the 66 parcels from previous RI by ECO (Eco, 2017) . RI work is ongoing at the Site. Results from the RI activities conducted after 31 October 2019, will be presented in an addendum to this RI Report.

1.1 REMEDIAL INVESTIGATION OBJECTIVES

The Site is known to contain soil affected by contaminants, resulting from the World War II training activities. The primary RI objectives are to characterize environmental conditions and media at the Site and determine the nature and extent of potentially hazardous substances related to military munitions use at the Site. This includes munitions constituents (MC) from lead shot pellets and debris from clay targets (also called clay pigeons) used at the skeet ranges., metals (antimony, copper, lead, and zinc) and polycyclic aromatic hydrocarbons (PAHs) (compounds found in clay pigeons).

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[3] Surface samples for APN 32404640 were collected and analyzed in 2015, with subsurface samples collected and analyzed in 2019. APN 32404643 is listed as a TCRA parcels, but also listed as an RI parcel since an investigation was conducted at APN 32404643 after the TCRA by Eco.

[4] Ten of the 66 parcels investigated by Eco (Eco, 2017) were subdivided into east and west or east, center, and west. Nine parcels (APN32404237A, APN32404282A, APN32404282B, APN32404655A, APN32405180A, APN32405205A, APN32405272A, APN32405276A, and APN32405308A were divided into two sub-parcels, east (E) and west (W) sub-parcels, respectively. One parcel, APN32405194B was subdivided into three sub-parcels, east (E), central (C), and west (W) sub-parcels, respectively

[5] During this current RI, one parcel APN31021080 [A&B]), was subdivided into parcel APN31021080, APN31021080A, and APN31021080B.

1.2 SITE DESCRIPTION AND BACKGROUND

The Site is located in Kingman, Arizona, in the southwest section of the Former Kingman GTG Gunnery Range (Figure 1-1). The Site was activated as part of the Army-Air Forces Flexible Gunnery School at Kingman Army Airfield in August 1942.

The Site included 15 overlapping skeet ranges, encompassing approximately 75 acres. The 15 skeet ranges were constructed side-by-side in an overlapping pattern with each skeet range laid out in a semi-circle pattern (see Figure 1-2 for the depiction of a typical skeet range). The clay targets or "pigeons" were launched from two structures, a high house, and a low house. The structures were situated along the edge of the semi-circle and equipped with six to eight firing positions (or firing platforms) set at various heights and angles. The students (shooters) stood at the northwest portion of the Site and fired toward the southeast. No munitions and explosives of concern (MEC) or material presenting potential explosive hazards were reportedly used at the Site. Small arms weapons for training and shotguns equipped with 12-gauge ammunition to fire at the clay pigeons were used at the Site.

Currently, the Site is almost wholly developed for residential purposes. Residential streets within the Site include North Tommie Drive, East Lass, East Snavely, East Thompson, East Lum, East Ryan, East Hearne, East Devlin, East Schaeffer, East John, and East Northfield Avenues. The properties located south of Thompson Avenue were developed as part of a subdivision called New Kingman in 1964. North of Thompson Avenue, Chaparral Mesa II subdivision began development in 2004. In the northeastern section of the Site, additional development is currently underway in Long Mountain subdivision.

Except for properties south of Thompson Avenue (New Kingman subdivision), the existing surface soil of the land is not representative of the Site conditions that existed during the time of skeet shooting activities. Most of the residential properties have been landscaped or significantly modified. Within the Chaparral Mesa II subdivision, the original ground surface of this subdivision has reportedly been raised several feet by the addition of fill material, resulting in the covering of the original Site surface soil. Moreover, crushed lava rock has been added for landscaping purposes to many yards of the homes in this area. Additionally, the Long Mountain subdivision has included considerable earthmoving and evidence of substantial imported fill material.

The primary concerns at the Site are abundant but scattered clay pigeon debris, PAHs in the soil, and the potential for lead (from shotgun projectile) to remain in the surface soil. World War II-era clay pigeons were constructed with coal tar pitch, containing PAHs. PAHs and metals (antimony, copper, lead and zinc) associated with shotgun pellets, are considered health hazards to human and ecological receptors through exposure to soil by incidental ingestion, dermal contact, or inhalation of re-suspended particulate matter.

The Site is known to contain soil affected by World War II training activities. Historical aerial photographs of 1943, 1954, 1967, and 1978 (Appendix A) not only show the semi-circle configuration of skeet shooting stations but also show clay pigeon remnants on the ground at the Site. Furthermore, previous investigation analytical results, as presented in the SI Report (Parsons Infrastructure and Technology Group Inc. [Parsons], 2011), concluded that there is a potentially unacceptable risk to human health due to exposure to PAH concentrations in the soil at the Site. During the SI work by Parsons (Parsons, 2011), significant clay pigeon debris was observed within approximately 55 of 284 properties/parcels initially estimated to have been impacted and to encompass the 75 acres of the Site. These 55 properties were located within and southeast of the firing positions of the former skeet ranges. The highest PAHs detected concentrations were within the upper 2 feet of surface soil, where the most substantial concentrations of debris from clay pigeons had been observed. However, PAH concentrations were also detected at deeper depths, depending on clay pigeon accumulation, historical use of the area, and previous grading/filling operations.

1.3 REPORT ORGANIZATION

This RI Report is structured to provide details regarding the significant aspects of the RI and is divided into the following sections:

- **Section 1.0 Introduction –** Provides a brief overview of the RI objectives and document organization.

- **Section 2.0 Physical Characteristics** – Provides descriptions of the physical setting, including the geology, hydrogeology, and ecology of the Site.
- **Section 3.0 Previous Investigations and Actions –** Provides summaries of the historical activities at the Site, including the results of previous investigations and removal actions.
- **Section 4.0 Remedial Investigation Approach –** Includes a description of the RI approach, including field investigation methods and laboratory analytical programs.
- **Section 5.0 Summary of RI Field Activities** – Provides a brief description of the field activities that were completed as part of the RI.
- **Section 6.0 Investigation Results** – Includes a discussion of RI field investigation results.
- **Section 7.0 Summary, Conclusions, and Recommendations** – Presents a summary of RI field investigation activities and findings, conclusions of the RI, and recommendations.
- **Section 8.0 References** – Includes a list of references used in the RI Report.

The RI Report also includes the following appendices:

- **Appendix A** Historical Aerial Photographs - includes Site historical aerial photographs of 1943, 1954, 1967, and 1978.
- **Appendix B** Human Health Risk Assessments (HHRAs) – includes HHRA results for individual parcels
- **Appendix C** Data Quality Summary Report– describes the quality and usability of analytical data collected for the RI activities

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

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2.0 PHYSICAL CHARACTERISTICS

The following subsections provide background information regarding the history and physical characteristics of the Site. A majority of the information presented in this section is based on the SI report (Parsons, 2011).

2.1 PHYSICAL SETTING

The Site is located at an elevation of approximately 3,300 feet above mean sea level in the northern area of Kingman, Arizona, extending northward six miles along U.S. Historic Highway 66 in Mohave County (Latitude 35° 15' 35" N, Longitude 113° 58' 41" W; USACE, 2004). The Site is comprised of 75 acres and situated approximately 1,400 feet northwest of Highway 66. The Site parallels Highway 66 and crosses over Thompson Avenue and Tommie Drive. The Site has been almost completely developed for residential purposes. Except for one of the oldest subdivisions, New Kingman subdivision, developed in 1964 and located south of Thompson Avenue, the original ground surface in many locations of the Site has been raised by several feet using imported fill material. Therefore, the surface soil in most portions of the Site Kingman GTG Gunnery Range may not be representative of the Former Site conditions that existed.

The topography of Kingman GTG Gunnery Range is relatively flat, and there are no known features. The most prominent topographic feature is the main drainage channel that extends northeast through the eastern portion. Due to the drainage channel, topography of the Site slopes gently to the southeast in the northwestern portion and the northwest in the southeastern portion.

2.2 REGIONAL GEOLOGY

The Former Kingman GTG Range is in the Basin and Range province. The Basin and Range province covers approximately 200,000 square miles of southwestern United States and spreads out in seven states, including Arizona. The Basin and Range are characterized by northwest-southeast mountain ranges and long, broad valleys formed by extensional faulting during the Miocene. Rocks of various ages and types were folded and faulted during the Late Cretaceous to mid-Miocene, before being uplifted and exposed. The fault-block mountains in Arizona are low to mid-elevation ranges that generally trend northwest to southeast and parallel to one another. Within the valleys, thick alluvium sequences have been deposited as a result of uplift and erosion of the mountains.

2.2.1 General Site Geology

The Site is in the southwestern portion of the Hualapai Valley, east of the southern end of the Cerbat Mountains (Arizona Geologic Survey, 2006). This segment of the Cerbat Mountains consists of mid-Miocene to Oligocene volcanic rocks [11 to 38 million years (m.y.)] and early Proterozoic (1600 to 1800 m.y) granitic and metamorphic rocks. The entire surface area of the Site is mapped as Quaternary (0 to 2 m.y) surficial-type or alluvial deposits, mostly sourced from the Hualapai Mountains. No faults are mapped within the Site.

According to the U.S. Department of Agriculture (USDA), soil at the Site mainly consists of Dutchflat sandy loam and Lostman gravelly sandy loam, with some Circular complex and Rift silty clay loam. Dutchflat sandy loam consists of sandy loam from 0 to 4 inches below ground surface (bgs), sandy clay loam from 4 to 37 inches bgs, and coarse sandy loam from 37 to 60 inches bgs. It is well-drained and has a moderately high to high capacity to transmit water. Lostman gravelly sandy loam consists of gravelly sandy loam from 0 to 36 inches bgs and very gravelly loamy coarse sand from 36 to 56 inches bgs. It is well-drained and has a high capacity to transmit water. The Circular complex consists of loam from 0 to 60 inches. This soil is somewhat excessively drained and has a high capacity to transmit water. Rift silty clay loam consists of silty clay loam from 0 to 23 inches bgs and silty loam from 23 to 44 inches. It is well-drained and has a moderately low to moderately high capacity to transmit water.

2.3 REGIONAL HYDROGEOLOGY

Thick, productive aquifers are present in the deep fault-block valleys or basins of the region that primarily consist of unconsolidated gravel, sand, silt, and clay, partly consolidated sedimentary and volcanic materials derived from erosion of the surrounding mountains. The ground-water flow systems are in individual or two or more hydraulically connected basins through which groundwater flows to a terminal discharge point. Most of the groundwater recharge originates as mountain snowmelt, then traverses in mountain streams from bedrock channels eventually infiltrates into the alluvial fans to replenish the basin fill aquifer (USGS, 1995). Intense thunderstorms may also provide some direct recharge. Still, in most cases, any rainfall that infiltrates the soil is either evaporated or taken up as soil moisture, with little percolating downward through the unsaturated zone to the water table in the valleys.

2.3.1 Site Hydrogeology

Kingman GTG Gunnery Range lies in the southern part of the Hualapai Valley Basin. Hualapai Valley Basin is located in Hualapai Valley, a wide north-south trending valley with mountain ranges along the western margin and the Colorado Plateau on the eastern boundary. The southern portion of the basin contains a moderately deep sequence of sediments divided into three aquifer units: 1) younger basin fill consisting of alluvium and recent stream deposits, 2) intermediate basin fill consisting of coarse-grained sands, silts, and clays, and 3) older basin fill, which is the primary aquifer, composed of clastic sediments interbedded with volcanic rocks. The depth of this aquifer in the vicinity of the Site is estimated to exceed 500 feet bgs (Arizona Department of Water Resources [ADWR], 2009). ADWR has reported wells tapped into this aquifer in the Kingman GTG Gunnery Range area, has well yields ranging from 500 gallons per minute (gpm) to greater than 2,000 gpm. Groundwater storage estimates for the basin range from 3.0 to 5.3 million acre-feet to a depth of 1,200 feet. Documented groundwater flow direction is south to north for most of the basin, but east to west near Kingman (ADWR, 2009).

2.4 GROUNDWATER AND SITE SURFACE WATER

2.4.1 Groundwater

Information obtained by Parsons (Parsons, 2011) from the Arizona Wells Database through Sustainability of Semi-Arid Hydrology and Riparian Areas (SAHRA) indicated 97 water wells exist within a 4-mile radius of the Site. Of the 97 wells, 45 are for domestic, 7 for irrigation, 2 for stock, and 42 wells are listed as other.

2.4.2 Site Surface Water

Regionally, due to the gentle northeast slope of southwestern Hualapai Valley, surface water captured in the Site's washes during heavy rainfall drains into the main wash and flows northeast toward the center of Hualapai Valley.

As discussed in Parsons SI (Parsons, 2011), ADEQ indicated no active or inactive surface water intakes for drinking water supplies are within 15 miles of the Kingman GTG Range Site.

2.5 CLIMATE

The climatic data for the Site is represented by climatic data for Kingman, Arizona, from statistical analysis of historical hourly weather reports and model reconstructions January 1980 to August 2019 (Weatherspark.com 2019). In Kingman, the summers are typically hot and mostly clear, and the winters are cold and partly cloudy and dry year-round. Temperatures for Kingman usually vary from 32 degrees Fahrenheit (°F) to 96°F. On average, the hot season is June to September, with the hottest month in July, averaging highs of 96°F and lows of 71°F. The cold season is from late November to late February, with an average low of 32°F and a high of 62°F.

On average, the region receives less than 10 inches of rainfall annually, lasting from mid-July to mid-March. The most rain falls during the 31 days centered around February 17, with an average accumulation of 1.0 inch (Weatherspark.com, 2019). The windier part of the year lasts approximately five months from February to July, with average speeds of more than 8.2 miles per hour (Weatherspark.com, 2019).

2.6 ECOLOGY

The Site lies in the southwestern portion of the Hualapai Valley, Mojave Desert Ecoregion. The natural vegetation in the undeveloped parts of the Site is relatively sparse, dominated by creosote bush and some cacti. The competition for water in this desert environment results in widely spaced plants. The most concentrated vegetation is along drainage channels.

2.6.1 Special Status Species

According to the Arizona Game and Fish Department (AGFD) database, there are 15 listed endangered species and five listed threatened for Mohave County (AGFD, 2019). Considering that the Site is characterized by desert-type ecology, many of the listed species are unlikely to inhabit the former Kingman GTG Gunnery Range. For example, five of the 20 listed are fish species and all six plants (Arizona cliff rose, Fickeisen plains cactus, Geisich mallow, Holgrem milk-vetch, Jone’s cycladenia, and Siler pincushion cactus) are unlikely to occur at the Site, as they are restricted to specific locations within Mohave County (USFWS, 1986, 1995, 2006, and 2008; NatureServe Explorer, 2019). The desert tortoise inhabits the Mohave Desert scrub (AGFD, 2019). This habitat may be present within portions of the former Kingman GTG Gunnery Range and possibly, in undeveloped regions within the Site. However, since a vast majority of the Site is residentially developed, it is believed that if a desert tortoise was encountered, it would likely be an escaped captive tortoise and not wild (AGFD, 2019).

The Site is not located within a national wildlife refuge, national park, national forest or grassland. Additionally, according to the United States Fish and Wildlife Service (USFWS) Wetlands Mapper, there are no wetland data for the area (USFWS, 2019).

2.6.2 Threatened and Endangered Species

According to criteria in the Army Checklist for Important Ecological Places (Department of the Army, 2006), the Site is located within the AGFD Region 3- Kingman Unit 15B game management unit. Within this region, the desert tortoise is listed as threatened. The preferred habitat for a desert tortoise is almost entirely confined to warm creosote bush vegetation, characteristic of the Mohave desert. The habitats are associated with well-drained sandy loam soils in plains, alluvial fans, edges of basaltic flow, and other rock outcrops (NatureServe Explorer, 2019). Tortoise burrows are most often nearby to washes and arroyos in the Mohave Desert habitat. However, as mentioned, the majority of the Site is residentially developed, and therefore, the area is no longer suitable for desert tortoise habitat. Hence, as mentioned, it is believed that if a desert tortoise was encountered, it would likely be an escaped captive tortoise and not wild (AGFD, 2019). Table 2-1 provides the list of threatened or endangered species discussed.

2.6.3 Rare and Threatened Plant Species

As discussed above, all six listed threatened or endangered plants (Arizona cliff rose, Fickeisen plains cactus, Geisich mallow, Holgrem milk-vetch, Jone’s cycladenia, and Siler pincushion cactus), are restricted to specific locations within Mohave County (USFWS, 1986, 1995, 2006, and 2008; NatureServe.org, 2019), and therefore, unlikely to occur within the Site.

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3.0 PREVIOUS INVESTIGATIONS AND ACTIONS

This section presents a summary of the investigation and remediation activities from 1993 to June 2017.

3.1 1993 INVENTORY PROJECT REPORT

An Inventory Project Report (INPR) was completed for the Kingman GTG Gunnery Range in September 1993 (USACE, 1993). The INPR established the Kingman GTG Gunnery Range as a FUDS with a preliminary Site boundary, assigned the FUDS Project Number J09AZ041201, and contained a completed risk assessment code (RAC). The INPR assigned a RAC score of 4 based on a hazard severity of ’negligible’ and a hazard probability of ‘probably’.

The RAC is a score developed and applied by USACE that is assigned to individual sites. The RAC score of a site is intended to be a measure of the risk of injury to people due to accidental detonation of unexploded ordnance (UXO) on that site. The score applies particularly to some types of ordnance that may detonate simply by being touched, moved, or picked up. The RAC score is 1, 2, 3, 4, or 5, with 1 representing the highest risk and 5 representing the lowest risk.

3.2 2004 ARCHIVES SEARCH REPORT SUPPLEMENT

An ASR Supplement was completed in November 2004 (USACE, 2004). This Report was prepared after reviewing available records, photographs, and reports that documented the Site history. The ASR Supplement identified five MRSs, including the Site, which is the subject of this Report. The ASR Supplement evaluated at the Site and assigned a RAC score of 5 based on its use as small arms only range.

A Final ASR was completed in March 2006 (USACE, 2006) and documented a Site visit, community interviews, and confirmation of munitions debris (MD) findings. The ASR team found MD in the form of spent small arms projectiles, but no MEC were observed.

3.3 SITE INSPECTION

An SI was conducted in September 2010 (Parsons, 2011). The purpose of the SI was to assess the presence of MEC and MC. The SI included a qualitative visual reconnaissance. With the exception of the undeveloped northeastern portion, the Site was noted to be almost completely developed for residential use, similar to present conditions.

No MEC was observed during the SI. However, the reconnaissance team found small arms MD, consisting of a 0.50 caliber projectile at one location and abundant debris from clay pigeons at several locations. 0.50 caliber ammunition was not authorized for use or documented at used at the skeet range during the time the base was active (Parsons, 2011). No other MDs were observed.

The SI also included the collection of soil samples from seven locations (referred to as sampling units [SUs]) within the Site. The SU locations were selected to represent areas with the highest likelihood of MC-related impact. The size of the SUs was based on likely contaminant release area and receptor exposure area. SUs with dimensions of approximately 100 feet by 100 feet (i.e., SUs: SS-12, SS-13, SS-14, and SS-18) were selected based on research conducted at active firing ranges by Cold Regions Research and Engineering Laboratory (CCREL, 2004). Smaller SU sizes were based on limited lot size (i.e., SUs: SS-15 at 100 feet by 50 feet, SS-17 at 100 feet by 50 feet, and SS-19 at 42 feet by 16 feet). Samples were also collected from two ambient (background) SUs, located in “non-Department of Defense-impacted” areas, to indicate metals and PAH concentrations naturally occurring in surface soil at the Site. Soil sampling was done using an incremental sampling method (ISM) per USACE Interim Guidance 09-02 (USACE, 2009). The soil samples from each SU consisted of 100 individual increments of soil. These sample increments were collected between the soil surface and two inches bgs.

Each soil sample was analyzed for the following analytes:

- PAHs, using United States Environmental Protection Agency (USEPA) Method 8270C-Selected Ion Mode (SIM) (extraction method 3540C)
- Metals, using USEPA Method 6010B

Metals (antimony, copper, lead, nickel, and zinc) and 16 PAHs (acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)-fluoranthene, chrysene, dibenz(a,h)-anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2- methylnaphthalene, naphthalene, phenanthrene, and pyrene) analytes were detected at concentrations that exceeded their respective ambient concentrations. The PAHs were noted to be a component of the debris from clay pigeons used at the skeet ranges. The detected PAHs and antimony, copper, lead, and zinc were assessed in a screening-level risk assessment to evaluate if their concentrations posed any risk to human health or ecological receptors.

Based on the analytical results presented in the SI report, it was concluded that there is a potentially unacceptable risk to human health due to exposure to PAHs in the surface soil at the Site. Human receptors (current and future residents, commercial or industrial workers, and Site visitors or recreational users) were considered to be the primary receptors of concern at the Site. These receptors were expected to be exposed to MC in surface soil through dermal contact, incidental ingestion, and inhalation of re-suspended particulate matter. Because the area was primarily developed for residential use, ecological receptors were not considered to be receptors of concern at the Site.

An RI/FS was recommended in the SI to evaluate the extent of clay pigeon debris and soil contamination. It was also concluded that an expedited evaluation of a removal action for clay pigeon debris was warranted.

3.3 TCRA

The TCRA was performed to address visible debris from clay pigeons associated with elevated PAH concentrations in the near-surface soils. The primary objective of the TCRA was to immediately reduce the highest PAH concentrations to below Arizona residential SRLs (ADEQ, 2007) at residential properties within the Site, thus directly decreasing the associated potential for health concerns. For PAHs where Arizona SRLs were not available, the USEPA Residential Screening Levels (RSLs) were used. If neither Arizona SRLs nor USEPA RSLs was available, Texas Risk Reduction Program Rule Tier 1 Protective Concentration Levels (PCLs) were used.

The TCRA was focused on properties located within and southeast of the firing positions of the former skeet ranges (Figure 3-1). Under the TCRA, surface soil removal from 55 properties within this area was planned. The area selected was primarily assessed based on observed debris from clay pigeons. TCRA intended was to remove contaminated soil from the upper two (2) feet that have the most potential for human activities and exposure.

A *Final Time Critical Removal Action Workplan* (TCRA Work Plan) was prepared, including a detailed discussion of project-specific tasks required as part of the TCRA (Eco, 2013). Under the TCRA program, the PAHs-impacted soil from 55 properties was excavated and transported off-Site for proper disposal. The TCRA was implemented in two phases. Phase I of TCRA, including 10 properties, was performed by Eco in April and May 2013 (Eco, 2014b-i). Phase II, including 45 properties, was implemented by Ahtna from October 2013 to July 2014 (Ahtna, 2014a-aq). The excavated areas were backfilled with clean fill material and compacted.

Following soil removal and before placing fill materials, confirmation soil samples were collected and analyzed to verify that impacted soil was removed from each property. Confirmation soil samples were collected using ISM, as outlined in the Sampling and Analysis Plan (SAP) in TCRA Work Plan (Eco, 2013). Confirmation soil sample results were compared to the applicable screening criteria. PAH concentrations for the confirmation soil samples collected during the TCRA are summarized in Table 3-1. Table 3-2 includes a summary of metals concentrations.

The excavated soil was profiled as non-Resource Conservation and Recovery Act Special Waste, manifested, and transported to La Paz County Regional Landfill for disposal.

3.4 PREVIOUS RI

During the SI work by Parsons (Parsons, 2011), significant clay pigeon debris was observed in approximately 55 parcels, located within and southeast of the former skeet ranges' firing positions. These 55 parcels were selected for TCRA, as discussed in detail in Section 3.3. Under the TCRA program, the PAHs-impacted soils from the 55 parcels were excavated and transported offsite for proper disposal. The excavated areas were backfilled with clean fill material. The TCRA work was conducted from April 2013 through July 2014.

Properties not remediated as a part of TCRA were included in the RI/FS program to investigate the nature and extent of the PAHs, lead, and other metals (antimony, copper, and zinc) in the soil at the Site.

An RI/FS Work Plan was prepared to define the procedures for implementing the RI/FS program at the Site (Eco, 2014a). The ADEQ approved the Work Plan. Between December 2014 and February 2017, 66 parcels, including 10 sub-parcels, were investigated by Eco as part of the RI program (Figure 3-2). Soil samples were collected using ISM during the RI. The following sections describe the sample collection methods and subsequent modification to the methods as agreed to by the USACE and ADEQ.

3.4.1 Phase I Sampling

Surface soil samples were collected from a grid of 50 increments distributed approximately equally within accessible exposed surface areas within a decision unit (DU) (up to 3 samples collected from each of the 50 locations). The samples were submitted to a laboratory for chemical analysis. Soil was defined to be "clean" when the concentrations of analytes were found to be below applicable screening levels for residential soil.

Surface soils were characterized to identify the "clean" versus the "dirty" DUs (parcels) in the RI area. The surface soil for each DU/parcel was to be evaluated by:

- Visually examining each DU. If a DU appeared to contain clay pigeons or bullet fragments, the plan was to collect one surface incremental sample (50 increments each) for analysis at the laboratory to confirm surface soils are "dirty."
- If contamination were not visually observed, the plan was to collect triplicate incremental soil samples (50 increments each) to be analyzed at the laboratory to confirm surface soils are "clean."

This method (visual observation, collect one soil sample) was later modified by Eco to include the collection of triplicate incremental samples from the surface regardless of visual inspection during each mobilization.

3.4.2 Phase II Sampling

The original sampling protocol for the Phase II sample collection, as defined in the Work Plan (Eco, 2014a), was implemented during five sampling events from December 2014 to November 2015. During this period, for all subsurface sampling, Eco collected each incremental soil sample using 10 borings located randomly within each DU. Five increments were collected from within the 1-foot depth interval, to prepare an incremental sample of at least 50 increments. The subsurface soil incremental samples were collected using the decision criteria discussed below:

- If the subsurface soils appeared contaminated (if many clay pigeons or lead fragments were observed) at a particular 1-foot depth interval, only one incremental soil sample was planned to be collected from that interval (to confirm contamination). Soil would then be sampled from the next 1-foot interval until a maximum depth of four feet was achieved, or two consecutive 1-foot intervals appeared to be "clean".
- Plans were to collect triplicate incremental samples at two consecutive 1-foot intervals that appeared to be clean.

After reviewing the analytical data for the five sampling events from December 2014 to November 2015, Eco determined that impacts to the 3 feet and 4 feet soil samples were minimal and petitioned the USACE and ADEQ to modify the Phase II sampling protocol.

3.4.3 Modified Sampling Protocols, January 2016

Eco and USACE representatives met with ADEQ in January 2016 to discuss technical aspects of the project. The main discussion concerned the collection of soil samples at depths of 1 and 2 feet and the discontinuation of the collection of soil samples at depths of 3 and 4 feet. After discussion, a revision to the sampling approach for future DUs was agreed on.

The revised procedure would be as follows:

1. Incremental soil samples would be collected in triplicate at the surface and 1-foot and 2-foot depth intervals.
2. The surface soil sample would be analyzed. The 1-foot and 2-foot triplicate samples would be kept in a refrigerator in the laboratory to be analyzed only if compound concentrations exceeded the Arizona Soil Remediation Levels (SRLs) in the surface samples.

3. No sampling would be conducted deeper than 2 feet pending review of work completed using the revised approach described above.

4. Because PAHs analysis for the 1-foot and 2-foot soil samples would exceed the regulatory mandated holding times, they would be flagged to identify that. It was agreed that this would not detract from the usability of the results for project purposes.

On June 29, 2016, Eco hosted a conference call with members of the USACE and ADEQ to review the revised sampling effort's results. The decision was made by USACE and ADEQ to continue collecting soil samples at one and two feet for the Phase II sampling events. PAH concentrations for the soil samples collected during the previous RI are summarized in Table 3-3. Table 3-4 includes a summary of metals concentrations. Table 3-5 includes 95-percent Upper Confidence Limit (95% UCL) concentrations for the previous RI samples.

3.5 SITE RECONNAISSANCE

On July 11th and 12th, 2017, a team of USACE and NOREAS representatives conducted a Site reconnaissance to evaluate the conditions at the Site visually. The reconnaissance was focused on finding evidence of clay pigeons on the ground. The team traversed the Site, visually examining the accessible areas within the Site, including utility easements and undeveloped parcels. Clay pigeon fragments were identified visually by 1) distinct black color; 2) circular-like patterns or raised printed text on black fragments; 3) distinct black "streak" that skeet pieces leave when rubbed against a hard rough surface, similar to a soft pencil; and 4) observance of fragments to be more likely than not in a "cluster" with several other black fragments.

The summarized results of the Site reconnaissance are shown in Figure 3-3. The figure shows the areas inspected and depicts where clay pigeon fragments were spotted. Aerial photographs from 1967 and 1978 (Appendix A) show evidence of surface spreading of the skeet beyond the initial skeet distribution visible in 1943 and 1954 aerials (Appendix A). As noted in the QAPP Addendum (NOREAS, 2018), the July 2017 reconnaissance demonstrated that the visualization of shotfall zones previously used as a conceptual site model (CSM) for the Site does not accurately depict the distribution of observed skeet at the Site (and therefore should also not be interpreted as accurately representing the distribution of shot pellets). As such, it was determined the extent of investigations would need to be extended beyond the planned 284 parcel area.

4.0 REMEDIAL INVESTIGATION APPROACH

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

4.1 REVIEW OF HISTORICAL AND SITE RECONNAISSANCE DATA

As a part of the current RI field investigation, relevant data and results from the previous investigations were evaluated along with TCRA actions and results from the previous RI work started by Eco in 2013. Historical data have been incorporated into the overall evaluation of potential impacts and associated risk assessment. Also, the following historical reports/data were evaluated to assess chemicals of potential concern (COPC) sources:

- *Inventory Project Report Kingman Ground-to-Ground Gunnery Range* (USACE, 1993);
- *Archives Search Report Supplement for Kingman Ground-to-Ground Gunnery Range* (USACE, 2004);
- *Archives Search Report Findings Kingman Ground-to-Ground Gunnery Range* (USACE, 2006);
- *Final Volumes I & II Site Inspection Report Kingman Ground-to-Ground Gunnery Range* (Parsons, 2011);
- *Final Time Critical Removal Action Workplan, Formerly Used Defense Site, Military Munitions Response Program, MRS03-15 Skeet Ranges, Former Kingman Ground-to-Ground Gunnery Range* (Eco, 2013);
- *Final Remedial Investigation (RI) and Feasibility Study (FS) Work Plan, Formerly Used Defense Site, Military Munitions Response Program, MRS03-15 Skeet Ranges, Former Kingman Ground-to-Ground (GTG) Gunnery Range* (Eco, 2014a);
- *Draft, Environmental Data Report Preparation of RI/FS Document Report, Formerly Used Defense Site, Military Munitions Response Program, MRS03 – 15 Skeet Ranges Former Kingman Ground-to-Ground Gunnery Range Kingman* (Eco, 2017); and

As discussed in Section 3.0, most of the removal actions were related to designated areas for TCRA (i.e., 55 of 284 properties/parcels initially estimated to encompass the Site). The previous RI (Eco, 2013 and 2017), focused on an additional 66 parcels (of the 284 parcels not remediated as part of the TCRA), to evaluate the extent of clay pigeon debris and soil contamination. A total of 27 of the parcels investigated to date are outside of the of the originally-estimated shotfall area. Additionally, the 2017 Site Reconnaissance (NOREAS, 2017), conducted by USACE and NOREAS representatives, evaluated the conditions at the Site, including utility easements and undeveloped parcels.

4.2 FIELD INVESTIGATION APPROACH

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

1. continuing the completion of remedial investigation of properties/parcels started by Eco in 2013;
2. including properties/parcels that extended beyond the initial 284 parcels (based on the 2017 site reconnaissance surveillance);
3. performing field activities at properties/parcels for which right of entries (ROEs) were granted; and
4. incorporating adjoining parcels that were located next to parcels impacted by PAHs and/or metals above Project Action Limits (PALs; NOREAS 2018). In these instances, bordering parcels were added to the list of parcels proposed for sampling, and a ROE for sampling was pursued.

Based on these criteria, RI field investigation activities were completed at 60 parcels, including one sub-parcel (APN31021080[A&B] between 15 January and 31 October 2019. Table 4-1 tabulates the list of parcels evaluated and depicted in Figure 4-1. RI field investigation activities are currently ongoing. The ongoing investigation of the remaining parcels sampled after 31 October 2019, will be submitted in an addendum to this RI Report.

As discussed in the Final QAPP Addendum No. 1 (NOREAS, 2018), the sampling approach was designed to evaluate COPCs on a parcel-by-parcel basis. Each parcel sampled was identified by a unique Assessor's Parcel Number (APN), with considered DUs: DU-1 [surface (0 to 2 inches)], DU-2 [subsurface (0 to 1-foot)], DU-3 [subsurface (1-foot to 2 feet)], DU-4 [subsurface (2 feet to 3 feet)], DU-5 [subsurface (3 feet to 4 feet)], DU-6 [subsurface (4 feet to 5 feet)], and DU-7 [subsurface (5 feet to 6 feet)], using a two-phase approach.

The field investigative method was based on visual observation of skeet fragments and laboratory soil analytics for inorganic constituents (metals) and organic constituents (PAHs). Table 4-2 summarizes the laboratory analytical methods used for the RI.

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

As discussed in the QAPP Addendum No. 1, the extent of COPCs was assessed with the updated PALs used as a screening value to determine if the vertical extent of contamination was defined by the RI sampling. The updated PALs were based on the modification of SRLs to reflect changes in the toxicity values for PAHs by USEPA (2018). The rationale and methodology used for the proposed PAL revisions are summarized in Section 6.5 and discussed in detail in Appendix B. In cases where the revised toxicity calculations resulted in an increase in the PAL, a lower project quantification limit goal was maintained to preserve the integrity of the data set for use in Site-specific risk assessment.

4.3 LABORATORY ANALYTICAL PROGRAM

All soil samples collected during the RI were submitted for analysis to Eurofins Environment TestAmerica Laboratories, Inc. (Eurofins TestAmerica) in Arvada, Colorado (Eurofins TestAmerica-Denver). Eurofins TestAmerica-Denver holds current Department of Defense

(DoD) Environmental Laboratory Accreditation Program (ELAP) accreditation for the analytical methods used. Samples were submitted for ISM processing and analysis of PAHs by USEPA Method 8270C SIM, and for the metals, including antimony, copper, lead, and zinc by USEPA Method 6010B. COPCs were reported in milligrams per kilogram (mg/kg) for metals and micrograms per kilogram (µg/kg) for PAHs.

Following the Final QAPP Addendum No. 1 (NOREAS, 2018), the analytical data was provided by the laboratory in report formats containing raw instrument and method quality control (QC) data to allow staged validation levels. Copies of the laboratory analytical reports are provided in Attachment 1 as a part of the parcel reports.

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

4.3.1 Data Analysis Methodology

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

For risk screening purposes, sample results using the 95% UCL concentrations are used as inputs for exposure area determinations in risk assessment. The ProUCL statistical summary and the 95% UCL values are provided in Section 6.0. In cases where an analyte was not detected in a soil sample, a result equal to one-half of the analyte reporting limit was assumed for 95% UCL determinations.

Data validation was performed in accordance with DoD Quality Systems Manual (QSM) version 5.1, DoD General Data Validation Guidelines (DoD, 2018a), DoD Data Validation Guidelines Module 1 (DoD, 2018b), and blank data evaluation for metals analysis based on the DoD Module

2: Data Validation Procedure for Metals by ICP-OES (SW-846 6010) (DoD, 2018c), Final QAPP Addendum (NOREAS, 2018), Field Change Form Request (FCRF)-001 (NOREAS, 2019), and FCRF-002 (NOREAS, 2019b). The overall data quality was determined based on the analytical results generated for field and laboratory quality assurance/quality control (QA/QC) samples during this project. QA/QC for field activities was ensured through standardized sampling methods, rigorous documentation, and the collection of field QC samples as described in the Final QAPP Addendum (NOREAS, 2018). All laboratory analytical data were reviewed and validated by Synectics in Sacramento, California. A complete summary of the QC review is provided in Appendix C (Data Quality Summary Report).

4.3.2 Laboratory Quality Control

Laboratory QC samples for the Site were prepared and analyzed by the laboratory to monitor the analytical process. The laboratory QC samples included calibration and method blanks; laboratory control samples (LCSs); instrument tune, initial calibration, and continuing calibration verifications (ICVs and CCVs); internal standards; Inductively Coupled Plasma (ICP) interference check samples and serial dilutions; surrogate spikes; and matrix spike (MS) and matrix spike duplicate (MSD) samples. The laboratory analyzed all instrument tune, calibration, and QC samples at the method-required frequency. The analyses were performed within all specifications of the methods.

4.3.2.1 Field (Equipment) Blanks

Per the Final QAPP Addendum No. 1 (NOREAS, 2018), an equipment rinsate was collected after each parcel sampling event by washing the laboratory-provided rinse water over the cleaned hand auger bucket into sample containers. For this project, 74 equipment blanks were submitted for analysis for PAHs by USEPA Method 8270C SIM and for the metals, including antimony, copper, lead, and zinc by USEPA Method 6010B.

4.3.2.2 Triplicate/Replicate Samples

Following the Final QAPP Addendum No. 1 (NOREAS, 2018) and ITRC ISM-2 (ITRC, 2020), three replicate ("triplicate") soil samples were collected at each sample depth interval for each parcel sampled. The nature of ISM using this replicate sampling procedure negates the utility of collecting and analyzing a "field duplicate" sample because the sampling methods proposed essentially generate "triplicate" replicate samples. ISM significantly reduces sampling errors introduced by natural variability in the soils and heterogeneous distribution of potential contaminants in Site soils. The statistical methods are used to determine a 95% UCL of the three replicate samples' means.

4.3.2.3 Temperature Blanks

One temperature blank sample filled with tap water supplied by the laboratory was included in each cooler of samples shipped back to the laboratory. The laboratory read the temperature blank as the representative temperature of the samples within the cooler. Temperature blank data are included in the analytical laboratory reports provided in Attachment 1.

4.3.2.4 MS/MSDs

Matrix Spike and Matrix Spike duplicate (MS/MSD) samples were used to assess interferences in the analytical processes caused by sample matrix. The laboratory spiked the MS/MSDs with known concentrations of PAHs and/or metals and then analyzed the MS/MSDs. The percent recoveries were calculated to evaluate matrix effect. MS/MSD results are provided in the analytical laboratory reports and data validation reports located in Attachment 1 as a part of the parcel reports.

4.4 INTERPRETATION OF RESULTS

The analytical data collected during the current RI were used to evaluate the nature and extent of COPC impacts at the Site. Besides, available data and information from the other investigations, including the SI and previous RI, and TCRA were considered to interpret the extent of skeet and COPCs.

4.5 PRELIMINARY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section provides a summary of the ARARs preliminarily-identified for the site. ARARs include standards, requirements, criteria, or limitations under federal, or more stringent State environmental law (CERCLA Section 121 (d)(2)(A)). To be adopted as an ARAR at an USACE FUDS site, USACE must determine that the requirement is either "applicable" to conditions at the

Site or, if not applicable, that it is both "relevant" and "appropriate" based on site conditions. A requirement is applicable if compliance with it is legally required. A requirement is relevant and appropriate if USACE determines, based on its discretion, that the requirement is well suited to addressing Site conditions. In addition, State requirements are ARARs only if they are identified by the State in a timely manner.

The identification of ARARs is a prerequisite to evaluating and selecting a cleanup action (USEPA 1992). Under circumstances where a removal action is expected to be the first and final action at the site, the selected removal action must satisfy all adopted ARARs.

There are four basic criteria that define ARARs (USEPA, 1988). ARARs are (1) substantive rather than administrative, (2) applicable or relevant and appropriate, (3) promulgated, and (4) categorized as one of the following.

- <u>Chemical-specific</u> ARARs that address specific hazardous substances and are typically health- or risk-based numerical values that cleanups must achieve.

- <u>Location-specific</u> ARARs that must be achieved because of the specific location of the release and the related response action (e.g., requirements that address the conduct of activities in sensitive areas such as floodplains, wetlands, and locations where endangered species or significant cultural resources are present). Location-specific ARARs often focus on protecting resources in a specific area.

- <u>Action-specific</u> ARARs that are typically technology- or activity-based requirements or limitations on actions conducted to respond to the release of specific hazardous substances. Action-specific ARARs generally prescribe *how* a selected alternative must be implemented rather than *what* alternative may be selected.

The results of the preliminary ARARs analysis, including state ARARs, are summarized below. USACE plans to formally request ARARs from the State of Arizona prior to selection of remedial actions.

4.5.1 Chemical-Specific ARARs

The Arizona Administrative Code (AAC) promulgates remediation standards (AAC §R18-7-203). This Section requires remediation of soil so that any concentrations of contaminants remaining in the soil after remediation is less than or equal to: background (§R18-7-204), pre-determined remediation standards (§R18-7-205), or site-specific remediation standards (§R18-7-206). Unless background is met, the remaining concentrations shall not cause or threaten to cause violation of Water Quality Standards or exhibit a hazardous waste characteristic, or cause or threaten to cause an adverse impact to ecological receptors. Site specific remediation standards (AAC §R18-7-206) require use of a residential or a non-residential site-specific remediation level derived from a site-specific human health risk assessment, including remediation to residential level on property where there is residential use.

4.5.2 Location-Specific ARARs

No location-specific ARARs for the site have been identified.

4.5.3 Action-Specific ARARs

Potential action-specific ARARs are listed in Tables 4-3a and 4-3b.

5.0 SUMMARY OF 2019 RI FIELD ACTIVITIES

Between 15 January and 31 October 2019, 60 parcels, including one sub-parcel, were investigated as part of the RI. The following subsections provide a summary of the field activities completed as part of the RI. GPS Survey data by parcel is provided in Attachment 1 as a part of the parcel reports. Field activities were noted in a field logbook and documented on each parcel field log provided in the respective parcel reports in Attachment 1. Pre-field, during the field, and post-field activity photographs were taken at each parcel and provided in Attachment 1 as a part of the parcel reports.

5.1 RIGHT OF ENTRY AND UTILITY CLEARANCE

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

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

5.2 SITE DEMARCATION AND VISUAL SCREENING FOR SKEET AND LEAD SHOT

Between 15 January and 31 October 2019, as a part of the RI field investigation, parcels were delineated using high-visibility sampling whiskers to identify the corners of each parcel's sampling grid. Once parcels/DUs were delineated and staked, the DUs were then subdivided into 10 approximately equally sized grid SUs (Figure 5-1A). After demarcation was complete, observations for lead shots and/or clay pigeon fragments evidence at each parcel and within each SU at the ground surface and then again during subsurface field activities were recorded in a field logbook, and on each parcel field log. The lead shots and/or clay pigeon fragments locations were GPS surveyed and photographed if observed.

Clay pigeons were discerned from other debris by their distinct black color, circular-like patterns or raised printed text, and their ability to leave a distinct black "streak" when rubbed against a hard, rough surface. Skeet fragment and/or lead shot pellet detection, their location within each parcel by sampling units (SUs), size of skeet fragment, GPS survey point, and photographs are detailed in the respective parcel reports included as Attachment 1. Visual observations of skeet fragments observed on the surface and/or subsurface are discussed in Section 6.1.1.

5.3 ISM SOIL SAMPLING

As mentioned, soil samples were collected using ISM. Detailed procedures used were developed using guidelines from the USACE guidelines (USACE, 2009), the ITRC for *Environmental Management at Operating Outdoor Small Arms Firing Ranges* (ITRC, 2005), and ITRC *Technical and Regulatory Guidance: Incremental Sampling Methodology Update* (ITRC, 2020). ISM soil sample collection procedures used during the RI at each parcel are summarized below.

Following ISM grid delineation, a systematic random sampling approach was used to collect the surface soil samples (0 to 2 inches), and subsurface soil samples (0 to 1-foot, and 1-foot to 2 feet). Where required, subsurface samples were also collected from additional 1-foot depth intervals below 2 feet bgs.

5.3.1 Surface Sample Collection (0 to 2 inches)

Surface soil samples were collected from each of the 10 SUs (SU-1 through SU-10) and at 5 locations (A through E) within each SU (SU-1 through SU-10, Figure 5-1A). The five locations at each SU (A through E) included the four corners and center (Figure 5-1B). At each location (e.g., location A), 20 grams of soil were collected from three replicate sampling points (Replicates 1, 2, and 3). All five Replicate 1 samples from locations A through E were combined, resulting in a total mass of approximately 100 grams for Replicate 1 subsample at each SU. All the combined Replicate 1 subsamples from all SUs were combined in one sampling Zip-Loc™ type bag to generate the Replicate 1 surface sample with a total sample mass of approximately 1 kilogram (Figure 5-1C). Replicate samples were double-bagged in a Zip-Loc™ type bag, properly labeled, recorded on CoC documentation, placed on wet ice in coolers, submitted to Eurofins TestAmerica-Denver, and analyzed for USEPA Method 8270C SIM and USEPA Method 6010B. For each parcel, three replicate surface samples, each weighing approximately 1 kilogram, were submitted to the laboratory for chemical analysis. Sample identifications are discussed in Section 5.3.4.

The 60 parcels, including one sub-parcel (APN31021080[A&B][6] sampled between 15 January and 31 October 2019, are listed in Table 4-1 and depicted in Figure 4-1. The results are discussed in Section 6.0.

5.3.2 Subsurface Sample Collection (0 to 1-foot bgs)

Within each SU, three replicate 0 to 1-foot subsurface soil samples were collected at three locations (A, B, and C, Figure 5-1C) from hand-driven auger soil borings. Soil from the 0 to 1-foot interval of each boring was spread evenly, according to the depth of the sample within the interval, onto a new piece of plastic sheeting. An approximately 20-gram soil was collected from 5 evenly spaced intervals within each soil column retrieved. All five 20-gram samples from each hand auger boring were combined, resulting in a total mass of approximately 100 grams for the 0 to 1-foot subsurface Replicate 1 subsample in each SU. Each of those Replicate 1 subsamples were placed into a single new Zip-Loc™ type bag to generate a combined mass of approximately 1 kilogram as Replicate 1 sample for the entire parcel. The same procedure was followed to generate Replicate 2 and 3 samples for each parcel. Samples were double-bagged in a Zip-Loc™ type bag, properly labeled, recorded on CoC documentation, placed on wet ice in coolers, submitted to Eurofins TestAmerica-Denver and analyzed for USEPA Method 8270C SIM and USEPA Method 6010B.

See Figure 5-1C for an illustration of the subsurface sampling procedure. The location of each borehole cored was GPS recorded (Attachment 1). Subsurface soil sample results are discussed in Section 6.0.

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[6] The total area for parcel APN31021080 was larger than other parcels. Therefore, APN31021080 was divided to include 2 sub-parcels (labeled as 'APN31021080A' and 'APN31021080B'). Sub-parcel APN31021080A and APN31021080B was further subdivided into 10 approximately equal sized SUs and sampled as discussed above.

5.3.3 Subsurface Sample Collection (1-foot to 2 feet bgs)

Collection of three replicate subsurface soil samples from 1-foot to 2 feet at each parcel followed similar procedures described above for 0 to 1-foot replicate samples.

In accordance with Final QAPP Addendum No. 1 (NOREAS, 2018), subsurface soil samples were put on hold and not analyzed by the laboratory unless analytical results from the surface soil sample(s) (0 to 2 inches bgs) detected PAHs and/or metals above PALs. Then at that point, the subsurface soil samples were analyzed for USEPA Method 8270C SIM and USEPA Method 6010B. The exception to this rule was if there was visual evidence of skeet fragment(s) and/or lead shotgun pellet(s) observation on the parcel's surface or in the subsurface boreholes. Then, the subsurface soil samples were analyzed upon laboratory receipt, and analytical results were reported. Sampling results are discussed in Section 6.0.

5.3.4 Sample Identification

Each soil sample collected was identified by the Site name, parcel APN, sample replicate number, and depth of sampling. Samples were identified for 3 replicates to represent surface soils (0 to 2 inches; labeled as 'SS001' to 'SS003'), and as 3 replicates for subsurface soils (0 to 1-foot bgs, labeled as 'SS1001' to 'SS1003', and 1-foot to 2 feet bgs, labeled as 'SS2001' to SS2003'). Examples of the sample identifications for surface soil samples are presented below:

- MRS03-APNxxx-SS001
- MRS03-APNxxx-SS002
- MRS03-APNxxx-SS003

As an example, the Replicate 1 surface soil (0 to 2-inch bgs) collected from the Site at parcel with APN 31021063 was identified as 'MRS03-APN31021063-SS001'.

5.3.5 Phase II Sampling

During the advancement of soil borings, skeet fragments were observed at 2 feet bgs at four (4) parcels (APN 32404640, APN 32436019, APN 32436020, and APN 32439031). Therefore, as discussed in Section 4.2, subsurface (2 feet to 3 feet bgs; DU-4) soil samples and subsurface (3 feet to 4 feet bgs: DU-5) soil samples were collected. Sample collection at these deeper depths was conducted in a similar manner as described for the 0 to 1-foot and 1-foot to 2 feet bgs intervals, properly labeled and preserved on ice in coolers, submitted to Eurofins TestAmerica-Denver, and analyzed for USEPA Method 8270C SIM and USEPA Method 6010B. Results of the deeper sampling depth intervals from the four parcels/properties are discussed in Section 6.0.

As discussed before, when analytical results from the 1-foot to 2 feet depth intervals indicated above PALs for PAHs and/or metals, as a part of Phase II sampling, parcels were sampled at deeper depth intervals. The following additional parcels required resampling during the sampling activities completed between 15 January and 31 October 2019:

- Parcel with APN 32436012 indicated PAHs above PALs during Phase I sampling from analytical results reported from the 1 to 2 feet depth interval. Therefore, this parcel was sampled at depth intervals from 2 to 3 feet bgs and 3 feet to 4 feet bgs during Phase II sampling.

- Due to analytical soil sample results from the 1-foot to 2 feet, 2 feet to 3 feet, and 3 feet to 4 feet depth intervals with PAHs above PALs, parcel with APN 32439031 required additional, deeper subsurface sampling from 4 feet to 5 feet bgs and 5 feet to 6 feet bgs sample depth intervals.

The deeper depth interval sampling was performed similarly to the subsurface sampling procedures described above. Samples were labeled correctly and preserved on ice in coolers, submitted to Eurofins TestAmerica-Denver. Samples were analyzed for USEPA Method 8270C SIM and USEPA Method 6010B. The results of the deeper subsurface sampling depth intervals from these parcel/properties are discussed in Section 6.0.

5.4 DECONTAMINATION

Soil subsamples were collected using a small disposable plastic measuring cup, and a new cup used for each ISM sample. Therefore, equipment decontamination was not required, and equipment rinsate analyses were not performed. However, non-disposable sampling equipment (e.g., hand auger) was decontaminated. A three-step decontamination procedure was used: 1) Cleaning the non-disposable sampling equipment with commercial deionized/distilled water and Alconox™ soap; 2) Rinsing the equipment with commercial deionized/distilled water; and 3)

Rinsing the equipment with laboratory-provided deionized/distilled water. An equipment rinsate (referred to as 'equipment blank') was collected and analyzed for USEPA Method 8270C SIM and USEPA Method 6010B after each sampling event (parcel) by washing the laboratory-provided rinse water over the cleaned hand auger bucket into the sample containers. The wash and rinse water were periodically exchanged to ensure its cleanliness.

All liquids generated during the decontamination process were containerized and secured in storage pending disposal.

5.5 LABORATORY ANALYSES

Samples were analyzed for PAHs by USEPA Method 8270C SIM and for metals (antimony, copper, lead, and zinc) by USEPA Method 6010B. Soil samples received at the laboratory were dried, mechanically ground, and incrementally sampled, followed by digestion according to laboratory standard operation procedure (SOPs) and USEPA method 6010B. The soil samples for PAHs were processed through the same ISM procedure except for the grinding step, as documented in the Field Change Request Form (FCRF)-001 (NOREAS, 2019a). Following ISM, samples were extracted and analyzed according to USEPA method 8270C using GC/MS in SIM mode. COPCs were reported in mg/kg for metals and µg/kg for PAHs. Table 4-2 provides a summary of the laboratory analytical methods used.

5.5.1 Data Validation

Analytical data were reviewed and validated by a third-party validation firm, Synectics, Inc., using the Automated Data Review (ADR) and FUDSChem system. Data were subjected to a combination of 90 percent Stage 3 Validation Electronic and Manual (S3VEM) and 10 percent Stage 4 Validation Electronic and Manual (S4VEM), involving manual re-quantifications and recalculations from instrument output. Additional manual review was implemented to supplement the ADR review to achieve a higher level validation of Stage 3. Data validation included a review of sample preservation/condition, cooler temperature, verification of analytes, methods, quantitation, reporting limits, and technical holding times; gas chromatography/mass spectrometer (GC/MS) instrument tune, initial and continuing calibration verifications; laboratory blanks; ICP Interference Check Samples (metals), surrogates, LCS and MS/MSD; and field QC sample data (as applicable). Also, the chain of custody (CoC) record was reviewed to assess the potential for any field conditions that adversely impacted data quality. Relevant data validation qualifiers used are defined in the data validation reports provided in Attachment 1 as a part of the parcel reports.

Data validation results indicated that MS/MSD recoveries for antimony were outside the acceptance limits in select samples collected at seven (7) parcels with APNs: 31021063, 32404242, 32404550, 32405172, and 32436008, and 32436020, which resulted in the rejection of antimony data in 17 samples. This anomaly is likely related to the limitations in the digestion procedure used for ICP analysis resulting in lower antimony recoveries. As antimony is not considered a primary risk-driver for the Site, this data quality issue should not impact remediation decisions for the Site. In addition, data validation resulted in rejection ("R" qualified) of PAHs for two (2) parcels with APNs 31021080 (A and B) and 32436012 due to method holding time exceedances. The parcels previously discussed were not resampled due to skeet fragments' presence and the determination that the parcels will require remediation based on the skeet fragment observations. There are seven (7) parcels with rejected data where no skeet fragments were observed (APN32404558, APN32404668, APN32405265, APN32405267, APN32437017, APN32439020, and APN32405263A). These parcels were resampled from January to March 2020. Results from the parcels, along with results from RI activities conducted after 31 October 2019, will be presented in an addendum to this RI report.

In summary, 4,889 results (34.7%) out of the 14,076 results (sample and field QC samples) reported were qualified based on the review, and 423 results (3%) were rejected. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the limit of quantitation, are not considered qualified results in the above count.

Rejected data were not used for decision making unless visual observation of skeet fragments deemed the parcel to require remediation. Overall, project data quality objectives were met, and the data were considered to be acceptable. Analytical results with relevant validation qualifications are presented in Tables 6-1, 6-2, and 6-3, as discussed in Section 6.0. A complete summary of the QC data review is presented in Appendix C.

5.5.2 Equipment Blank Results

Seventy-four (74) equipment rinsate (EB) samples were collected during the RI and laboratory analyzed for USEPA Method 8270C SIM and USEPA Method 6010B at the completion of each APN/parcel. The purpose of this sampling was to verify that the pre-cleaned sampling equipment did not contain any residual contamination. As discussed in Section 4.3.2, the equipment rinsate samples were collected by pouring laboratory-provided distilled/deionized water over the cleaned hand auger bucket into laboratory provided sample containers.

The following samples were qualified as estimated due to QC exceedances:

- Holding time requirement was exceeded for extraction for PAHs in 18 EB samples. Results were adjusted to estimated non-detect using a "UJ"- flag for samples: EB-011619A (APN32405178), EB-011619B (APN32405177), EB-012319 (APN32404558), EB-012419 (APN3240556A), EB-013119 (APN32404553), EB-020519 (APN32404242), EB-021919 (APN32404527), EB-022619 (APN32404279), EB-030719 (APN32404208A), EB-030819 (APN32404688), EB-032119 (APN31038002), EB-040219 (APN31021063), EB-041719 (APN32404624), EB-052119 (APN32436012), EB-052219 (APN31021080A), EB-060719 (APN2405265), EB-060619 (APN32405267), and EB-102219 (APN32404211C). Samples designated as EB-030519 (APN32405168), EB-030619 (APN32404487), and EB-040919 (APN32437016) were qualified as rejected (R-qualified) for gross (greater than 2 times) holding time exceedance.
- Copper, lead, or zinc was detected at trace concentrations in five (5) EB samples.
- Select PAHs (e.g., Benzo(a)pyrene, benzo(g,h,i)perylene, and benzo(k)fluoranthene) were detected in eight (8) EB samples.
- Data for select PAHs were rejected (R-qualified) for EB-030619 (APN32404487) due to low surrogate or laboratory control sample recoveries indicating potential negative bias in results.

Relevant data validation qualifiers (i.e., "J"; "U"; and "UJ") are defined in the data validation reports provided in Attachment 1 as a part of the respective parcel reports. The quality and usability of analytical data collected for RI activities are further discussed in Appendix C (and a summary of the equipment blank analytical results and associated qualifiers are provided in Appendix C: Table C-1.

5.6 RESTORATION

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

5.7 LAND SURVEYS

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

For the location of the RI properties, horizontal coordinates were provided in US survey feet within State Plane Coordinate System based on the North American Datum of 1983 (NAD83) reference. Vertical coordinates were reported in US feet elevations based on the North American Vertical Datum of 1988 reference.

5.8 ROE STATUS

Some parcels proposed for sampling as a part of this RI, could not be sampled due to a lack of ROE. It is worth noting that many residents have not provided ROEs to USACE for the RI and remediation activities despite USACE's multiple requests. USACE's petition for ROEs has been well-publicized in the area through submittal of fact sheets, and public open house notices mailed to the community, community leaders, interested parties, federal, state, and local agencies; and media (more than 1,500 entities). Also, an open house was held for the community on August 20, 2018.

It was not possible to enter some of the properties that had already granted ROEs due to not being able to make contact with the property owner or property representatives, such as phone calls not being returned, properties had sold, lack of contact information, locked gates, and seasonal residents. Furthermore, in a few instances, owners that had already signed ROEs declined to grant access.

6.0 INVESTIGATION RESULTS

This section provides the results of the RI activities conducted between 15 January and 31 October 2019, at the Site. Where applicable, results from the previous RI activities conducted between December 2014 and February 2017 by Eco, as well as analytical results from the TCRA confirmation samples, are also discussed.

For the purpose of the RI, field investigation results from 179 parcels were considered with analytical data from 1,187 soil samples, including:

- 510 soil samples collected from 60 parcels during the current RI between 15 January and 31 October 2019. Of these 60 parcels, seven (7) parcels and one (1) resampled parcel APN31021080, divided into sub-parcel APN31021080 [A&B], had data that was rejected. Except for APN31021080 [A&B], parcels were not resampled, given that skeet was observed on the parcel surface and/or in the subsurface.

- 480 soil samples collected from the 66 parcels, including the 10 sub-parcels from the previous RI by Eco between December 2014 and February 2017, and,

- 197 confirmation soil samples collected from 55 parcels during the TCRA by Eco and Ahtna between April 2013 and July 2014.

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

6.1 VISUALLY-OBSERVED SKEET AND MUNITIONS COMPONENTS

As discussed in Section 3.6, clay pigeon fragments were identified visually by 1) distinct black color; 2) circular-like patterns or raised printed text on black pieces; 3) distinct black "streak" left when rubbed against a hard rough surface and 4) proclivity to be found in "cluster" of several black fragments. Figure 6-1 depicts visually observed skeet fragments and MC.

6.1.1 Skeet Fragment Observations

Skeet fragments were visually observed on 44 of the 60 parcels' surfaces (Figure 6-1), investigated by NOREAS between 15 January 15 and 31 October 2019. Skeet fragments were also visually observed on 21 of the 66 parcels' surfaces during the previous RI activities conducted between December 2014 and February 2017 by Eco. Surface skeet fragment observations by parcel APNs and SUs are provided in Table 6-1 below. Locations of SUs on each of the 66 parcels evaluated are included in the respective parcel reports (Attachment 1).

Table 6-1 Observation of Surface Skeet Fragments

#	APN #	Street #	Street Name	Sample Unit Skeet Observed
1	31021063**	--	E. Thompson Ave.	SU-3 & -6
2	31021078**	--	E. Thompson Ave.	SU-1, -3, -5, -8, -9, & -10
3	31021080**	--	E. Thompson Ave.	SU-3, -6, -7, & -8
	31021080A**	--	E. Thompson Ave.	SU-10
	31021080B**	--	E. Thompson Ave.	SU-10
4	31038002**	4015	E. Thompson Ave.	SU-8; one piece only
5	32404206A**	3910	E. Devlin Ave.	SU-4
6	32404208A**	3900	E. Devlin Ave.	SU-8
7	32404211C**	3879	E. Shaeffer Ave.	SU-5 through SU-8
8	32404241**	3846	E. Devlin Ave.	SU-7, -8 & -9
9	32404242**	3842	E. Devlin Ave.	SU-1 & -5
10	32404280**	3845	E. Shaeffer Ave.	SU-6 & -9
11	32404526**	3845	E. Devlin Ave.	SU-1, -5, -6, & -7
12	32404527**	3849	E. Devlin Ave.	SU-7
13	32404550**	3960	E. Hearne Ave.	SU-1, -2, -3, -5, -7, -8, & -10
14	32404552A**	3950	E. Hearne Ave.	SU-9
15	32404553**	3946	E. Hearne Ave.	SU-7, -9, and -10
16	32404582**	3945	E. Devlin Ave.	SU-8
17	32404625**	3990	E. Ryan Ave.	SU-5
18	32404629A**	3966	E. Ryan Ave.	SU-9
19	32404638**	3920	E. Ryan Ave.	SU-3, -4, -7, -8, and -9

#	APN #	Street #	Street Name	Sample Unit Skeet Observed
20	32404639**	3916	E. Ryan Ave.	All 10 SUs
21	32404640**	3910	E. Ryan Ave.	SU-1 through SU-9
22	32404658**	3925	E. Hearne Ave.	SU-1 through SU-6 & -9
23	32404659**	3929	E. Hearne Ave.	SU-7, -8, & -9
24	32404665**	3959	E. Hearne Ave.	SU-10
25	32404666**	3971	E. Hearne Ave.	SU-1, -4, -5, & -7
26	32404688**	3860	E. Ryan Ave.	SU-4 & -6
27	32405169**	4004	E. Lum Ave.	SU-4 & -7
28	32405172**	3990	E. Lum Ave.	SU-3, -4, and -5
29	32405174**	3974	E. Lum Ave.	SU-6, -7, -8, -9, & -10
30	32405176**	3966	E Lum Ave.	SU-1 through SU-6
31	32405177**	3960	E. Lum Ave.	SU-1 through SU-7
32	32405178**	3956	E. Lum Ave.	SU-1 through SU-9
33	32405206A**	--	E. Ryan Ave.	SU-2, -5, & -6
34	32405212**	3959	E. Ryan Ave.	SU-1 & -6
35	32405269**	3986	E. Thompson Ave.	SU-3 and SU-8
36	32405289**	3886	E. Thompson Ave.	SU-2 & -7
37	32436008**	3930	E. Lass Ave.	SU-1, SU-9, & SU-10
38	32436011**	3942	E. Lass Ave.	SU-4 & -9
39	32436012**	3946	E. Lass Ave.	SU-1, -5, -6, -7, & -10
40	32436019**	3974	E. Lass Ave.	SU-2, -3, -6, -7, -8, & -9
41	32436020**	3978	E. Lass Ave.	SU-3 through SU-9
42	32439031 **	3955	E. Snavely Ave.	SU-4 through SU-10
43	32439036**	3935	E. Snavely Ave.	SU-3 through SU-8
44	32439037**	3931	E. Snavely Ave.	SU-2 through SU-8
45	32404240*	3850	E. Devlin Ave.	DU-1
46	32404237A (E)*	3870	E. Devlin Ave.	DU-1
	32404237A (W)*	3870	E. Devlin Ave.	DU-1
47	32404211D*	3880	E. Devlin Ave.	DU-1
48	32404570*	3883	E. Devlin Ave.	DU-1
49	32404484*	3860	E. Hearne Ave.	DU-1

#	APN #	Street #	Street Name	Sample Unit Skeet Observed
50	32404653*	3899	E. Hearne Ave.	DU-1
51	32436014*	3954	E. Lass Ave.	DU-1
52	32436015*	3958	E. Lass Ave.	DU-1
53	32405194B (E)*	3876	E. Lum Ave.	DU-1
	32405194B (C)*	3876	E. Lum Ave.	DU-1
	32405194B (W)*	3876	E. Lum Ave.	DU-1
54	32405295*	3887	E. Lum Ave.	DU-1
55	32405296*	3895	E. Lum Ave.	DU-1
56	32405297*	3899	E. Lum Ave.	DU-1
57	32405308A*	3955	E. Lum Ave.	DU-1
58	32404282A (E)*	3871	E. Shaeffer Ave.	DU-1
	32404282A (W)*	3871	E. Shaeffer Ave.	DU-1
59	32439032*	3951	E. Snavely Ave.	DU-1
60	32439014*	3936	E. Snavely Cir.	DU-1
61	32439016*	3928	E. Snavely Plz	DU-1
62	32439015*	3930	E. Snavely Plz	DU-1
63	32439006*	3960	E. Snavely Way	DU-1
64	32405276A*	3950	E. Thompson Ave.	DU-1
65	32404655A	3905	E. Hearne Ave.	DU-1

-- Street address not available.
* Previous RI (December 2014 – February 2017)
** Current RI (January 2019 – October 2019)
(E) east section of subdivided parcel
(W) west section of subdivided parcel

Skeet fragments were visually observed in the subsurface during sampling in 8 of the 60 current RI parcels and in 5 of the 66[7] previous RI parcels. Subsurface skeet fragment observations by parcel are provided in Table 6-2 below.

[7] Surface samples for APN 32404640 were collected and analyzed in 2015, with subsurface samples collected and analyzed in 2019. Skeet was observed in subsurface soil at APN 32404640 in 2019.

Table 6-2 Observation of Subsurface Skeet Fragments

#	APN	Street #	Street Name	Depth (ft)
1	32404640 **	3910	E. Ryan Ave.	0 – 1 and 1- 2
2	31021080A**	--	E. Thompson Ave.	0 – 1
3	32436012 **	3946	E. Lass Ave.	0 - 1
4	32436019 **	3974	E. Lass Ave.	0 – 1 and 1-2
5	32436020 **	3978	E. Lass Ave.	0 – 1 and 1- 2
6	32439031 **	3955	E. Snavely Ave.	0 – 1, 1 – 2, 2 – 3, 3 – 4, and 4 – 5
7	32439036 **	3935	E. Snavely Ave.	0-1
8	32439037 **	3931	E. Snavely Ave.	0-1
9	32404237A (E)*	3870	E. Devlin Ave.	0-1
	32404237A (W)*	3870	E. Devlin Ave.	3 – 4 and 4– 5
10	32436014*	3954	E. Lass Ave.	0-1
11	32436015*	3958	E. Lass Ave.	3 – 4 and 4– 5
12	32405296*	3895	E. Lum Ave.	0-1
13	32439032*	3951	E. Snavely Ave.	0-1

-- Street address not available.
* Previous RI (December 2014 – February 2017)
**Current RI (January 2019 – October 2019)
(E) east section of subdivided parcel
(W) west section of subdivided parcel

Of the 60 parcels investigated during this current RI as of 31 October 2019, 41 of the 60 parcels evaluated are part of the 284 properties initially identified as potentially being impacted. Of the additional 19 parcels investigated outside of the original 284 parcels, 13 of these parcels have visually observed clay pigeons/skeet fragments. Parcels located outside of the initial 284 parcels are listed in Table 6-3 below by APN, street number and address, and whether skeet fragments were observed.

Table 6-3 Sampled Parcels Outside of Initial 284 Parcels and Observation of Skeet Fragments

#	APN	Street #	Street Address	Skeet Observed
1	31021080	--	E. Thompson Ave.	Yes
	31021080A	--	E. Thompson Ave.	Yes
	31021080B	--	E. Thompson Ave.	Yes
-	31038002	4015	E. Thompson Ave.	Yes
-	32404277A	3825	E. Shaeffer Ave.	No
2	32404487	3846	E. Hearne Ave.	No
3	32404550	3960	E. Hearne Ave.	Yes
-	32404552A	3950	E. Hearne Ave.	Yes
-	32404582	3945	E. Devin Ave.	Yes
4	32404624	3996	E. Ryan Ave.	No
5	32404625	3990	E. Ryan Ave.	Yes
6	32404688	3860	E. Ryan Ave.	Yes
7	32404727	3831	E. Hearne Ave.	No
8	32404730	3845	E. Hearne Ave.	No
9	32405168	4010	E. Lum Ave.	No
10	32405169	4004	E. Lum Ave.	Yes
11	32405218A	3991	E. Ryan Ave.	No
12	32405289	3886	E. Thompson Ave.	Yes
13	32405290	3880	E. Thompson Ave.	No
14	32436008	3930	E. Lass Ave.	Yes
15	32436011	3942	E. Lass Ave.	Yes
16	32436012	3946	E. Lass Ave.	Yes
17	32437016	3964	E. Packard Ave.	No
18	32439036	3935	E. Snavely Ave.	Yes
19	32439037	3931	E. Snavely Ave.	Yes

-- Street address not available.

6.1.2 Lead shot pellets

No MC (lead shot pellets) related to military munitions use were observed at the Site during the current RI.

6.2 SOIL SAMPLING RESULTS – PAHS

Soil samples were analyzed for PAHs by USEPA Method 8270C- SIM. Laboratory analytical reports and third- party data validation results for the samples collected from each parcel are included in the respective parcel summary report included in Attachment 1. Table 6-4 summarizes PAH concentrations for the samples collected during the current RI between 15 January and 31 October 2019. Table 6-5 includes 95% UCL PAH concentrations by sample depth and DU for each parcel for the samples collected during the current RI.

PAH concentrations are available for a total of 1,187 soil samples collected from 179 parcels during the TCRA, previous RI, and the current RI (as of 31 October 2019). PAH concentrations for the confirmation soil samples collected during the TCRA and previous RI are summarized in Tables 3-1 and 3-3, respectively. For the previous RI sampling data with triplicate samples, 95% UCLs for PAHs were calculated. Of the 66 parcels, there were 12 parcels that did not have triplicate samples collected. The 95% UCL concentrations for PAHs in soil samples collected during the previous RI are included in Table 3-5.

6.3 SOIL SAMPLING RESULTS – METALS

Soil samples were analyzed for antimony, copper, lead, and zinc by USEPA Method 6010B. Analytical results for the metals from samples collected during the current RI through 31 October 2019, are presented in Table 6-6. Metals concentrations for the samples collected during the TCRA and previous RI and TCRA are presented shown in Tables 3-2 and 3-5, respectively. Statistical summary results with 95% UCL metals concentrations for each DU at a given parcel are presented in Table 6-5 for the samples collected during the current RI. Table 3-5 includes 95% UCL concentrations of metals for the samples collected during the previous RI.

6.4 HUMAN HEALTH RISK ASSESSMENT

To assess potential health impacts associated with the contaminants detected in soil, HHRAs were prepared for each of the assessor parcels (parcels) investigated by NOREAS Inc. from 15 January 15, 2019 to 31 October 2019, and for parcels previously investigated by from 2014 to 2017, as part of the Remedial Investigation (RI). This section summarizes the HHRA findings. Additional details of the HHRA are presented in Appendix B.

6.4.1 Hazard Identification

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

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

6.4.2 Exposure Assessment

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

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

The exposure point concentration (EPC) for each parcel was determined using the 95% Chebyshev UCL of the COPC results for the depth interval evaluated.

6.4.3 Risk Quantification

To quantify potential health risks, the USEPA RSLs were used to evaluate carcinogenic and noncarcinogenic health effects, as they are based on human health risk. The RSLs correspond to either a one in a million (10^{-6}) risk level for carcinogens or a HI of 1 for non-carcinogens.

Carcinogenic COPCs are those that are known or suspected of causing cancer. Cancer effects are evaluated based on the assumption that any level of exposure to a carcinogenic compound can cause an effect. Noncarcinogenic COPCs are those that may result in deleterious health effects, other than cancer.

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

For parcels investigated from January to October of 2019, risks are evaluated separately using data combined from the surface sampling and 0- to 1-foot depth, and from all-depths (Table 6-7). For parcels investigated from 2014-2017, risks are calculated separately for the surface and for each one-foot interval sampled below the surface.

6.4.4 Risk Results

The HHRA results are expressed as carcinogenic risk and noncarcinogenic hazard. Carcinogenic risks are expressed in terms of probabilities. That is, a probabilistic estimate of the upper-bound probability of an individual developing cancer as a result of exposure to a particular level of a human carcinogen. For example, the probability expressed as 1×10^{-5} can be read as a probability of cancer of one in 100,000. Carcinogenic risk probabilities ranging from 10^{-4} to 10^{-6} are generally considered within an acceptable exposure level by USEPA (National Oil and Hazardous Substances Contingency Plan; 40 Code of Federal Regulations 300.430).For noncarcinogens, the indicator calculated is a noncarcinogenic hazard. The hazard is the ratio of the EPC divided by the COPC specific RSL, which is a level believed to be without deleterious health impacts to sensitive subpopulations. A total hazard less than unity, or one, is believed to be without adverse health effects to the most sensitive subpopulations. To assess lead, the USEPA residential soil screening level (400 mg/kg) was selected for comparison to parcel concentrations.

The results of the HHRAs are presented in Tables 6-7 (January to October 2019 RI sampling) and Tables 6-8a and 6-8b (2014-2017 RI sampling), and summarized on Figure 6-2. Seventy-two (72) of the 124 RI parcels were quantified with a carcinogenic risk factor above 10^{-6} (Tables 6-7 and 6-8a). TCRA confirmation soil sample results of the 2-foot confirmation samples from the 55 TCRA parcels (Tables 3-1 and 3-2) were also compared to acceptable human health risk levels for PAHs in the soil. Subsurface soil in 50 of the 55 parcels had confirmation sample results with PAHs in soil above the 2014 established cleanup levels. Non-cancer human health risks associated with metals were below the threshold hazard of 1, and lead concentrations were found to be below the USEPA residential soil screening level at all parcels.

6.4.5 Uncertainties and Limitations of the HHRA

Various uncertainties are associated with the results of the HHRA, and are detailed in Appendix B. Significant limitations are associated with sampling, as samples were not collected beneath homes. As such, changes in land use may expose additional areas containing COPCs.

The most prominent limitation of the HHRA is that soil sampling necessarily excluded larger clay pigeon debris (skeet fragments) from chemical analysis. The presence of significant clay pigeon debris at a parcel represents an on-going source of contamination both through direct exposure (ingestion) and the potential to contribute to soil contamination following further weathering/disintegration of this material. Figure 6-2 presents a summary of the results of HHRA and overlays visual observations of skeet fragments at a parcel. Observations of skeet fragments are not consistently correlated with the calculated risks for a parcel.

6.5 ECOLOGICAL RISK ASSESSMENT

An ecological risk assessment entails a qualitative and/or quantitative appraisal of the actual or potential impacts of a hazardous waste site on plants and animals other than humans or domesticated species (EPA, 1997, USACE, 2010). Consistent with this, and given the nature of the site, this section provides a qualitative assessment of the potential risks to ecological receptors. Ecological exposures are limited to urban based wildlife including mammals, birds and reptiles.

The Site is located in an area almost fully developed, or under development for residential housing. As presented in Section 2.6, no special-status species or their characteristic habitats are known or likely to be present at the site. The residential lots are general landscaped or covered in disturbed soils, landscape rock and/or concrete driveways and patios. Neither the current nor the anticipated future use of the Site presents a suitable habitat for sensitive species or has the resources to support viable populations of common wildlife (e.g., raccoons, skunks).

Urban wildlife could be exposed to the metals and PAHs in the soils through direct contact, incidental ingestion or through prey items that have accumulated the metals or PAHs as they forage intermittently around the area. There are no habitats in the area that would attract wildlife so that any exposure would be more than intermittent in the various residential lots. A discussion of the site contaminants in regards to ecological exposure is presented below.

PAHs – Exposure to PAHs by wildlife would be influenced by the arid climate, limitation of soil moisture and organic carbon, and the source of the PAHs from clay pigeons. PAHs introduced to soil in carbon-rich sources such as coal tar-based skeet are sequestered in the soil in a more stable form and recalcitrant to extraction. Specifically, partitioning of PAHs out of the clay pigeon source material may decrease substantially after initial weathering effects in the natural environment. (Xia et al., 2016). The uptake of PAHs by earthworms occurs primarily by direct contact with the soluble phase of the soil solution (interstitial porewater). As the mixture of PAHs age, bioavailability changes as the fraction remaining bind more tightly, thereby reducing bioavailability. Chemicals in soils "age" by becoming incorporated inside the crystal lattice structure of the soil particle, or partitioning onto organic matter or soil nanopores, so they are no longer available for uptake by organisms. Bulk sediment chemistry methods can measure PAHs sequestered in this manner but it is not biologically available to organisms. Animals may be exposed to PAHs in soils either as the result of direct ingestion or indirect ingestion in food items; however, in development of the ecological soil screening levels for PAHs, the EPA used an uptake factor of zero (0) for estimating the concentration in prey for the mammalian carnivore (USEPA, 2007a). Based on the source material and physical condition of the soil, and lack of habitat, ecological exposure to bioavailable PAHs is expected to be minimal and insignificant.

Metals – Table 6-5 shows a summary of the 95% UCL concentrations for the soil samples collected in 2019 for antimony, copper, lead and zinc. A comparison of the 95% UCL concentrations of antimony, copper, lead, and zinc to published screening levels shows that the majority of parcels and species are not at risk; however, there are a few parcels with concentrations that exceed the screening values for various species. The screening values are based on conservative no-effect toxicity levels, assume 100% bioavailability and assume 100% diet from a parcel. Determination of ecological risk based on exposure to soils in a residential lot would be modified by the area use of the wildlife species (i.e., the residential lots present a small area, whereas wildlife would forage across a large area). Direct comparison of the detected concentrations to the screening values only presents a snapshot of where site specific conditions should be considered. For example, APN 31021080A (E. Thompson Ave.) has detections of copper, lead, and zinc in the surface sample greater than most of the small mammal screening values.

Antimony - For antimony, many of the 95% UCLs are below 1 mg/kg to 4 mg/kg with a few exceptions (for example: 7.69 mg/kg from APN 31021093 and 6.04 mg/kg from APN 32436011). EPA ecological soil screening levels (eco-SSL) eco-SSLs are available for earthworms (78 mg/kg) and mammals (0.27 mg/kg). EPA does not present screening levels for antimony for plants or birds (EPA, 2005a). The Los Alamos National Laboratory (LANL) ecological screening levels at the conservative no adverse effect level are: 2.3 mg/kg for the deer mouse, 7.9 mg/kg for the montane shrew, 2.7 mg/kg for the mountain cottontail, 46 mg/kg for the gray fox and 45 mg/kg for the occult little brown myotis bat (LANL, 2017).

Copper – Concentrations of copper are generally between 15 mg/kg and 50 mg/kg in the surface soils. Some notable exceptions include 311 mg/kg from APN 31021080A and 327 mg/kg from APN 32404556A. EPA eco-SSLs for copper are available for plants (70 mg/kg), earthworms (80 mg/kg), birds (28 mg/kg), and mammals (49 mg/kg) (EPA, 2007b). The LANL ecological screening levels at the conservative no adverse effect level are: 20 mg/kg for the American robin, 63 mg/kg for the deer mouse, 42 mg/kg for the montane shrew, 260 mg/kg for the mountain cottontail, 4,000 mg/kg for the gray fox and 49 mg/kg for the occult little brown myotis bat (LANL 2017).

Lead - Concentrations of lead are generally between 15 mg/kg and 50 mg/kg in the surface soils. Some notable exceptions include 482 mg/kg from APN 32404629A and 125 mg/kg from APN 32404211C and 234 mg/kg from APN 31021080A. EPA eco-SSLs for lead are available for plants (120 mg/kg), earthworms (1,700 mg/kg), birds (11 mg/kg), and mammals (56 mg/kg) (EPA 2005b). The LANL ecological screening levels at the conservative no adverse effect level are: 14 mg/kg for the American robin, 120 mg/kg for the deer mouse, 93 mg/kg for the montane shrew, 310 mg/kg for the mountain cottontail, 3,700 mg/kg for the gray fox and 110 mg/kg for the occult little brown myotis bat (LANL, 2017).

Zinc - Concentrations of zinc are generally between 30 mg/kg and 100 mg/kg in the surface soils. A notable exception includes 374 mg/kg from APN 31021080A. EPA eco-SSLs for zinc are available for plants (160 mg/kg), earthworms (120 mg/kg), birds (46 mg/kg), and mammals (79 mg/kg) (EPA, 2007c). The LANL ecological screening levels at the conservative no adverse effect level are: 83 mg/kg for the American robin, 170 mg/kg for the deer mouse, 1,800 mg/kg for the montane shrew, 310 mg/kg for the mountain cottontail, 9,600 mg/kg for the gray fox and 110 mg/kg for the occult little brown myotis bat (LANL, 2017).

Although there are sporadic exceedances of ecological screening values in some individual parcels, as indicated above, the exposure for ecological receptors is conservatively estimated. The actual exposure would be less, as the area of impacts are smaller than the range area. The ecological screening levels also do not include a population viability assessment. Given this, any receptor exposures to soils are unlikely to be of ecological significance (i.e., not having a wide, population or severe ecosystem impact). That is, habitat or food sources to support any ecological receptors of concern are lacking, and the potential off-site migration of site-related chemicals to any nearby habitats or food-webs of concern is negligible. As noted in Section 2.6, there are no endangered species or sensitive environments that are going to be impacted by the site due to the lack of complete exposure pathways. Therefore, potential risks to ecological receptors are considered negligible for the site.

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7.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Between 15 January and 31 October 2019, as a part of the current RI, field investigation of 60 parcels was completed by NOREAS. Current RI results, as well as the previous RI by Eco (2014-2017) and TCRA (2013-2014), were evaluated in this report. This section presents a summary of RI field investigations, and findings, conclusions, and recommendations.

7.1 SUMMARY OF 2019 RI FIELD INVESTIGATIONS AND FINDINGS

Of the 60 parcels investigated during the current RI as of 31 October 2019, 41 parcels were part of the initial 284 properties identified within the shotfall zone area of the Site. The additional 19 parcels were outside the shotfall zone area (Figure 6-1). A summary of field investigations and results is presented in the following subsections.

7.1.1 Summary of 2019 RI Field Investigations

Prior to field activities associated with the current RI, USACE secured ROEs granting access to properties. Geophysical surveys, reconnaissance for visual observation of skeet fragments and lead shot pellets, soil sampling using ISM, and parcel restoration activities were completed at 68 parcels. Some parcels were unable to be sampled due to a lack of signed ROEs (e.g., property owners not able to make contact with property owners or property representatives, already signed ROEs now declining access to their property).

Soil samples were collected from the surface (0 to 2 inches) and subsurface [0 to 1-foot bgs, 1-foot to 2 feet bgs, and as needed, from 2 feet to 3 feet bgs), (3 feet to 4 feet bgs), (4 feet to 5 feet bgs), and (5 feet to 6 feet bgs)]. Soil samples were analyzed for PAHs by USEPA Method 8270C SIM and for the metals (antimony, copper, lead, and zinc) by USEPA Method 6010B.

7.1.2 Summary of 2014-2019 RI Findings

The following is a summary of findings based on results from the current RI field investigation activities between 15 January and 31 October 2019, sampling results from the previous RI, and TCRA confirmation soil sample results.

Skeet fragments were observed on the surface at 44 parcels and in the subsurface at eight (8) parcels during the current RI (Figure 6-1). During the previous RI by Eco, skeet fragments were observed on the surface at 20 parcels and in the subsurface at five (5) parcels. No lead shot pellets were observed at the parcels sampled during the current RI or previous RI.

PAHs and metals results for the soil samples collected from 60 parcels during the current RI, analytical results from the previous 66 RI parcels (December 2014 and February 2017), and TCRA confirmation soil sample results (April 2013 to July 2014) were considered to assess the human health risk associated with PAHs and metals at each parcel. PAH and metals concentrations for 1,187 soil samples were collected from 179 parcels during the TCRA, previous RI, and the current RI (as of 31 October 2019) were evaluated. Non-cancer human health risks associated with metals were below the threshold hazard of 1, and lead concentrations were found to be below the USEPA residential soil screening level at all parcels (Appendix B). Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene were found to be the COPCs. Of these COPCs, benzo(a)pyrene was found to contribute to the highest incremental lifetime cancer risks and noncarcinogenic hazard (Appendix B).

7.2 CONCLUSIONS

Between December 2014 and February 2017, 66 parcels, including 10 sub-parcels were investigated by Eco as part of the previous RI program. Concurrently with the previous RI, TCRA work was conducted on 55 parcels from April 2013 through July 2014. Between 15 January and 31 October 2019, as a part of the current RI, 60 additional parcels, including one sub-parcel was investigated. This RI report documents the results for these 60 parcels in conjunction with the results from the previous investigations (66 parcels) and TCRA (55 parcels). In addition, seven (7) investigated parcels APN 32404558, APN 32404668, APN 32405265, APN 32405267, APN 32437017, APN 32439020, and APN 32405263 had rejected data. These seven parcels were not used for decision making since no skeet fragments were observed. These parcels were resampled from January to March 2020. Results from these parcels, along with results from RI activities conducted after 31 October 2019, will be presented in an addendum to this RI report.

No lead shot pellets associated with the former 15 Skeet Ranges military munitions use were observed at any of the parcels sampled. Of the 124[8] RI parcels investigated from 2014 through 31 October 2019, skeet fragments were observed on the surface at 65 parcels and in the subsurface at 13 parcels, as summarized in Tables 6-1 and 6-2, and on Figure 6-2. Seventy-two (72) of the 124 RI parcels were estimated with carcinogenic risk above $1x10^{-6}$ as summarized in Tables 6-7 and 6-8a, and on Figure 6-2. TCRA confirmation soil sample results of the 2-foot confirmation samples from the 55 TCRA parcels (Tables 3-1 and 3-2) were also compared to acceptable human health risk levels for PAHs in the soil. Subsurface soil in 50 of the 55 parcels had confirmation sample results with PAHs in soil above the 2014 established cleanup levels.

In accordance with CERCLA, DERP, FUDS and NCP, the acceptable carcinogenic risk range is 10^{-6} to 10^{-4}. Based on the results of the RI, the risks associated with chemicals of potential concern (COPCs) reported in soil samples were either within this acceptable range, or below. The highest calculated carcinogenic risk was for APN 324-39-032 (3951 E Snavely Ave) calculated at $2x10^{-4}$ level at the 1- to 2-foot depth interval. Parcels with a cancer risk level above $1x10^{-6}$ will be carried forward into the FS. Non-cancer human health risks associated with metals were below the threshold HI of 1, and lead concentrations were found to be below the USEPA residential soil screening level. A significant limitation of the HHRA results is that soil sampling and processing for chemical analyses necessarily excluded larger clay pigeon debris (skeet fragments) containing PAHs from chemical analysis. The presence of significant clay pigeon debris at a parcel represents an on-going source of PAHs contamination both through direct exposure (ingestion) and the potential to contribute to soil contamination following further weathering/disintegration of this material. Therefore, parcels exhibiting skeet fragments, including TCRA parcels with re-exhibiting surface skeet fragments, will be carried forward and included in the FS.

[8] Surface samples for APN 32404640 were collected and analyzed in 2015, with subsurface samples collected and analyzed in 2019. APN 32404643 is listed as a TCRA parcels, but also listed as an RI parcel since an investigation was conducted at APN 32404643 after the TCRA by Eco.

7.3 RECOMMENDATIONS

Results of the RI were used to develop the following recommendations:

1. Preparation of an FS to evaluate remedial alternatives to address unacceptable human health risk resulting from the presence of skeet fragments and/or PAH/metal exceedances in soil.

2. Preparation of a future addendum to this RI summarizing the results from the parcels investigated since 1 November 2019.

8.0 REFERENCES

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Formerly Used Defense Site Property No. J09AZ041201 Contract No. W912PL-13-D-0028 Delivery Order 0001. August.

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TABLES

TABLE 3-1

SUMMARY OF PAHS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE[2]	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE[3]	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE[4]	PYRENE
							µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
1	32404238	3854	E. Devlin Ave.	32404238-SS2001	2	µg/kg	N/A	2.7 J	9.8	N/A	45	270	270	370	220	170	320	52	570	8.7	220	7.8	270	450
				32404238-SS2002	2	µg/kg	N/A	2 J	7	N/A	23	150	170	230	140	100	190	35	320	4.5 J	140	6.9	140	260
				32404238-SS20A3	2	µg/kg	N/A	2.2 J	6.7	N/A	20	150	180	240	150	110	200	37	290	3.5 J	160	7.3	120	240
				32404238-SS20B3	2	µg/kg	N/A	2.5 J	6.7	N/A	19	140 J	190	240	150	110	200	37	270	3.7 J	150	8.2	120	240
				32404238-SS20C3	2	µg/kg	N/A	2.6 J	6.8	N/A	20	150	200	260	160	110	220	38	280	3.4 J	160	8,1	120	260
2	32404239	3854	E. Devlin Ave.	32404239-SS2001	2	µg/kg	N/A	1.67 U	1.67 U	N/A	1.67 U	4.6 J	5.6	7.1	4.8 J	3.2 J	6.4	2.3 J	8.7	1.67 U	5.6	1.67 U	4.2 J	7.3
				32404239-SS2002	2	µg/kg	N/A	1.67 U	1.67 U	N/A	1 J	8.8	11	15	9.4	6.5	13	2.8 J	15	1.67 U	11	1.67 U	6.9	14
				32404239-SS2003	2	µg/kg	N/A	1.67 U	1.67 U	N/A	4 J	4.0 J	4.6 J	5.7	2.7	2.7 J	5.5	1.3 J	7.8	1.67 U	4.3 J	1.67 U	3.7 J	6.5
3	32404528	3855	E. Devlin Ave.	32404528-SS2001	2	µg/kg	N/A	1.67 U	2 J	N/A	6.6	52	50	120	45	110	52	12	91	1.3 J	33	2.1 J	44	80
				32404528-SS2002	2	µg/kg	N/A	1.2 J	3.2 J	N/A	7.3	70	69	150	56	140	77	15	120	1.6 J	45	3.4 J	51	110
				32404528-SS2003	2	µg/kg	N/A	1.7 J	4.9 J	N/A	10	81	79	170	63	160	92	17	140	2.6 J	53	4.5 J	64	130
4	32404529	3861	E. Devlin Ave.	32404529-SS2001	2	µg/kg	N/A	15	63	N/A	330	1,700	1,400	2,300	1,200	640	1,500	290	2,700	58	1,000	45	1,600	2,600
				32404529-SS2002	2	µg/kg	N/A	7	31	N/A	110	690	550	1,300	460	1,200	690	130	1,200	26	410	15	640	1,100
				32404529-SS2003	2	µg/kg	N/A	10	42	N/A	78	710	570	1,300	470	1,200	800	140	1,100	18	440	19	530	1,100
5	32404530	3865	E. Devlin Ave.	32404530-SS2001	2	µg/kg	N/A	13	44	N/A	160	1,100	950	2,000	810	1,400	1,100	220	1,700	30	680	32	940	1,600
				32404530-SS2002	2	µg/kg	N/A	150	360	N/A	460	2,800	2,600	3,300	2,000	1,200	2,800	530	3,300	180	1,900	500	2,000	3,600
				32404530-SS2003	2	µg/kg	N/A	19	76	N/A	370	1,900	1,400	2,300	1,200	760	1,800	320	2,900	73	1,100	45	1,800	2,800
6	32404531	3871	E. Devlin Ave.	32404531-SS2001	2	µg/kg	N/A	180	570	N/A	1,200	5,100	6,500	12,000	4,200	11,000	6,500	1,200	10,000	280	3,200	480	5,100	9,200
				32404531-SS002	2	µg/kg	N/A	170	550	N/A	1,200	6,100	7,600	14,000	5,200	13,000	7,500	1,300	11,000	270	4,100	470	5,200	10,000
				32404531-SS20A3	2	µg/kg	N/A	250	770	N/A	1,500	7,100	8,800	15,000	5,700	14,000	8,700	1,700	12,000	330	4,800	700	5,700	12,000
				32404531-SS20B3	2	µg/kg	N/A	240	790	N/A	1,600	7,300	9,400	16,000	6,100	15,000	9,000	1,600	12,000	350	5,000	680	5,800	12,000
				32404531-SS20C3	2	µg/kg	N/A	240	800	N/A	1,600	7,500	9,400	16,000	6,200	15,000	9,300	2,000	12,000	350	5,100	680	140	12,000
7	32404569A	3875	E. Devlin Ave.	32404569A-SS2001	2	µg/kg	N/A	2,3 J	10	N/A	22	140	130	200	120	95	200	31	320	2.8 J	130	6.5	1,000	270
				32404569A-SS2002	2	µg/kg	N/A	19 J	71	N/A	170	1,100	1,300	1,600	890	740	1,700	240	2,500	26	810	48	89	1,400
				32404569A-SS20A3	2	µg/kg	N/A	2 J	8.1	N/A	16	110	82	150	110	74	150	28	230	3.4 J	110	4.5J	120	200
				32404569A-SS20B3	2	µg/kg	N/A	3 J	15	N/A	21	160	140	220	130	110	230	34	320	3.4 J	120	8.5	100	360
				32404569A-SS20C3	2	µg/kg	N/A	1.3 J	8.8	N/A	16	130	98	180	130	82	180	32	200	4.1 J	140	5.1	700	250
8	32404483	3866	E. Hearne Ave	32404483-SS2001	2	µg/kg	N/A	20	66	N/A	140	1,000	920	1,800	700	1,600	1,100	200	1,400	28	670	46	1,400	1,500
				32404483-SS2002	2	µg/kg	N/A	21	71	N/A	270	1,700	1,500	2,300	1,300	720	1,700	330	2,900	44	1,200	52	1,700	2,600
				32404483-S2S003	2	µg/kg	N/A	18	58	N/A	220	1,500	1,300	2,200	1,100	550	1,500	290	2,200	36	980	47	37	2,300
9	32404482	3870	E. Hearne Ave	32404482-SS2001	2	µg/kg	0.98 J	1.2 J	2.7	0.89 U	5.8	65	90	130	60	40	87	14	79	1.8 J	57	3.1 J	350	99
				32404482-S2S002	2	µg/kg	1.4 J	2.5 J	10	0.89 U	67	330	360	490	260	180	370	52	600	21	210	8.2	190	610
				32404482-SS2003	2	µg/kg	3.4 J	5.2	14	0.89 U	29	290	380	520	270	180	380	58	390	5	220	14	140	490
10	32404567	3876	E. Hearne Ave	32404567-SS2001	2	µg/kg	3 J	4.3 J	11	0.89 U	21	270	440	610	340	210	380	71	300	4.3 J	240	11	34	420
				32404567-SS2002	2	µg/kg	0.96 U	1 J	1.9 J	0.89 U	5.5	43	55	76	31	26	55	8.4	65	1.1 J	29	2.3 J	52	77
				32404567-SS2003	2	µg/kg	1.4 J	2.1 J	4.3 J	0.89 U	7.9	72	92	130	57	43	100	13	100	1.7 J	54	6.1	1,200	130
11	32404566	3880	E. Hearne Ave	32404566-SS2001	2	µg/kg	N/A	22 J	73	N/A	240	1,200	13,000	1,700	950	810	1,600	250	2,800	35	1,000	60	950	2,200
				32404566-SS2002	2	µg/kg	N/A	16 J	64	N/A	170	1,100	1,200	1,600	880	740	1,600	230	2,400	26	940	47	5,700	2,100
				32404566-SS2003	2	µg/kg	N/A	62	300	N/A	1,500	5,000	4,900	6,000	3,300	2,600	5,000	850	11,000	300	3,500	170	840	7,900
12	32404645	3884	E RYAN AVE	APN32404645-SS2001	2	µg/kg	0.96 U	1.1 J	2.7 J	0.89 U	5.6	59.0	76.0	110	49.0	38.0	88.0	13.0	83.0	1.1 J	51.0	1.9 J	39.0	110
				APN32404645-SS2002	2	µg/kg	4.8 U	5.7 J	28.0	4.45 U	120	700	740	1,000	500	370	890	120	1,200	19 J	470	14 J	660	1,300
				APN32404645-SS2003	2	µg/kg	4.8 U	4.7 U	5.8 J	4.45 U	16 J	160	170	250	87.0	90.0	220	30.0	220	5 U	130	4.8 J	110	270
13	32404648	3881	E. Hearne Ave	32404648-SS2001	2	µg/kg	30	51	130	4.45 U	160	1,300	1,500	2,400	870	2,300	1,600	210	1,500	65	920	160	410	2,100
				32404648-SS2002	2	µg/kg	6.8 J	10 J	33	4.45 U	65	620	620	820	390	330	680	100	800	14 J	420	27	600	970
				32404648-SS2003	2	µg/kg	10 J	15 J	57	4.45 U	98	950	990	1,200	630	480	1,100	150	1,700	21 J	630	44	61	1,600
14	32404649	3881	E. Hearne Ave	32404649-SS2001	2	µg/kg	0.96 U	0.99 J	3.8 J	0.89 U	8.9	110	120	160	76	62	120	20	130	1.7 J	73	2.3 J	970	160
				32404649-SS2002	2	µg/kg	5.5 J	8.4 J	41	4.45 U	170	910	930	1,300	640	470	1,100	150	1,600	40	610	21 J	91	1,700
				32404649-SS2003	2	µg/kg	N/A	1.7 J	3.1 J	0.89 U	14	160	170	220	100	82	170	27	190	3.1 J	110	7	91	250
15	32404565	3884	E. Hearne Ave	32404565-SS2001	2	µg/kg	2.2 J	7.7	N/A	22	160	160	110	220	110	110	220	34	340	3.3	140	7.1	130	280
				32404565-SS2002	2	µg/kg	2 J	6.5	N/A	15	120	120	93	180	90	90	180	28	270	2.1 J	110	4.8 J	97	230
				32404565-SS2003	2	µg/kg	6.4 J	27	N/A	58	480	480	420	650	300	300	680	97	960	8.4 J	410	13 J	360	890
16	32404650	3885	E. Hearne Ave	32404650-SS2001	2	µg/kg	N/A	23 J	88	N/A	210	1,600	1,300	2,700	1,100	3,200	1,600	310	2,600	42	1,300	65	1,100	2,300
				32404650-SS2002	2	µg/kg	N/A	110	490	N/A	1,100	5,100	5,800	7,100	3,800	2,300	6,200	1,100	8,900	270	4,300	260	4,300	8,200
				32404650-SS2003	2	µg/kg	N/A	28	100	N/A	220	1,400	1,300	2,500	1,000	2,900	1,600	280	2,600	41	1,100	74	1,100	2,200

TABLE 3-1

SUMMARY OF PAHS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE[2]	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE[3]	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE[4]	PYRENE
							µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
17	32404651	3889	E. Hearne Ave	32404651-SS2001	2	µg/kg	N/A	2.7 J	11	N/A	28	180	150	240	140	120	250	38	380	4 J	170	8.5	150	330
				32404651-SS2002	2	µg/kg	N/A	2.1 J	8.2	N/A	21	150	92	250	99	290	160	27	270	3.6 J	110	5.7	120	220
				32404651-SS2003	2	µg/kg	N/A	2.7 J	9.4	N/A	18	130	120	180	110	90	190	28	260	4 J	120	7.7	100	220
18	32404652	3895	E. Hearne Ave	32404652-SS2001	2	µg/kg	N/A	2 J	7.5	N/A	18	120	110	170	99	85	170	26	250	2.9 J	110	5.3	100	220
				32404652-SS2002	2	µg/kg	N/A	2.3 J	7.1	N/A	14	130	160	240	160	100	190	41	190	3 J	210	6.3	100	230
				32404652-SS2003	2	µg/kg	N/A	2.4 J	8.2	N/A	31	170	150	230	140	110	230	34	380	4.2 J	140	5.9	170	290
19	32436016	3962	E. Lass Ave	32436016-SS2001	2	µg/kg	N/A	5.3	22	N/A	160	600	610	1100	490	1,100	690	120	1,500	24	340	18	780	1,100
				32436016-SS2002	2	µg/kg	N/A	1.6 J	4.5 J	N/A	24	150	120	280	100	280	150	23	300	2.3 J	73	4.5 J	150	240
				32436016-SS2003	2	µg/kg	N/A	1.3 J	3.6 J	N/A	13	81	73	180	63	170	120	15	180	1.6 J	48	3.4 J	86	160
20	32436018	3970	E. Lass Ave	32436018-SS2001	2	µg/kg	N/A	5.1	13	N/A	43	250	240	470	180	460	280	46	480	6.2	160	18	250	420
				32436018-SS2002	2	µg/kg	N/A	3 J	8.4	N/A	35	200	190	370	140	360	220	35	420	4.4 J	120	9.2	210	340
				32436018-SS2003	2	µg/kg	N/A	3.3 J	8.1	N/A	21	130	140	260	98	250	150	25	250	3.9 J	84	10	120	220
21	32405188	3904	E. Lum Ave	32405188-SS2001	2	µg/kg	N/A	4.5 J	22	N/A	74	470	460	690	380	200	420	98	860	12	280	14	360	700
				32405188-SS2002	2	µg/kg	N/A	5.5	21	N/A	76	370	340	520	250	150	330	81	700	13	190	15	350	540
				32405188-SS2003	2	µg/kg	N/A	5.3	20	N/A	57	350	350	510	260	150	320	81	630	8.1	190	13	280	530
22	32405298	3905	E. Lum Ave	32405298-SS2001	2	µg/kg	N/A	1.8 J	2.8 J	N/A	5.8	48	51	120	39	83	68	9.4	110	1.3 J	36	5.1	37	79
				32405298-S2S002	2	µg/kg	N/A	2.8 J	7.8	N/A	10	80	85	200	64	140	110	15	130	3.2 J	53	8.1	63	110
				32405298-SS20A3	2	µg/kg	N/A	1.4 J	3.1 J	N/A	9.3	71	66	160	52	120	89	14	120	1.9 J	58	4 J	58	100
				32405298-SS20B3	2	µg/kg	N/A	1.4 J	3.3 J	N/A	9.1	73	66	180	60	130	91	17	140	2.2 J	59	3.7 J	59	100
				32405298-SS20C3	2	µg/kg	N/A	1.2 J	3.3 J	N/A	9	70	67	160	43	120	87	15	160	1.8 J	62	3.5 J	57	120
23	32405187	3910	E. Lum Ave	32405187-SS2001	2	µg/kg	N/A	45	190	N/A	400	2,400	2,200	3,500	1,700	1,200	2,100	540	3,800	76	1,500	130	1,700	3,300
				32405187-SS2002	2	µg/kg	N/A	23	80	N/A	220	1,400	1,300	2,000	1,000	640	1,300	320	2,700	32	850	68	1,000	2,000
				32405187-SS2003	2	µg/kg	N/A	35	120	N/A	320	1,900	1,600	2,700	1,200	720	1,600	410	2,900	52	1,100	99	1,400	2,800
24	32405186	3914	E. Lum Ave	32405186-SS2001	2	µg/kg	N/A	67	230	N/A	570	3,700	3,100	6,500	2,300	1,400	3,200	780	6,400	97	2,400	190	2,500	5,300
				32405186-SS2002	2	µg/kg	N/A	84	280	N/A	750	4,800	5,100	7,200	2,900	1,900	4,200	960	9,100	130	2,900	230	3,100	6,900
				32405186-SS2003	2	µg/kg	N/A	320	2,000	N/A	12,000	48,000	44,000	76,000	30,000	74,000	34,000	8,500	98,000	1,900	23,000	1,100	47,000	67,000
25	32405300A (E)	3915	E. Lum Ave	32405300A (E)-SS2001	2	µg/kg	N/A	19	77	N/A	530	2,100	1,500	2,300	980	2,500	1,600	320	4,000	82	1,000	41	1,800	3,200
				32405300A (E)-SS2002	2	µg/kg	N/A	21	62	N/A	150	1,100	1,000	2,200	730	1,400	970	240	1,300	31	590	49	710	1,100
				32405300A (E)-SS2003	2	µg/kg	N/A	17	58	N/A	270	1,200	1,100	1,900	950	1,600	1,100	290	2,400	41	560	50	1,000	1,800
	32405300A (W)	3915	E. Lum Ave	32405300A (W)-SS2001	2	µg/kg	N/A	15	54	N/A	68	850	910	1,900	610	1,200	820	190	1,100	16	390	43	380	970
				32405300A (W)-SS2002	2	µg/kg	N/A	6.5	15	N/A	34	210	210	450	160	320	230	49	480	6.4	180	22	170	280
				32405300A (W)-SS2003	2	µg/kg	N/A	5.6	14	N/A	31	230	230	490	160	250	260	49	500	5.1	180	17	170	390
26	32405301	3919	E. Lum Ave	32405301-SS2001	2	µg/kg	N/A	8.7	27	N/A	84	440	470	1000	340	480	500	92	790	15	290	22	390	580
				32405301-SS2002	2	µg/kg	N/A	15	60	N/A	130	890	810	1,700	550	860	810	160	1600 J	19	320	34	550	1,500
				32405301-SS2003	2	µg/kg	N/A	34	82	N/A	130	980	980	1,900	590	1,100	1,000	180	1,700	24	420	93	580	1,400
27	32405185	3920	E. Lum Ave	32405185-SS2001	2	µg/kg	N/A	19	72	N/A	280	1,500	1,200	1,700	2,200	420	1,300	430	2,500	40	1,400	52	1,700	2,300
				32405185-SS2002	2	µg/kg	N/A	21	79	N/A	250	1,700	1,400	3,000	1,100	3,000	1,500	350	2,600	42	1,100	61	1,200	2,300
				32405185-SS003	2	µg/kg	N/A	22	78	N/A	270	1,700	1,500	3,200	1,100	3,100	1,300	360	2,700	38	1,000	62	1,300	2,400
28	32405184	3924	E. Lum Ave	32405184-SS2001	2	µg/kg	N/A	37	180	N/A	530	3,000	3,100	6,200	2,200	1,400	2,800	680	5,400	89	2,200	100	2,100	4,500
				32405184-SS2002	2	µg/kg	N/A	30	130	N/A	460	2,400	2,000	4,100	1,400	4,000	1,900	440	4,300	68	1,300	83	1,800	3,400
				32405184-SS2003	2	µg/kg	N/A	29	120	N/A	310	1,900	1,600	3,400	1,100	3,300	1,700	370	2,900	64	1,100	75	1,400	2,700
29	32405303A (E)	3929	E. Lum Ave	32405303A-SS2001	2	µg/kg	N/A	45	140 J	N/A	420 J	2,800 J	2,400 J	4,400 J	2,100	6,000 J	2,600 J	610 J	4,800 J	78 J	1,700 J	150	2,200 J	4,100 J
				32405303A-SS2002	2	µg/kg	N/A	91	300 J	N/A	850 J	4,300 J	4,300 J	7,300 J	3,100	9,900 J	4,800 J	1,200 J	7,800 J	160 J	2,800 J	310	3,300 J	6,800 J
				32405303A-SS2003	2	µg/kg	N/A	54	200 J	N/A	550 J	3,100 J	2,300 J	3,900 J	2,000 J	5,300 J	3000 J	580 J	4,100 J	100 J	1,500 J	160	2,400 J	5,700
	32405303A (W)	3929	E. Lum Ave	32405303A-SS2001	2	µg/kg	NA	67.0	270 J	NA	700 J	4,500 J	4,200 J	7,700 J	2,900 J	10,000 J	4,700 J	820 J	8,100 J	160 J	2,900 J	170	3,100 J	7,000 J
				32405303A-SS2002	2	µg/kg	NA	59.0	190 J	NA	420 J	3,100 J	2,600 J	4,600 J	2,300 J	6,200 J	3,000 J	660 J	4,200 J	75 J	1,800 J	170	2,000 J	4,100 J
				32405303A-SS2003	2	µg/kg	NA	50.0	170 J	NA	470 J	3,200 J	3,000 J	5,300 J	2,200 J	7,200 J	3,100 J	630 J	5,100 J	77 J	2,000 J	150	2,200 J	4,700 J
30	32405183	3930	E. Lum Ave	32405183-SS001	2	µg/kg	N/A	10	42	N/A	170	900	820	1100	540	310	770	170	1,500	25	420	25	730	1,300
				32405183-SS002	2	µg/kg	N/A	6.3	21	N/A	53	400	410	560	270	150	360	84	680	7.6	200	20	300	590
				32405183-SS0A3	2	µg/kg	N/A	6.8	24	N/A	77	420	420	730	260	710	370	84	770	10	200	29	350	650
				32405183-SS0B3	2	µg/kg	N/A	6.6	23	N/A	70	390	400	560	260	150	340	80	720	9.9	180	22	320	580
				32405183-SS0C3	2	µg/kg	N/A	5.7	21	N/A	63	350	350	490	220	140	300	71	660	8.6	160	19	290	520

TABLE 3-1

SUMMARY OF PAHS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE[2]	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE[3]	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE[4]	PYRENE
							µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
31	32405305A (E)	3939	E. Lum Ave	32405305A (E) -SS001	2	µg/kg	N/A	25	77	N/A	160	1,200	1,100	1,300	850	700	1,400	230	1,900	28	920	63	800	1,800
				32405305A (E)-SS002	2	µg/kg	N/A	29	87	N/A	170	1,100	1,000	1,200	790	700	1,300	210	1,900	33	830	68	850	1,800
				32405305A (E)-SS0A3	2	µg/kg	N/A	54	200	N/A	800	3,200	2,900	3,900	2,200	1,300	3,100	560	6,500	190	2,100	160	3,300	5,300
				32405305A (E)-SS0B3	2	µg/kg	N/A	61	230	N/A	880	3,800	3,400	4,500	2,000	1,600	3,700	530	7,800	220	2,500	180	3,800	6,200
				32405305A (E)-SS0C3	2	µg/kg	N/A	55	200	N/A	690	2,900	2,700	4,600	2,200	6,300	3,000	570	6,000	180	2,000	170	3,100	4,900
	32405305A (W)	3939	E. Lum Ave	32405305A (W)-SS001	2	µg/kg	N/A	77	300	N/A	360	2,800	2,800	3,300	1,900	1,300	3,000	520	4,100	120	1,800	200	1,700	4,100
				32405305A (W)-SS002	2	µg/kg	N/A	9.9	46	N/A	130	1,100	1,000	1,300	800	660	1,200	220	1,700	17	800	27	690	1,600
				32405305A (W)-SS003	2	µg/kg	N/A	32	190	N/A	840	3,700	3,200	4,300	2,200	1,500	3,300	590	7,400	160	2,300	74	3,200	5,900
32	32404647A (E)	3880	E. Ryan Ave	32404647A (E)-SS001	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	0.83 U	4.9 J	5.3	8.8	4.8 J	3.1 J	6.9	1.1 J	7.2	1 U	4 J	0.89 U	3.3 J	5.1
				32404647A (E)-SS002	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	0.83 U	4.1 J	4.6 J	7.2	3.7 J	2.5 J	5.3	0.92 U	4.8 J	1 U	3.3 J	0.89 U	2.2 J	6.1
				32404647A (E)-SS003	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	0.83 U	6.5	7.1	10	5.6	3.8 J	9.2	1 J	8.9	1 U	4.8 J	0.89 U	4 J	11
	32404647A (W)	3880	E. Ryan Ave	32404647A (W)-SS001	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	0.83 U	1.3 J	0.93 U	4 J	1.34 U	2.8 J	2.6 J	0.92 U	2.3 J	1 U	1 J	0.89 U	1.1 U	2 J
				32404647A (W)-SS002	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	0.83 U	3.1 J	2.6 J	7.5 J	2.6 J	5.2 J	5.4	0.92 U	5.3	1 U	1.9 J	0.89 U	2.3 J	5.2
				32404647A (W)-SS003	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	0.83 U	2.5 J	2.1 J	3.5 J	2 J	1.9 J	4 J	0.92 U	4.3 J	1 U	1.6 J	0.89 U	2.1 J	4.2 J
33	32405645	3884	E. Ryan Ave	32405645-SS001	2	µg/kg	0.96 U	1.1 J	2.7 J	0.89 U	5.6	59	76	110	49	38	88	13	83	1.1 J	51	1.9 J	39	110
				32405645-SS002	2	µg/kg	4.8 U	5.7 J	28	4.45 U	120	700	740	1000	500	370	890	120	1,200	19 J	470	14 J	660	1,300
				32405645-SS003	2	µg/kg	4.8 U	4.7 U	5.8 J	4.45 U	16 J	160	170	250	87	90	220	30	220	5 U	130	4.8 J	110	270
34	32405198	3887	E. Ryan Ave	32405198-SS001	2	µg/kg	N/A	2.4 J	6.5	N/A	16	150	140	260	120	74	200	33	270	2.9 J	100	6.7	120	260
				32405198-SS002	2	µg/kg	N/A	7.2	21	N/A	28	270	260	430	200	120	340	54	430	8.5	170	20	190	460
				32405198-SS003	2	µg/kg	N/A	2.5 J	7.1	N/A	13	120	130	220	110	59	160	28	200	2.8 J	90	6.7	90	200
35	32404644	3890	E. Ryan Ave	32404644-SS001	2	µg/kg	17 J	27	85	4.45 U	200	1,500	1,900	2,300	1,200	890	2,100	290	2,200	33	1,200	74	1,100	2,700
				32404644-SS002	2	µg/kg	18 J	32	88	4.45 U	140	1,000	1,400	1,600	810	620	1,500	200	1,900	35	770	84	770	1,900
				32404644-SS003	2	µg/kg	12 J	19 J	57	4.45 U	110	1,000	1,100	1,400	720	530	1,100	170	1,200	20 J	660	48	610	1,600
36	32405199	3895	E. Ryan Ave	32405199-SS001	2	µg/kg	N/A	73	230	N/A	450	3,100	2,600	3,800	2,100	1,300	3,000	560	4,100	110	2,100	190	2,200	4,300
				32405199-SS002	2	µg/kg	N/A	160	630	N/A	1,300	6,800	7,200	10,000	5,300	3,400	7,800	1,300	9,900	330	4,200	340	5,100	11,000
				32405199-SS003	2	µg/kg	N/A	85	290	N/A	500	2,700	2,600	4,000	2,100	1,400	3,200	640	4,300	130	2,200	210	2,500	4,500
37	32404643	3896	E. Ryan Ave	32404643-SS001	2	µg/kg	2.8 J	4.1 J	13	0.89 U	23	180	230	290	150	100	250	35	260	5.2	140	12 J	140	330
				32404643-SS002	2	µg/kg	2.2 J	3.4 J	9	0.89 U	21	170	220	290	150	100	230	36	240	3.8 J	140	10	130	290
				32404643-SS003	2	µg/kg	3.1 J	4.8 J	12	0.89 U	27	200	240	310	160	110	270	38	290	4.7 J	150	14	160	350
38	32404200	3899	E. Ryan Ave	32404200-SS001	2	µg/kg	N/A	140	480	N/A	780	6,100	6,900	9,500	4,900	3,100	6,900	1,100	8,000	220	4,300	480	3,200	8,900
				32404200-SS002	2	µg/kg	N/A	37	140	N/A	250	2,500	2,200	3,100	1,900	1,100	2,600	490	2,700	56	1,900	96	1,300	2,900
				32404200-SS003	2	µg/kg	N/A	26	75	N/A	200	1,600	1,200	2,100	1,000	500	1,600	290	2,300	33	1,000	65	1,200	2,400
39	32404642	3900	E. Ryan Ave	32404642-SS001	2	µg/kg	12	14	52	0.89 J	86	640	690	1,600 J	480	1,300 J	890	140	950	20	400	44	440	990
				32404642-SS002	2	µg/kg	15 J	13 J	53	4.45 U	170	970	940	2,300 J	700	1,700 J	1,300	190	1,600	31	600	42	840	1,500
				32404642-SS003	2	µg/kg	13 J	15 J	61	4.45 U	170	910	950	2,200 J	670	1,600 J	1,300	180	1,900	38	600	43	770	1,400
40	32404641	3904	E. Ryan Ave	32404641-SS001	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	1.7 J	11	12	24 J	9.4	22 J	15	2.5 J	20	1 U	7.1	0.89 U	8.3	18
				32404641-SS002	2	µg/kg	0.96 U	0.94 U	0.97 U	0.89 U	2.8 J	19	22	32	17	13	25	4.2 J	35	1 U	13	0.89 U	15	34
				32404641-SS003	2	µg/kg	0.96 U	0.94 U	1.6 J	0.89 U	3.6 J	30	35	70 J	27	66 J	40	7.1	90	1 U	21	1.4 J	21	50
41	32405200	3899	E RYAN AVE	32405200-SS2001	2	µg/kg	NA	140	480	NA	780	6,100	6,900	9,500	4,900	3,100	6,900	1,100	8,000	220	4,300	480	3,200	8,900
				32405200-SS2002	2	µg/kg	NA	37.0	140	NA	250	2,500	2,200	3,100	1,900	1,100	2,600	490	2,700	56.0	1,900	96.0	1,300	2,900
				32405200-SS2003	2	µg/kg	NA	26.0	75.0	NA	200	1,600	1,200	2,100	1,000	510	1,600	290	2,300	33.0	1,000	65.0	1,200	2,400
42	32405201	3905	E. Ryan Ave	32405201-SS001	2	µg/kg	N/A	150	510	N/A	1,200	5,300	5,400	8,000	3,900	2,400	6,000	1,000	8,800	280	3,200	480	4,800	8,900
				32405201-SS002	2	µg/kg	N/A	62	190	N/A	420	2,400	2,300	3,200	1,700	1,100	2,500	470	3,300	92	1,600	200	1,900	3,300
				32405201-SS003	2	µg/kg	N/A	57	190	N/A	570	2,800	2,700	4,200	2,200	1,300	3,100	640	4,400	98	2,300	160	2,400	4,400
43	32405202	3905	E. Ryan Ave	32405202-SS001	2	µg/kg	N/A	7.5	27	N/A	89	670	550	930	470	300	580	130	1,100	14	370	23	520	950
				32405202-SS002	2	µg/kg	N/A	64	270	N/A	290	4,100	6,900	9,900	6,200	2,600	5,000	1,000	4,100	97	5,000	320	1,300	4,800
				32405202-SS003	2	µg/kg	N/A	19	66	N/A	180	1,200	940	1,500	810	390	1,200	220	1,900	34	750	54	1,000	1,800
44	32405203	3915	E. Ryan Ave	32405203-SS001	2	µg/kg	N/A	41	190	N/A	560	3,000	2,600	3,700	1,900	1,100	3,200	480	4,400	120	2,000	120	2,300	4,200
				32405203-SS002	2	µg/kg	N/A	12	59	N/A	120	1,700	2,100	3,100	1,800	830	1,700	440	1,700	24	1,600	31	560	1,900
				32405203-SS0A3	2	µg/kg	N/A	13	73	N/A	110	1,100	1,100	1,400	740	390	1,100	200	1,500	17	670	17	600	1,600
				32405203-SS0B3	2	µg/kg	N/A	11	71	N/A	110	1,100	1,100	1,300	720	350	1,200	200	1,600	17	650	16	620	1,700
				32405203-SS0C3	2	µg/kg	N/A	12	73	N/A	120	1,200	1,200	1,200	730	320	1,200	210	1,600	18	710	17	630	1,800
45	32439010	3948	E. Snavely Ave.	32439010-SS001	2	µg/kg	N/A	110	420	N/A	960	5,800	6,100	12,000	4,600	11,000	6,200	1,600	8,300	180	4,600	270	3,900	8,300
				32439010-SS002	2	µg/kg	N/A	320	1,100	N/A	2,200	14,000	14,000	21,000	10,000	6,300	15,000	3,000	20,000	510	10,000	830	10,000	20,000
				32439010-SS003	2	µg/kg	N/A	240	760	N/A	1,600	11,000	11,000	21,000	2,200	19,000	11,000	2,200	15,000	350	7,800	640	7,300	15,000

TABLE 3-1

SUMMARY OF PAHS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE[2]	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE[3]	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE[4]	PYRENE
							µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
46	32439030	3959	E. Snavely Ave.	32439030-SS001	2	µg/kg	N/A	27 J	110	N/A	300	2,100	2,000	3,800	1,400	3,700	2,400	320	3,800	42 J	1,100	96 J	1,900	3,500
				32439010-SS002	2	µg/kg	N/A	27 J	99 J	N/A	340	1,900	2,100	3,900	1,500	3,800	2,200	320	3,700	43 J	1,000	82 J	1,800	3,200
				32439010-SS003	2	µg/kg	N/A	59 J	180	N/A	610	3,200	3,500	6,800	2,500	6,600	4,600	610	7,300	79 J	1,900	180	3,500	6,100
47	32439029	3963	E. Snavely Ave.	32439029-SS001	2	µg/kg	N/A	57 J	220	N/A	700	3,600	4,300	9,000	3,100	8,700	5,200	740	8,100	110	2,200	190	3,900	6,900
				32439029-SS002	2	µg/kg	N/A	110	460	N/A	1,400	6,300	7,200	14,000	4,900	14,000	8,800	1,200	14,000	230	3,800	370	6,800	12,000
				32439029-SS0A3	2	µg/kg	N/A	210	630	N/A	1,500	6,800	8,500	18,000	5,500	18,000	10,000	1,300	15,000	300	4,100	810	7,500	13,000
				32439029-SS0B3	2	µg/kg	N/A	230	710	N/A	1,600	7,700	9,400	19,000	6,100	19,000	11,000	1,600	17,000	330	4,500	910	8,400	14,000
				32439029-SS0C3	2	µg/kg	N/A	190	650 J	N/A	1,500	7,100	8,300	17,000	5,400	17,000	10,000	1,500	15,000	300	4,200	780	7,500	13,000
48	32439028	3967	E. Snavely Ave.	32439028-SS001	2	µg/kg	N/A	22	62	N/A	220	1,300	1,300	2,400	990	2,300	1,500	270	2,100	25	940	76	1,100	2,000
				32439028-SS002	2	µg/kg	N/A	31	78	N/A	290	1,700	1,500	2,700	1,100	2,700	1,800	310	2,800	31	1,200	110	1,400	2,600
				32439028-SS003	2	µg/kg	N/A	59	180	N/A	330	2,400	2,700	4,400	2,100	4,300	3,000	570	3,800	66	2,100	210	1,600	3,400
49	32439027	3971	E. Snavely Ave.	32439027-SS001	2	µg/kg	N/A	3.1 J	9.6	N/A	37	220	200	400	150	380	230	43	390	5.5	140	8.9	200	330
				32439027-SS002	2	µg/kg	N/A	2.3 J	6.5	N/A	23	140	130	260	100	260	160	30	270	3.5 J	93	7.5	140	230
				32439027-SS0A3	2	µg/kg	N/A	2.6 J	6.8	N/A	25	160	150	310	120	300	190	32	310	3.2 J	110	7.7	160	260
				32439027-SS0B3	2	µg/kg	N/A	2.4 J	6.5	N/A	24	150	140	280	110	280	170	30	300	3.7 J	100	7.3	150	260
				32439027-SS0C3	2	µg/kg	N/A	2.3 J	6.5	N/A	26	160	150	300	120	290	180	32	310	3.2 J	110	7.1	150	260
50	32439012	3942	E. Snavely Cir	32439012-SS001	2	µg/kg	N/A	5.5	18	N/A	39	430	390	880	310	790	400	90	540	6.7	280	13	260	590
				32439012-SS002	2	µg/kg	N/A	3.1 J	10	N/A	21	230	250	570	200	510	280	59	330	3.6 J	190	7.6	140	350
				32439012-SS003	2	µg/kg	N/A	9.9	31	N/A	84	820	710	1,600	580	1,500	720	170	1,100	13	570	26	520	1,100
51	32439011	3944	E. Snavely Cir	32439011-SS001	2	µg/kg	N/A	12	42	N/A	65	660	650	1,400	510	1,200	660	150	840	18	490	30	400	920
				32439011-SS002	2	µg/kg	N/A	3.9 J	14	N/A	33	290	310	710	250	630	370	72	480	5.4	240	10	220	460
				32439011-SS003	2	µg/kg	N/A	6.5	21	N/A	77	620	560	1,200	440	1,100	550	130	910	12	430	18	430	830
52	32439009	3954	E. Snavely Way	32439009-SS001	2	µg/kg	N/A	34	98	N/A	280	2,000	1,800	3,000	1,400	2,700	2,000	460	2,600	49	1,500	92	1,500	2,800
				32439009-SS002	2	µg/kg	N/A	37	130	N/A	550	3,100	2,200	4,800	2,700	1,300	3,100	820	4,400	110	2,400	110	2,600	4,000
				32439009-SS0A3	2	µg/kg	N/A	26	74	N/A	150	1,200	1,100	1,800	900	560	1,300	290	1,600	34	920	74	870	1,700
				32439009-SS0B3	2	µg/kg	N/A	30	81	N/A	170	1,400	1,200	2,000	1,000	580	1,400	320	1,800	38	1,000	87	920	1,900
				32439009-SS0C3	2	µg/kg	N/A	28	79	N/A	160	1,300	1,200	1,900	950	580	1,300	300	1,700	38	990	81	930	1,800
53	32439008	3956	E. Snavely Way	32439008-SS001	2	µg/kg	N/A	64	200	N/A	430	3,000	2,100	4,200	1,500	3,800	3,000	990	3,200	100	2,400	190	2,000	3,300
				32439008-SS002	2	µg/kg	N/A	47	200	N/A	840	2,700	2,200	4,800	1,600	4,300	3,300	1,100	4,900	210	2,600	120	3,100	4,200
				32439008-SS003	2	µg/kg	N/A	21	82	N/A	260	1,800	1,800	2,800	1,500	790	1,700	420	2,400	59	1,400	56	1,300	2,400
54	32405282A*	3920	E. Thompson Ave.	32405282A*-SS001	2	µg/kg	N/A	18 J	57 J	N/A	130 J	910 J	640	500	620	1,100 J	1,200	160 J	1,100 J	23 J	720 J	54 J	560	1,600 J
				32405282A*-SS002	2	µg/kg	N/A	14 J	40 J	N/A	67 J	620 J	270	690	260	530 J	830	160 J	450 J	11 J	450 J	40 J	200 J	1,000 J
				32405282A*-SS003	2	µg/kg	N/A	23 J	76 J	N/A	170 J	1,000 J	570	1,300	340	970 J	1,400	300 J	980 J	34 J	880 J	66 J	530	1,900 J
55	32405280*	3930	E. Thompson Ave.	32405208*-SS001	2	µg/kg	N/A	34 J	120 J	N/A	230 J	2,200 J	2,100	4,800	1,300	3,700 J	2,700	440 J	2,800 J	35 J	1,600 J	98 J	1,300	2,100 J
				32405208*-SS002	2	µg/kg	N/A	59 J	210 J	N/A	290 J	2,900 J	3,200	7,000	2,500	5,300 J	3,700	480 J	4,700 J	53 J	2,000 J	160 J	2,100	5,700 J
				32405208*-SS003	2	µg/kg	N/A	50 J	160 J	N/A	570 J	3,400 J	2,000	5,900	1,500	4,500 J	3,800	520 J	4,300 J	98 J	2,100 J	140 J	2,700	5,500 J
56	32405279A (E)	3940	E. Thompson Ave.	3240527A (E)-SS001	2	µg/kg	N/A	21	98	N/A	160	1,400	1,100	2,300	850	3,100	1,800	240	2,100	28	1,100	66	850	2,200
				3240527A (E)-SS002	2	µg/kg	N/A	13	45	N/A	120	900	720	1100	630	570	1,000	180	1,500	18	650	43	670	1,400
				3240527A (E)-SS003	2	µg/kg	N/A	14	59	N/A	240	1,200	830	1,900	760	2,500	1,300	210	2,200	39	880	47	1,100	1,800
	32405279A (W)	3940	E. Thompson Ave.	32405279A(E)-SS001	2	µg/kg	N/A	14	50	N/A	150	990	720	1,200	680	600	1,100	200	1,600	26	720	43	780	1,500
				32405279A (E)-SS002	2	µg/kg	N/A	62	200	N/A	390	3,100	2,300	4,300	2,200	5,800	3,200	630	4,200	80	1,700	200	2,100	3,900
				32405279A (E)-SS003	2	µg/kg	N/A	19	58	N/A	130	1,100	740	1,800	700	2,400	1,300	210	1,700	28	850	60	820	1,600
57	32405277*	3944	E. Thompson Ave.	32405277*-SS001	2	µg/kg	N/A	18	68 J	N/A	200 J	1,400 J	960 J	2,100 J	850 J	2,800 J	1,600 J	250 J	2,200 J	37 J	1,100 J	47	1,100 J	2,100 J
				32405277*-SS002	2	µg/kg	N/A	22	82 J	N/A	280 J	1,700 J	1,100 J	2,200 J	1,000 J	750 J	1,900 J	290 J	2,700 J	53 J	1,300 J	58	1,400 J	2,400 J
				32405277*-SS003	2	µg/kg	N/A	17	68 J	N/A	210 J	1,500 J	1,400 J	2,400 J	1,300 J	3,200 J	1,800 J	360 J	2,500 J	34 J	1,300 J	47	1,200 J	2,300 J

Abbreviations and Notes:

µg/kg- microgram per kilogram
APN- Assessor's Parcel Number
(E) east section of subdivided parcel
ft - feet
J- estimated value
N/A- not analyzed
PAH- polycyclic aromatic hydrocarbons
U- not detected above the limit of detection
(W) west section of subdivided parcel

TABLE 3-2
SUMMARY OF METALS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY (Sb)	ALUMINUM (Al)	COPPER (Cu)	IRON (Fe)	LEAD$^{(Pb)}$	MANGANESE (Mn)	ZINC (Zn)
1	32404238	3854	E. Devlin Ave	MRS03-APN32404238-SS2001	2	mg/kg	2.7	N/A	6.3	N/A	5.9	N/A	26.9
				MRS03-APN32404565-SS2002	2	mg/kg	2.9	N/A	6.5	N/A	6	N/A	27.4
				MRS03-APN32404565-SS20A3	2	mg/kg	3	N/A	6.5	N/A	7.8	N/A	27.8
				MRS03-APN32404565-SS20B3	2	mg/kg	2.8	N/A	6.5	N/A	7.1	N/A	27.7
				MRS03-APN32404565-SS20C3	2	mg/kg	2.8	N/A	6.7	N/A	6.6	N/A	28.2
2	32404239	3854	E. Devlin Ave	MRS03-APN32404239-SS2001	2	mg/kg	3.5	N/A	6.5	N/A	5.7	N/A	27.4
				MRS03-APN32404239-SS2002	2	mg/kg	3.6	N/A	6.5	N/A	5.8	N/A	28.4
				MRS03-APN32404239-SS2003	2	mg/kg	2.9	N/A	6.2	N/A	5.7	N/A	27.6
3	32404528	3855	E. Devlin Ave	MRS03-APN32404528-SS2001	2	mg/kg	3.1	N/A	9.9	N/A	8.9	N/A	40.5
				MRS03-APN32404528-SS2002	2	mg/kg	3	N/A	9.8	N/A	8.8	N/A	38.8
				MRS03-APN32404528-SS2003	2	mg/kg	2.7	N/A	9.1	N/A	8.3	N/A	36.3
4	32404529	3861	E. Devlin Ave	MRS03-APN32404529-SS2001	2	mg/kg	1.8	N/A	10.7	N/A	9.3	N/A	40.4
				MRS03-APN32404529-SS2002	2	mg/kg	2.9	N/A	11.5	N/A	10.3	N/A	45
				MRS03-APN32404529-SS2003	2	mg/kg	3	N/A	11.8	N/A	10.6	N/A	44.4
5	32404530	3865	E. Devlin Ave	MRS03-APN32404530-SS2001	2	mg/kg	3.7	N/A	10.4	N/A	10.9	N/A	41.3
				MRS03-APN32404530-SS2002	2	mg/kg	3.4	N/A	10.5	N/A	12.3	N/A	43.2
				MRS03-APN32404530-SS2003	2	mg/kg	3.1	N/A	10.9	N/A	11.7	N/A	44.7
6	32404531	3871	E. Devlin Ave	MRS03-APN32404531-SS2001	2	mg/kg	4.1	N/A	9.8	N/A	14.1	N/A	53.8
				MRS03-APN32404531-SS2002	2	mg/kg	5.1	N/A	10.1	N/A	14.8	N/A	64.8
				MRS03-APN32404531-SS20A3	2	mg/kg	1.5	N/A	10.2	N/A	14	N/A	45.8
				MRS03-APN32404531-SS20B3	2	mg/kg	1.5	N/A	10	N/A	14	N/A	56
				MRS03-APN32404531-SS20C3	2	mg/kg	1.7	N/A	10.6	N/A	15.3	N/A	47.9
7	32404569A	3875	E. Devlin Ave	MRS03-APN32404569A-SS2001	2	mg/kg	1 J	N/A	9.3	N/A	8.3	N/A	38.8
				MRS03-APN32404569A-SS2002	2	mg/kg	1.8 J	N/A	9.1	N/A	11.4	N/A	38.5
				MRS03-APN32404569A-SS20A3	2	mg/kg	2 U	N/A	8.3	N/A	7.6	N/A	35.4
				MRS03-APN32404569A-SS20B3	2	mg/kg	2 U	N/A	8.8	N/A	7.8	N/A	36.4
				MRS03-APN32404569A-SS20C3	2	mg/kg	2 U	N/A	8.8	N/A	7.6	N/A	35.4
8	32404483	3866	E. Hearne Ave	MRS03-APN32404483-SS2001	2	mg/kg	1.3	N/A	9.6	N/A	9.7	N/A	40.3
				MRS03-APN32404483-SS2002	2	mg/kg	5.7	N/A	11.3	N/A	10.6	N/A	46.6
				MRS03-APN32404483-SS2003	2	mg/kg	4.9	N/A	10.6	N/A	10	N/A	41.9
9	32404482	3870	E. Hearne Ave	MRS03-APN32404482-SS2001	2	mg/kg	0.95	12600	14.3	N/A	9.8	444	45.5
				MRS03-APN32404482-SS2002	2	mg/kg	0.7	12600	14.3	N/A	9.7	446	46.4
				MRS03-APN32404482-SS2003	2	mg/kg	1	13000	14.5	N/A	10.7	458	47.6

TABLE 3-2
SUMMARY OF METALS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY (Sb)	ALUMINUM (Al)	COPPER (Cu)	IRON (Fe)	LEAD(Pb)	MANGANESE (Mn)	ZINC (Zn)
10	32404567	3876	E. Hearne Ave	MRS03-APN32404567-SS2001	2	mg/kg	0.72	11400	13.1	N/A	9.1	428	43.4
				MRS03-APN32404567-SS2002	2	mg/kg	0.84	13600	15.1	N/A	9.9	496	49
				MRS03-APN32404567-SS2003	2	mg/kg	0.92	14900	15.6	N/A	10.3	510	51.7
11	32404566	3880	E. Hearne Ave	MRS03-APN32404566-SS2001	2	mg/kg	2 U	N/A	8.4	N/A	9.5	N/A	34.4
				MRS03-APN32404566-SS2002	2	mg/kg	2 U	N/A	10.7	N/A	10.6	N/A	44.5
				MRS03-APN32404566-SS2003	2	mg/kg	1.5 J	N/A	7.8	N/A	9.5	N/A	31.7
12	32404645	3884	E RYAN AVE	MRS03-APN32404645-SS2001	2	mg/kg	1.1	13800	15.5	NA	10.1	NA	46.7
				MRS03-APN32404645-SS2002	2	mg/kg	1.1	13000	14.8	NA	10	NA	45.4
				MRS03-APN32404645-SS2003	2	mg/kg	1.1	13100	14.8	NA	10	394	45.5
13	32404648	3881	E. Hearne Ave	MRS03-APN32404648-SS2001	2	mg/kg	0.8	92.2	11.8	N/A	8.3	3.1	36.6
				MRS03-APN32404648-SS2002	2	mg/kg	1.2	10000	12.6	N/A	9.7	334	40.4
				MRS03-APN32404648-SS2003	2	mg/kg	0.83	8410	11.1	N/A	8.1	288	35.3
14	32404649	3881	E. Hearne Ave	MRS03-APN32404649-SS2001	2	mg/kg	0.9	11400	13.3	N/A	8.6	358	40.9
				MRS03-APN32404649-SS2002	2	mg/kg	1	9980	11.8	N/A	7.9	325	37.3
				MRS03-APN32404649-SS2003	2	mg/kg	0.97	10900	13.4	N/A	8.9	350	40.9
15	32404565	3884	E. Hearne Ave	MRS03-APN32404565C-SS2001	2	mg/kg	2 J	N/A	14.5	N/A	12.5	N/A	56
				MRS03-APN32404565-SS2002	2	mg/kg	1.7 J	N/A	12.4	N/A	11.5	N/A	52.1
				MRS03-APN32404565-SS2003	2	mg/kg	1 J	N/A	11.6	N/A	10.6	N/A	45
16	32404650	3885	E. Hearne Ave	MRS03-APN32404650-SS2001	2	mg/kg	2.3 J	N/A	13.6	N/A	20.1	N/A	53.8
				MRS03-APN32404650-SS2002	2	mg/kg	1.4 J	N/A	13.5	N/A	15.6	N/A	52.9
				MRS03-APN32404650-SS2003	2	mg/kg	1.3 J	N/A	13.5	N/A	15.4	N/A	53.2
17	32404651	3889	E. Hearne Ave	MRS03-APN32404651-SS2001	2	mg/kg	1.1 J	N/A	11.5	N/A	10	N/A	46.6
				MRS03-APN32404651-SS2002	2	mg/kg	1.1 J	N/A	12.3	N/A	10.4	N/A	49.8
				MRS03-APN32404651-SS2003	2	mg/kg	1.7 J	N/A	11.7	N/A	10.2	N/A	49.9
18	32404652	3895	E. Hearne Ave	MRS03-APN32404652-SS2001	2	mg/kg	0.96 J	N/A	10	N/A	9.1	N/A	42.6
				MRS03-APN32404652-SS2002	2	mg/kg	1.4 J	N/A	9.8	N/A	8.8	N/A	42
				MRS03-APN32404652-SS2003	2	mg/kg	2 U	N/A	9.9	N/A	9.1	N/A	43.5
19	32406016	3962	E. Lass Ave	MRS03-APN32406016-SS2001	2	mg/kg	2 U	N/A	11.6	N/A	9.8	N/A	45.4
				MRS03-APN32406016-SS2002	2	mg/kg	2 U	N/A	11.1	N/A	9.6	N/A	45
				MRS03-APN32406016-SS2003	2	mg/kg	2 U	N/A	11.3	N/A	9.1	N/A	44.6
20	32406018	3970	E. Lass Ave	MRS03-APN32406018-SS2001	2	mg/kg	0.94 J	N/A	11.2	N/A	9.6	N/A	45.7
				MRS03-APN32406018-SS2002	2	mg/kg	1.2 J	N/A	11	N/A	9.2	N/A	45
				MRS03-APN32406018-SS2003	2	mg/kg	1 J	N/A	10.6	N/A	9.1	N/A	46.3
21	32405188	3904	E. Lass Ave	MRS03-APN32405188-SS2001	2	mg/kg	0.85	N/A	5.4	N/A	5.2	N/A	22.1
				MRS03-APN32405188-SS2002	2	mg/kg	0.98	N/A	6.1	N/A	5.6	N/A	23.9
				MRS03-APN32405188-SS2003	2	mg/kg	1	N/A	6.3	N/A	5.5	N/A	25.5

TABLE 3-2
SUMMARY OF METALS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY (Sb)	ALUMINUM (Al)	COPPER (Cu)	IRON (Fe)	LEAD(Pb)	MANGANESE (Mn)	ZINC (Zn)
22	32405298	3905	E. Lum Ave	MRS03-APN32405298-SS2001	2	mg/kg	2.9	N/A	10.6	N/A	9.3	N/A	44.1
				MRS03-APN32405298-SS2002	2	mg/kg	1.7 J	N/A	10	N/A	8.2	N/A	41.3
				MRS03-APN32405298-SS20A3	2	mg/kg	2.2 J	N/A	10.1	N/A	8.9	N/A	83.8
				MRS03-APN32405298-SS20B3	2	mg/kg	1.8 J	N/A	9.4	N/A	7.9	N/A	39.4
				MRS03-APN32405298-SS20C3	2	mg/kg	1.9 J	N/A	9	N/A	7.4	N/A	37.8
23	32405187	3910	E. Lum Ave	MRS03-APN32405187-SS2001	2	mg/kg	1.1	N/A	6.6	N/A	8.7	N/A	25.6
				MRS03-APN32405187-SS2002	2	mg/kg	1.2	N/A	6.8	N/A	8.2	N/A	26.4
				MRS03-APN32405187-SS2003	2	mg/kg	0.83	N/A	6.8	N/A	8.3	N/A	26.3
24	32405186	3914	E. Lum Ave	MRS03-APN32405186-SS2001	2	mg/kg	2.2	N/A	6.3	N/A	9.7	N/A	28.6
				MRS03-APN32405186-SS2002	2	mg/kg	2.9	N/A	7	N/A	9.9	N/A	30.9
				MRS03-APN32405186-SS2003	2	mg/kg	3.3	N/A	7	N/A	10.6	N/A	33
25	32405300A(E)	3915	E. Lum Ave	MRS03-APN32405300A(E)-SS2001	2	mg/kg	2 U	N/A	11.7	N/A	11.1	N/A	49.6
				MRS03-APN32405300A(E)-SS2002	2	mg/kg	1.7 J	N/A	11.9	N/A	12.6	N/A	51.1
				MRS03-APN32405300A(E)-SS2003	2	mg/kg	1.5 J	N/A	11.9	N/A	11.6	N/A	49.2
	32405300A(W)	3915	E. Lum Ave	MRS03-APN32405300A(W)-SS2001	2	mg/kg	2 U	N/A	9.6	N/A	8.4	N/A	41.7
				MRS03-APN32405300A(W)-SS2002	2	mg/kg	2 U	N/A	9.4	N/A	7.8	N/A	40.9
				MRS03-APN32405300A(W)-SS2003	2	mg/kg	2 U	N/A	10.7	N/A	9.6	N/A	47.9
26	32405301	3919	E. Lum Ave	MRS03-APN32405301-SS2001	2	mg/kg	2 U	N/A	10.9	N/A	9.8	N/A	44
				MRS03-APN32405301-SS2002	2	mg/kg	2U	N/A	12.3	N/A	11.1	N/A	65.4
				MRS03-APN32405301-SS2003	2	mg/kg	2 U	N/A	11.7	N/A	10.6	N/A	49.2
27	32405185	3920	E. Lum Ave	MRS03-APN32405185-SS2001	2	mg/kg	0.84	N/A	6.4	N/A	8.3	N/A	25.2
				MRS03-APN32405185-SS2002	2	mg/kg	1.4	N/A	6.1	N/A	7.5	N/A	25.8
				MRS03-APN32405185-SS2003	2	mg/kg	1.8	N/A	6.1	N/A	8.3	N/A	25.3
28	32405184	3924	E. Lum Ave	MRS03-APN32405184-SS2001	2	mg/kg	1.5	N/A	7	N/A	19.8	N/A	27
				MRS03-APN32405184-SS2002	2	mg/kg	0.82	N/A	6.8	N/A	14.4	N/A	29.5
				MRS03-APN32405184-SS2003	2	mg/kg	2.4	N/A	7	N/A	74.8	N/A	27.6
29	32405303A (E)	3929	E LUM AVE	MRS03-APN32405303A-SS2001	2	mg/kg	3.1 J	NA	11.0 J	NA	12.7J	NA	48.4J
				MRS03-APN32405303A-SS2002	2	mg/kg	2.000 U	NA	11.1 J	NA	13.4J	NA	49.9J
				MRS03-APN32405303A-SS2003	2	mg/kg	2.000 U	NA	10.1 J	NA	10.7J	NA	44.2J
	32405303A (W)	3929	E LUM AVE	MRS03-APN32405303A-SS2001	2	mg/kg	3.9J	NA	12.2J	NA	82.2J	NA	48.8J
				MRS03-APN32405303A-SS2002	2	mg/kg	2.000UJ	NA	11.5J	NA	18.3J	NA	48.6J
				MRS03-APN32405303A-SS2003	2	mg/kg	2.000UJ	NA	10.7J	NA	16.6J	NA	45.4J
30	32405183	3930	E. Lum Ave	MRS03-APN32405183-SS2001	2	mg/kg	0.45 J	N/A	5.9	N/A	6.8	N/A	24.5
				MRS03-APN32405183-SS2002	2	mg/kg	0.5 J	N/A	6	N/A	9.2	N/A	32.1
				MRS03-APN32405183-SS20A3	2	mg/kg	0.37 J	N/A	6.1	N/A	6.5	N/A	24.5
				MRS03-APN32405183-SS20B3	2	mg/kg	0.41 J	N/A	6.8	N/A	7.5	N/A	26.2
				MRS03-APN32405183-SS20C3	2	mg/kg	0.42 J	N/A	6.7	N/A	7.4	N/A	25.5

TABLE 3-2
SUMMARY OF METALS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY (Sb)	ALUMINUM (Al)	COPPER (Cu)	IRON (Fe)	LEAD (Pb)	MANGANESE (Mn)	ZINC (Zn)
31	32405305A(E)	3939	E. Lum Ave	MRS03-APN32405305A(E)-SS2001	2	mg/kg	1.7 J	N/A	10.9	N/A	53.7	N/A	50.7
				MRS03-APN32405305A(E)-SS2002	2	mg/kg	3.9	N/A	11.2	N/A	178	N/A	53.9
				MRS03-APN32405305A(E)-SS20A3	2	mg/kg	2.1 J	N/A	12.1	N/A	81.5	N/A	57.7
				MRS03-APN32405305A(E)-SS2B3	2	mg/kg	1.9 J	N/A	11.3	N/A	83.8	N/A	53.8
				MRS03-APN32405305A(E)-SS20C3	2	mg/kg	2.2 J	N/A	12.8	N/A	81.3	N/A	60.4
	32405305A(W)	3939	E. Lum Ave	MRS03-APN32405305A(W)-SS2001	2	mg/kg	3.4	N/A	10.9	N/A	55	N/A	51.3
				MRS03-APN32405305A(W)-SS2002	2	mg/kg	1.3 J	N/A	9.2	N/A	8.9	N/A	50.1
				MRS03-APN32405305A(W)-SS2003	2	mg/kg	1.1 J	N/A	11.5	N/A	109	N/A	57.8
32	32404647A(E)	3880	E. Ryan Ave	MRS03-APN32404647A(E)-SS2001	2	mg/kg	0.94	N/A	15.4	N/A	9.8	N/A	46.8
				MRS03-APN32404647A(E)-SS2002	2	mg/kg	0.65	12400	14.1	N/A	8.9	370	43.5
				MRS03-APN32404647A(E)-SS2003	2	mg/kg	0.95	12800	14.8	N/A	9.3	389	45.2
	32404647A(W)	3880	E. Ryan Ave	MRS03-APN32404647A(W)-SS2001	2	mg/kg	1	9560	12	N/A	8	326	37.4
				MRS03-APN32404647A(W)-SS2002	2	mg/kg	0.92	10500	12.4	N/A	8.2	340	40
				MRS03-APN32404647A(E)-SS2003	2	mg/kg	0.91	11100	12.7	N/A	8.3	356	40.3
33	32404645	3884	E. Ryan Ave	MRS03-APN32404645-SS2001	2	mg/kg	1.1	13800	15.5	N/A	10.1	N/A	46.7
				MRS03-APN32404645-SS2002	2	mg/kg	1.1	13000	14.8	N/A	10	N/A	45.4
				MRS03-APN32404645-SS2003	2	mg/kg	1.1	13100	14.8	N/A	10	394	45.5
34	32405198	3884	E. Ryan Ave	MRS03-APN32405198-SS2001	2	mg/kg	3.6	N/A	11.5	N/A	10.3	N/A	47.1
				MRS03-APN32405198-SS2002	2	mg/kg	2.1 J	N/A	10.3	N/A	9.4	N/A	41.8
				MRS03-APN32405198-SS2003	2	mg/kg	3.1	N/A	11	N/A	10.1	N/A	50.1
35	32404644	3890	E. Ryan Ave	MRS03-APN32404644-SS2001	2	mg/kg	1	9710	11.3	N/A	13.1	305	37.6
				MRS03-APN32404644-SS2002	2	mg/kg	1.1	11500	13.3	N/A	12.5	358	42.1
				MRS03-APN32404644-SS2003	2	mg/kg	0.89	11500	13.5	N/A	11.6	353	42.3
36	32405199	3895	E. Ryan Ave	MRS03-APN32405199-SS2001	2	mg/kg	4.4	N/A	11.4	N/A	15.7	N/A	48.4
				MRS03-APN32405199-SS2002	2	mg/kg	6.2	N/A	11	N/A	14.6	N/A	45.4
				MRS03-APN32405199-SS2003	2	mg/kg	5.5	N/A	10	N/A	13.3	N/A	42.4
37	32404643	3896	E. Ryan Ave	MRS03-APN32405199-SS2001	2	mg/kg	0.76	10900	12.5	N/A	9.1	335	39.7
				MRS03-APN32405199-SS2002	2	mg/kg	0.77	10700	12	N/A	8.4	317	39.3
				MRS03-APN32405199-SS2003	2	mg/kg	1	12200	13.5	N/A	9.3	362	42.1
38	32405200	3899	E. Ryan Ave	MRS03-APN32405200-SS2001	2	mg/kg	4.1	N/A	6.5	N/A	10.1	N/A	26.5
				MRS03-APN32405200-SS2002	2	mg/kg	4.8	N/A	9.1	N/A	12.5	N/A	39.1
				MRS03-APN32405200-SS2003	2	mg/kg	5.9	N/A	8.9	N/A	12.7	N/A	38.7
39	32404642	3900	E. Ryan Ave	MRS03-APN32404642-SS2001	2	mg/kg	0.46 J	8270	10.3	N/A	7.8	294	34.2
				MRS03-APN32404642-SS2002	2	mg/kg	0.85	9860	11.9	N/A	9.2	331	38.5
				MRS03-APN32404642-SS2003	2	mg/kg	0.71	8890	11.1	N/A	8.2	301	36

TABLE 3-2
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#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY (Sb)	ALUMINUM (Al)	COPPER (Cu)	IRON (Fe)	LEAD (Pb)	MANGANESE (Mn)	ZINC (Zn)
40	32404641	3901	E. Ryan Ave	MRS03-APN32404641-SS2001	2	mg/kg	0.72	12100	12.6	N/A	8	327	39.5
				MRS03-APN32404641-SS2002	2	mg/kg	0.61	12200	13.1	N/A	8.3	336	40.6
				MRS03-APN32404641-SS2003	2	mg/kg	0.62	13000	14	N/A	8.6	347	42.9
41	32405200	3899	E RYAN AVE	MRS03-APN32405200-SS2001	2	mg/kg	4.1	NA	6.5	NA	10.1	NA	26.5
				MRS03-APN32405200-SS2002	2	mg/kg	4.8	NA	9.1	NA	12.5	NA	39.1
				MRS03-APN32405200-SS2003	2	mg/kg	5.9	NA	8.9	NA	12.7	NA	38.7
42	32405201	3905	E. Ryan Ave	MRS03-APN32405202-SS2001	2	mg/kg	1.9 J	N/A	9.5	N/A	12.4	N/A	41.9
				MRS03-APN32405202-SS2002	2	mg/kg	1.5 J	N/A	8.6	N/A	10.1	N/A	37.2
				MRS03-APN32405202-SS2003	2	mg/kg	2.3 J	N/A	8.7	N/A	11	N/A	38
43	32405202	3909	E. Ryan Ave	MRS03-APN32405202-SS2001	2	mg/kg	2.4 J	N/A	9.1	N/A	9.2	N/A	38.4
				MRS03-APN32405202-SS2002	2	mg/kg	1.7	N/A	7.3	N/A	8	N/A	29.8
				MRS03-APN32405202-SS2003	2	mg/kg	4.3	N/A	10.5	N/A	10.6	N/A	45.2
44	32405203	3915	E. Ryan Ave	MRS03-APN32405203-SS2001	2	mg/kg	1	N/A	7.6	N/A	7.6	N/A	31.5
				MRS03-APN32405203-SS2002	2	mg/kg	0.88 J	N/A	6.8	N/A	6.6	N/A	29.4
				MRS03-APN32405203-SS20A3	2	mg/kg	1.2 J	N/A	9.4	N/A	9.2	N/A	40.4
				MRS03-APN32405203-SS20B3	2	mg/kg	0.78 J	N/A	7	N/A	6.6	N/A	32.7
				MRS03-APN32405203-SS20C3	2	mg/kg	0.89 J	N/A	7.4	N/A	7	N/A	31.6
45	32439010	3948	E. Snavely Ave	MRS03-APN32439010-SS2001	2	mg/kg	5.1	N/A	13.7	N/A	27	N/A	50.9
				MRS03-APN32439010-SS2002	2	mg/kg	4	N/A	13.9	N/A	30.5	N/A	52.4
				MRS03-APN32439010-SS2003	2	mg/kg	3.9	N/A	12.2	N/A	56.2	N/A	48
46	32439030	3959	E. Snavely Ave	MRS03-APN32439030-SS2001	2	mg/kg	2 U	N/A	13.8	N/A	17.4	N/A	50.7
				MRS03-APN32439030-SS2002	2	mg/kg	2 U	N/A	13.3	N/A	15.9	N/A	48.6
				MRS03-APN32439030-SS20A3	2	mg/kg	0.92 J	N/A	14.9	N/A	24.9	N/A	57.3
47	32439029	3963	E. Snavely Ave	MRS03-APN32439029-SS2001	2	mg/kg	2.3 J	N/A	12.1	N/A	17	N/A	50.7
				MRS03-APN32439029-SS2002	2	mg/kg	1.1 J	N/A	11.9	N/A	18	N/A	50.8
				MRS03-APN32439029-SS20A3	2	mg/kg	1.9 J	N/A	10.8	N/A	35.8	N/A	46.4
				MRS03-APN32439029-SS20B3	2	mg/kg	2 J	N/A	11.1	N/A	27.8	N/A	45.9
				MRS03-APN32439029-SS20C3	2	mg/kg	1.8 J	N/A	11.3	N/A	29.1	N/A	47.8
48	32439028	3967	E. Snavely Ave	MRS03-APN32439028-SS2001	2	mg/kg	1.1 J	N/A	11.1	N/A	13.4	N/A	45
				MRS03-APN32439028-SS2002	2	mg/kg	1.1 J	N/A	11.7	N/A	24.3	N/A	51.9
				MRS03-APN32439028-SS2003	2	mg/kg	1.7 J	N/A	11.9	N/A	22.7	N/A	50.7
49	32439027	3971	E. Snavely Ave	MRS03-APN32439027-SS2001	2	mg/kg	2 U	N/A	11.2	N/A	11.3	N/A	71.7
				MRS03-APN32439027-SS2002	2	mg/kg	2 U	N/A	10.7	N/A	10.5	N/A	44.4
				MRS03-APN32439027-SS20A3	2	mg/kg	2 U	N/A	10.5	N/A	16.6	N/A	43
				MRS03-APN32439027-SS20B3	2	mg/kg	2 U	N/A	11.4	N/A	16.9	N/A	217
				MRS03-APN32439027-SS20C3	2	mg/kg	2 U	N/A	11.1	N/A	16.3	N/A	45.1

TABLE 3-2
SUMMARY OF METALS CONCENTRATIONS – CONFIRMATION SOIL SAMPLES COLLECTED DURING THE TCRA (APRIL 2013 TO JULY 2014)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY (Sb)	ALUMINUM (Al)	COPPER (Cu)	IRON (Fe)	LEAD (Pb)	MANGANESE (Mn)	ZINC (Zn)
50	32439012	3942	E. Snavely Cir	MRS03-APN32439012-SS2001	2	mg/kg	2.2 J	N/A	12.3	N/A	52.2	N/A	52.4
				MRS03-APN32439012-SS2002	2	mg/kg	1.9 J	N/A	11.5	N/A	10.5	N/A	55.9
				MRS03-APN32439012-SS2003	2	mg/kg	3.1	N/A	12.4	N/A	11.4	N/A	51
51	32439011	3944	E. Snavely Cir	MRS03-APN32439011-SS2001	2	mg/kg	2.5	N/A	12	N/A	11.1	N/A	48.9
				MRS03-APN32439011-SS2002	2	mg/kg	3.4	N/A	11.9	N/A	10.6	N/A	53
				MRS03-APN32439011-SS2003	2	mg/kg	2.4 J	N/A	11.6	N/A	10.6	N/A	63.8
52	32439009	3954	E. Snavely Way	MRS03-APN32439009-SS2001	2	mg/kg	2.5	N/A	13.8	N/A	13.6	N/A	56.8
				MRS03-APN32439009-SS2002	2	mg/kg	2.9	N/A	13.6	N/A	14.8	N/A	57.6
				MRS03-APN32439009-SS20A3	2	mg/kg	2.3 J	N/A	13.7	N/A	14	N/A	52.2
				MRS03-APN32439009-SS20B3	2	mg/kg	2.9	N/A	14.2	N/A	23.1	N/A	54.1
				MRS03-APN32439009-SS20C3	2	mg/kg	2.2 J	N/A	13.3	N/A	13.3	N/A	52.8
53	32439008	3956	E. Snavely Way	MRS03-APN32439008-SS2001	2	mg/kg	2.8	N/A	12	N/A	12.4	N/A	63.5
				MRS03-APN32439008-SS2002	2	mg/kg	3	N/A	12	N/A	14.4	N/A	75.8
				MRS03-APN32439008-SS2003	2	mg/kg	3.3	N/A	12.1	N/A	14.7	N/A	55.4
54	32405282A*	3920	E. Thompson Ave	MRS03-APN32405282A-SS2001	2	mg/kg	1.5 J	N/A	12.7	N/A	12	N/A	52.9
				MRS03-APN32405282A-SS2002	2	mg/kg	2 U	N/A	12.7	N/A	12.3	N/A	52.8
				MRS03-APN32405282A-SS2003	2	mg/kg	2 U	N/A	12.9	N/A	12.1	N/A	54.9
55	32405280*	3939	E. Thompson Ave	MRS03-APN32405280-SS2001	2	mg/kg	1.8 J	N/A	13.2	N/A	19.1	N/A	50.5
				MRS03-APN32405280-SS2002	2	mg/kg	1.3 J	N/A	11.9	N/A	19.5	N/A	47.9
				MRS03-APN32405280-SS2003	2	mg/kg	1.2 J	N/A	13.7	N/A	15.4	N/A	55.5
56	32405279 A(E)	3940	E. Thompson Ave	MRS03-APN32405279 A(E)-SS2001	2	mg/kg	2 U	N/A	11.5	N/A	12.7	N/A	47.3
				MRS03-APN32405279 A(E)-SS2002	2	mg/kg	2 U	N/A	11.4	N/A	14	N/A	46.6
				MRS03-APN32405279 A(E)-SS2003	2	mg/kg	2 U	N/A	10.5	N/A	11.4	N/A	42.4
	32405279 A(W)	3940	E. Thompson Ave	MRS03-APN32405279 A(W)-SS2001	2	mg/kg	2 U	N/A	12.2	N/A	12.3	N/A	50.3
				MRS03-APN32405279 A(W)-SS2002	2	mg/kg	1.9 J	N/A	12.3	N/A	31	N/A	51.8
				MRS03-APN32405279 A(W)-SS2003	2	mg/kg	2.1 J	N/A	12.3	N/A	13.1	N/A	50.7
57	32405277*	3944	E. Thompson Ave	MRS03-APN32405277*-SS2001	2	mg/kg	1.7 J	N/A	10.1 J	N/A	13.2 J	N/A	44.6 J
				MRS03-APN32405277*-SS2002	2	mg/kg	2.3 J	N/A	12.1 J	N/A	22.2 J	N/A	59.3 J
				MRS03-APN32405277*-SS2003	2	mg/kg	2.01 J	N/A	11.6 J	N/A	16.0 J	N/A	47.7 J

Abbreviations and Notes:

APN - assessor's parcel number
(E) east section of subdivided parcel
J - estimated value; the analyte was positively identified
mg/kg - milligram per kilogram
N/A - not applicable
U - not detected above the limit of detection
UJ - estimated non-detect
(W) west section of subdivided parcel
The 15 Skeet Ranges site was previously identified in USACE records as part of Munitions Response Site (MRS) 03. This designation was later changed, following the Site Inspection (Parsons 2011) to include the Site as part of MRS01. References to MRS03 are retained in portions of the RI report, including sample identifiers, for legacy reasons.

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
1	32404211B	3875	E. Shaeffer Ave	MRS03-APN32404211B-SS001	0	9/24/2015	1	µg/kg	1 J	21.0	4.4 J	1.67 U	6.8	91.0	55.0	92 J	56.0	37 J	91.0	16.0	120	1.2 J	51.0	4.2 J	40.0	140
				MRS03-APN32404211B-SS002	0	9/24/2015		µg/kg	1.67 U	21.0	1.6 J	1.67 U	4.2 J	57.0	31.0	29 J	30.0	15 J	42.0	8.5	62.0	1.67 U	1.67 U	3 J	26.0	61.0
				MRS03-APN32404211B-SS003	0	9/24/2015		µg/kg	1.2 J	21.0	2.6 J	1.67 U	5.6	61.0	36.0	47 J	34.0	14 J	51.0	10.0	72.0	1.67 U	1.67 U	2.7 J	31.0	74.0
2	32404211D	3880	E. Devlin Ave	MRS03-APN32404211D-SS001	0	12/4/2014	1	µg/kg	1.4 J	2.5 J	4.4 J	1.67 U	15.0	100	120	190	85.0	26.0	150	18.0	200	2 J	81.0	4.5 J	81.0	210
				MRS03-APN32404211D-SS1001	1	12/16/2014		µg/kg	1.67 U	1.2 J	3.5 J	1.67 U	6.6	44.0	47.0	76.0	30.0	14.0	65.0	3.6 J	90.0	1.3 J	34.0	3.4 J	36.0	100
				MRS03-APN32404211D-SS1002	1	12/16/2014		µg/kg	1.67 U	1.67 U	1.4 J	1.67 U	2.2 J	1.67 U	9.9	21.0	1.67 U	1.67 U	11.0	1.67 U	19.0	1.67 U	7.8	2.2 J	10.0	19.0
				MRS03-APN32404211D-SS1003	1	12/16/2014		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	2.9 J	9.3	23.0	36.0	8.5	1.67 U	22.0	1.67 U	37.0	1.67 U	15.0	1.2 J	17.0	36.0
				MRS03-APN32404211D-SS2001	2	12/16/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.6 J	2.6 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
				MRS03-APN32404211D-SS2002	2	12/16/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.2 J	2 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
				MRS03-APN32404211D-SS2003	2	12/16/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.2 J	2.1 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
3	32404211E	3880	E. Devlin Ave	MRS03-APN32404211E-SS001	0	12/4/2014	1	µg/kg	2.1 J	3.7 J	9.5	1.67 U	23.0	120	130	160	1.67 U	92.0	190	21.0	230	4.2 J	86.0	7.3	110	260
				MRS03-APN32404211E-SS1001	1	7/22/2016	2	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.5 J	43.0	14.0	31.0	17.0	11.0	1.67 U	21.0	26.0	1.67 U	18.0	1.67 U	9.3	25.0
				MRS03-APN32404211E-SS1002	1	7/22/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.1 J	43.0	13.0	27.0	15.0	10.0	1.67 U	20.0	27.0	1.67 U	15.0	1.67 U	9.7	25.0
				MRS03-APN32404211E-SS1003	1	7/22/2016		µg/kg	1.67 U	1.67 U	1.5 J	1.67 U	5.4	53.0	17.0	41.0	20.0	12.0	1.67 U	21.0	49.0	1.67 U	19.0	2.4 J	23.0	45.0
				MRS03-APN32404211E-SS2001	2	7/22/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
				MRS03-APN32404211E-SS2002	2	7/22/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	14.0	1.67 U	4.8	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.7 J	1.67 U
				MRS03-APN32404211E-SS2003	2	7/22/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	23.0	1.67 U	14.0	1.67 U	4.9	1.67 U	1.67 U	10.0	1.67 U	1.67 U	1.67 U	4.2 J	1.67 U
4	32404212	3883	E. Shaeffer Ave	MRS03-APN32404212-SS001	0	9/24/2015	1	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2 J	38.0	13.0	1.67 U	12.0	1.67 U	16.0	2.6 J	26.0	1.67 U	1.67 U	1.7 J	11.0	25.0
				MRS03-APN32404212-SS002	0	9/24/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	37.0	12.0	1.67 U	11.0	1.67 U	15.0	3.3 J	23.0	1.67 U	1.67 U	3.2 J	9.2	23.0
				MRS03-APN32404212-SS003	0	9/24/2015		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	6.0	58.0	28.0	26 J	27.0	12 J	37.0	7.5	72.0	1.67 U	1.67 U	2.7 J	33.0	63.0
5	32404237A(E)	3870	E. Devlin Ave	MRS03-APN32404237A(E)-SS001	0	12/8/2014	1	µg/kg	20.0	32.0	98.0	2.9 J	230	2,000	1,700	2,100	1,200	1,100	2,400	340	3,100	35.0	1,200	83.0	1,200	3,400
				MRS03-APN32404237A(E)-SS1001	1	12/8/2014		µg/kg	5.0	7.2	27.0	1 J	77.0	640	540	760	490	530	890	130	1,100	15.0	420	17.0	510	1,200
				MRS03-APN32404237A(E)-SS2001	2	12/8/2014		µg/kg	1.3 J	2 J	6.1	1.67 U	11.0	63.0	57.0	90.0	50.0	52.0	100	8.6	140	3 J	47.0	4.2 J	65.0	140
				MRS03-APN32404237A(E)-SS3001	3	12/8/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.2 J	1.67 U	8.0	14.0	1.67 U	1.67 U	1.67 U	1.67 U	14.0	1.67 U	2.5 J	1.67 U	7.6	8.9
				MRS03-APN32404237A(E)-SS3002	3	12/9/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	3.3 J	2.8 J	19.0	33.0	6.0	1.67 U	19.0	1.67 U	40.0	1.67 U	12.0	0.97 J	20.0	34.0
				MRS03-APN32404237A(E)-SS3003	3	12/10/2014		µg/kg	1.67 U	1.67 U	0.98 J	1.67 U	1.7 J	1.67 U	11.0	22.0	1.67 U	1.67 U	9.7	1.67 U	22.0	1.67 U	6.2	1.1 J	11.0	19.0
				MRS03-APN32404237A(E)-SS4001	4	12/8/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.9 J	1.67 U	12.0	19.0	1.67 U	1.67 U	5.8	1.67 U	22.0	1.67 U	5.1	1.67 U	12.0	15.0
				MRS03-APN32404237A(E)-SS4002	4	12/9/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.1 J	1.67 U	7.2	31.0	3.1 J	1.67 U	11.0	1.67 U	20.0	1.67 U	8.6	1.67 U	9.8	10.0
				MRS03-APN32404237A(E)-SS4003	4	12/10/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.1 J	1.67 U	2.4 J	13.0	1.67 U	1.67 U	2.4 J	1.67 U	13.0	1.67 U	0.91 J	1.67 U	8.5	6.0
	32404237A(W)	3870	E. Devlin Ave	MRS03-APN32404237A(W)-SS001	0	4/15/2015	1	µg/kg	31 J	66.0	160	16.7 U	600	3,800	3,000	5,800	3,200	2,300	5,000	790	6,700	90.0	2,800	160	3,200	7,000
				MRS03-APN32404237A(W)-SS1001	1	4/15/2015		µg/kg	52.0	89.0	240	16.7 U	790	4,900	3,700	7,600	3,900	2,500	6,100	980	8,200	140	3,400	240	3,800	8,900
				MRS03-APN32404237A(W)-SS2001	2	4/15/2015		µg/kg	4.1 J	7.5	23.0	1.67 U	100	600	410	870	440	260	690	110	1,100	18.0	390	24.0	530	1,100
				MRS03-APN32404237A(W)-SS3001	3	4/15/2015		µg/kg	0.99 J	3.6 J	5.0	1.67 U	21.0	120	84.0	180	94.0	59.0	140	25.0	200	4.7 J	87.0	7.1	94.0	210
				MRS03-APN32404237A(W)-SS3002	3	4/15/2015		µg/kg	1.67 U	1.2 J	4.7 J	3.1 J	4.5 J	40.0	21.0	48.0	30.0	31.0	46.0	11.0	56.0	4.8 J	31.0	3.9 J	24.0	59.0
				MRS03-APN32404237A(W)-SS3003	3	4/15/2015		µg/kg	1.67 U	1.67 U	2.4 J	1.67 U	11.0	73.0	37.0	82.0	40.0	37.0	62.0	13.0	120	1.5 J	39.0	2.6 J	62.0	100
				MRS03-APN32404237A(W)-SS4001	4	4/15/2015		µg/kg	1.67 U	1.67 U	3.7 J	1.67 U	12.0	85.0	49.0	100	54.0	42.0	73.0	18.0	130	2.2 J	50.0	4.2 J	66.0	120
				MRS03-APN32404237A(W)-SS4002	4	4/15/2015		µg/kg	1.67 U	1.67 U	6.2	1.67 U	12.0	87.0	45.0	100	52.0	43.0	86.0	16.0	120	2.5 J	50.0	6.7	61.0	130
				MRS03-APN32404237A(W)-SS4003	4	4/15/2015		µg/kg	1.67 U	1.67 U	6.0	1.67 U	16.0	100	75.0	160	84.0	53.0	130	22.0	190	2.8 J	74.0	7.9	94.0	180
6	32404240	3850	E. Devlin Ave	MRS03-APN32404240-SS001	0	7/21/2016	1	µg/kg	1.1 J	1.67 U	3.5 J	1.67 U	12.0	57.0	18.0	52.0	24.0	13.0	30.0	6.10	57.0	1.9 J	53.0	4 J	24.0	52.0
				MRS03-APN32404240-SS002	0	7/21/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.2 J	45.0	13.0	33.0	16.0	7.8	1.67 U	20.0	33.0	1.67 U	14.0	1.8 J	14.0	26.0
				MRS03-APN32404240-SS003	0	7/21/2016		µg/kg	0.96 J	1.9 J	1.67 U	1.67 U	4 J	51.0	18.0	42.0	21.0	11.0	1.67 U	21.0	44.0	1.67 U	19.0	2.9 J	19.0	38.0
7	32404281	3849	E. Shaeffer Ave	MRS03-APN32404281-SS001	0	12/2/2014	1	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.2 J	1.67 U	15.0	30.0	1.67 U	1.67 U	11.0	1.67 U	26.0	1.67 U	7.0	1.67 U	12.0	21.0
				MRS03-APN32404281-SS002	0	12/2/2014		µg/kg	1.67 U	3.1 J	1.67 U	1.67 U	3.4 J	4.7 J	22.0	29.0	5.5	1.67 U	17.0	1.67 U	40.0	1.67 U	11.0	3.9 J	19.0	33.0
				MRS03-APN32404281-SS003	0	12/2/2014		µg/kg	1.67 U	1.8 J	1.67 U	1.67 U	2 J	1.67 U	14.0	24.0	1.67 U	1.67 U	7.1	1.67 U	25.0	1.67 U	6.4	2.9 J	12.0	19.0
8	32404282A (E)	3871	E. Shaeffer Ave	MRS03-APN32404282A(E)-SS001	0	4/9/2015	1	µg/kg	1.1 J	4 J	3.5 J	1.67 U	11.0	77.0	55.0	120	59.0	46.0	100	17.0	120	3.7 J	59.0	4.6 J	52.0	140
				MRS03-APN32404282A(E)-SS002	0	3/10/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	150	40 J	250	42 J	91.0	62.0	16.7 U	110	16.7 U	180	16.7 U	35 J	77.0
				MRS03-APN32404282A(E)-SS003	0	3/10/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	160	57.0	270	57.0	100	80.0	16.7 U	140	16.7 U	190	16.7 U	47 J	100
	32404282A (W)	3871	E. Shaeffer Ave	MRS03-APN32404282A(W)-SS001	0	4/9/2015	1	µg/kg	1.67 U	3.6 J	1.67 U	1.67 U	5.6	41.0	31.0	61.0	34.0	30.0	61.0	11.0	62.0	1.67 U	36.0	3.6 J	24.0	81.0
				MRS03-APN32404282A(W)-SS002	0	3/11/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	120	19 J	210	20 J	78.0	29 J	16.7 U	71.0	16.7 U	16.7 U	16.7 U	14 J	31 J
				MRS03-APN32404282A(W)-SS003	0	3/11/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	130	36 J	220	33 J	82.0	48 J	16.7 U	97.0	16.7 U	170	16.7 U	30 J	59.0
9	32404282B (E)	3855	E. Shaeffer Ave	MRS03-APN32404282B(E)-SS001	0	12/2/2014	1	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	22.0	1.67 U	1.67 U	5.6	1.67 U	22.0	1.67 U	5.9	1.9 J	11.0	17.0
				MRS03-APN32404282B(E)-SS002	0	4/7/2015		µg/kg	1 J	3.9 J	1.67 U	1.67 U	3 J	19.0	15.0	27.0	17.0	20.0	27.0	1.67 U	27.0	1.67 U	20.0	4 J	11.0	36.0
				MRS03-APN32404282B(E)-SS003	0	4/7/2015		µg/kg	1.67 U	3.7 J	1.67 U	1.67 U	2.8 J	19.0	17.0	29.0	21.0	22.0	28.0	8.7	30.0	1.67 U	24.0	3.6 J	13.0	36.0
	32404282B (W)	3855	E. Shaeffer Ave	MRS03-APN32404282B(W)-SS001	0	12/2/2014	1	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	6.3	11.0	1.67 U	1.67 U	1.67 U	1.67 U	7.3	1.67 U	1.2 J	2 J	5.2	2.7 J
				MRS03-APN32404282B(W)-SS002	0	4/7/2015		µg/kg	1.2 J	4 J	1.67 U	1.67 U	1.9 J	11.0	1.67 U	1.67 U	1.67 U	1.67 U	14.0	1.67 U	13.0	1.67 U	1.67 U	5.1	6.0	18.0
				MRS03-APN32404282B(W)-SS003	0	4/7/2015		µg/kg	1.67 U	3.8 J	1.67 U	1.67 U	2.3 J	11.0	8.1	1.67 U	1.67 U	1.67 U	18.0	1.67 U	18.0	1.67 U	1.67 U	4.2 J	7.0	21.0

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
10	32404484	3860	E. Hearne Ave	MRS03-APN32404484-SS001	0	12/10/2014	1	µg/kg	3.2 J	1.67 U	13.0	1.67 U	39.0	350	350	530	280	110	490	74.0	620	4.2 J	250	11.0	260	630
				MRS03-APN32404484-SS1001	1	9/21/2015	2	µg/kg	7.5	29.0	44.0	1.67 U	140	850	610	1,300	610	360	890	160	1,400	19.0	570	28.0	620	1,400
				MRS03-APN32404484-SS2001	2	9/21/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	37.0	9.6	1.67 U	9.9	1.67 U	16.0	2.3 J	23.0	1.67 U	9.4	1.67 U	9.4	22.0
				MRS03-APN32404484-SS3001	3	9/21/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	3.3 J	42.0	14.0	1.67 U	15.0	1.67 U	22.0	4.1 J	35.0	1.67 U	12.0	0.95 J	16.0	32.0
				MRS03-APN32404484-SS3002	3	9/22/2015		µg/kg	1.67 U	1.67 U	2.6 J	1.67 U	12.0	78.0	32.0	49 J	31.0	22 J	50.0	8.5	98.0	1.8 J	27.0	2 J	53.0	82.0
				MRS03-APN32404484-SS3003	3	9/22/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.4 J	43.0	16.0	15.0	16.0	1.67 U	21.0	4.3 J	31.0	1.67 U	13.0	1.2 J	13.0	28.0
				MRS03-APN32404484-SS4001	4	9/22/2015		µg/kg	4.9 J	26.0	31.0	1.67 U	46.0	280	170	420 J	160	120 J	310	48.0	410	13.0	150	17.0	190	450
				MRS03-APN32404484-SS4002	4	9/22/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	7.9	56.0	21.0	13 J	20.0	14 J	33.0	5.6	65.0	1.67 U	17.0	1.3 J	33.0	54.0
				MRS03-APN32404484-SS4003	4	9/22/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	37.0	11.0	1.9 J	12.0	1.67 U	19.0	3.5 J	23.0	1.67 U	9.3	1.5 J	8.8	26.0
11	32404485	3854	E. Hearne Ave	MRS03-APN32404485-SS001	0	2/6/2017	1	µg/kg	3.5 J	6.6	10.0	0 U	32.0	240	260	400	180	95.0	280	51.0	450	3.3 J	160	14.0	200	430
				MRS03-APN32404485-SS002	0	2/6/2017		µg/kg	2.1 J	4.1 J	5.2	0 U	24.0	180	190	320	140	73.0	200	40.0	350	1.8 J	120	8.0	140	310
				MRS03-APN32404485-SS003	0	2/6/2017		µg/kg	2.1 J	4.4 J	5.2	0 U	35.0	230	220	390	160	84.0	240	44.0	470	2.7 J	140	9.5	210	400
				MRS03-APN32404485-SS1001	1	2/6/2017		µg/kg	0 U	1.5 J	2.9 J	0 U	5.2	36.0	43.0	58.0	5.3	23.0	41.0	0 U	70.0	0 U	32.0	4.5 J	31.0	69.0
				MRS03-APN32404485-SS1002	1	2/6/2017		µg/kg	0 U	0 U	1.1 J	0 U	1.7 J	15.0	19.0	27.0	0 U	11.0	4.4 J	0 U	32.0	0 U	13.0	0 U	13.0	29.0
				MRS03-APN32404485-SS1003	1	2/6/2017		µg/kg	0 U	1.1 J	3.4 J	0 U	6.0	60.0	75.0	99.0	36.0	39.0	87.0	0 U	110	0 U	55.0	2.8 J	39.0	120
				MRS03-APN32404485-SS2001	2	2/6/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	2.8 J	3 J	5.2	0 U	0 U	0 U	0 U	6.1	0 U	0 U	0 U	3 J	5.1
				MRS03-APN32404485-SS2002	2	2/6/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	2.3 J	0 U	0 U	0 U	0 U	0 U	0 U	4.4 J	0 U	0 U	0 U	2.2 J	4.2 J
				MRS03-APN32404485-SS2003	2	2/6/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	1.2 J	1.3 J	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	1.2 J	2.1 J
12	32404486	3850	E. Hearne Ave	MRS03-APN32404486-SS001	0	2/9/2017	1	µg/kg	4.5 J	7.6	17.0	1.2 J	56.0	470	460	730	330	180	490	100	750	5.5	310	17.0	320	740
				MRS03-APN32404486-SS002	0	2/9/2017		µg/kg	3.6 J	5.6	12.0	0 U	45.0	380	390	610	270	170	400	80.0	610	3.8 J	220	13.0	260	590
				MRS03-APN32404486-SS003	0	2/9/2017		µg/kg	3.4 J	5.4	13.0	1.1 J	52.0	410	420	710	310	170	440	90.0	690	5.3	260	12.0	300	690
				MRS03-APN32404486-SS1001	1	2/9/2017		µg/kg	0 U	0 U	2.4 J	0 U	7.5	49.0	59.0	87.0	27.0	19.0	64.0	0 U	110	0 U	45.0	2 J	46.0	97.0
				MRS03-APN32404486-SS1002	1	2/9/2017		µg/kg	1.2 J	1.5 J	4.3 J	0 U	15.0	110	140	200	110	56.0	160	7.2	210	1.7 J	110	4 J	84.0	190
				MRS03-APN32404486-SS1003	1	2/9/2017		µg/kg	0 U	0.98 J	2.4 J	0 U	6.7	53.0	62.0	96.0	32.0	21.0	69.0	0 U	110	0 U	51.0	2 J	44.0	100
				MRS03-APN32404486-SS2001	2	2/9/2017		µg/kg	0 U	0 U	1.8 J	0 U	3.4 J	13.0	15.0	22.0	0 U	11.0	1.8 J	0 U	26.0	0 U	11.0	0 U	11.0	25.0
				MRS03-APN32404486-SS2002	2	2/9/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	5.6	5.3	9.4	0 U	4.1 J	0 U	0 U	9.7	0 U	3.6 J	0 U	3.9 J	9.3
				MRS03-APN32404486-SS2003	2	2/9/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	2.4 J	2.7 J	0 U	0 U	0 U	0 U	0 U	4.8 J	0 U	0 U	0 U	2.1 J	4.5 J
13	32404559	3916	E. Hearne Ave	MRS03-APN32404559-SS001	0	4/7/2015	1	µg/kg	2.3 J	5.5	1.67 U	1.67 U	9.2	62.0	45.0	93.0	49.0	42.0	85.0	1.67 U	100	1.67 U	1.67 U	5.7	46.0	120
				MRS03-APN32404559-SS002	0	4/7/2015		µg/kg	1.7 J	4.9 J	2.2 J	1.67 U	6.2	51.0	44.0	83.0	46.0	42.0	75.0	1.67 U	82.0	1.67 U	1.67 U	5.2	33.0	98.0
				MRS03-APN32404559-SS003	0	4/7/2015		µg/kg	1.8 J	4.8 J	3.9 J	1.67 U	8.5	85.0	55.0	100	61.0	64.0	110	20.0	120	1.67 U	58.0	4.3 J	47.0	150
14	32404561C	3890	E. Hearne Ave	MRS03-APN32404561C-SS001	0	12/15/2014	1	µg/kg	11.0	18.0	65.0	1.1 J	120	890	870	1,200	640	460	1,300	180	1,400	30.0	590	44.0	640	1,600
				MRS03-APN32404561C-SS1001	1	4/13/2015	2	µg/kg	2.9 J	6.1	19.0	1.67 U	85.0	470	320	690	350	200	560	85.0	830	15.0	300	15.0	380	920
				MRS03-APN32404561C-SS2001	2	4/13/2015		µg/kg	16.0	24.0	110	1.67 U	120	730	430	1,000	460	300	1,000	130	1,200	42.0	400	67.0	650	1,500
				MRS03-APN32404561C-SS3001	3	4/13/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	7.8	2.3 J	4.4 J	5.7	15.0	10.0	5.1	6.6	1.67 U	13.0	1.9 J	2.3 J	12.0
				MRS03-APN32404561C-SS3002	3	4/13/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	6.3	1.7 J	2 J	4.9 J	14.0	7.5	1.67 U	3.6 J	1.67 U	11.0	1.67 U	1.3 J	8.2
				MRS03-APN32404561C-SS3003	3	4/13/2015		µg/kg	1.67 U	1.67 U	3.1 J	1.67 U	19.0	81.0	51.0	110	56.0	41.0	96.0	16.0	170	5.2	56.0	3.4 J	83.0	160
				MRS03-APN32404561C-SS4001	4	4/13/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	4.1 J	16.0	8.8	20.0	12.0	18.0	18.0	7.2	25.0	3.4 J	18.0	1.67 U	12.0	27.0
				MRS03-APN32404561C-SS4002	4	4/13/2015		µg/kg	1 J	3.1 J	1.2 J	9.3	1.8 J	5.7	1.4 J	2.5 J	4.3 J	14.0	6.4	1.67 U	2.4 J	3.1 J	11.0	2.4 J	1.5 J	6.7
				MRS03-APN32404561C-SS4003	4	4/13/2015		µg/kg	1.67 U	3.1 J	3.2 J	1.67 U	4.3 J	21.0	9.7	21.0	13.0	21.0	31.0	6.9	29.0	3.3 J	20.0	4.1 J	17.0	40.0
15	32404570	3883	E. Devlin Ave	MRS03-APN32404570-SS001	0	12/4/2014	1	µg/kg	3.5 J	5.5	11.0	1.67 U	30.0	260	290	430	1.67 U	76.0	400	54.0	450	3.7 J	190	11.0	170	530
16	32404571	3887	E. Devlin Ave	MRS03-APN32404571-SS001	0	4/9/2015	1	µg/kg	1.7 J	5.0	3.5 J	1.67 U	8.8	64.0	51.0	110	56.0	47.0	98.0	1.67 U	100	3.9 J	55.0	6.0	40.0	120
				MRS03-APN32404571-SS002	0	7/21/2016		µg/kg	2.4 J	4.5 J	2.2 J	1.67 U	7.8	71.0	36.0	93.0	39.0	18.0	30.0	25.0	73.0	1.67 U	41.0	3.8 J	28.0	71.0
				MRS03-APN32404571-SS003	0	7/21/2016		µg/kg	2.6 J	4 J	3.7 J	1.67 U	9.1	88.0	45.0	98.0	52.0	37.0	47.0	28.0	99.0	1.8 J	55.0	4.5 J	43.0	100
17	32404572	3895	E. Devlin Ave	MRS03-APN32404572-SS001	0	11/5/2015	1	µg/kg	1.67 U	1.67 U	1.8 J	1.67 U	5.6	43.0	41.0	52.0	37.0	27.0	53.0	9.3	76.0	1.67 U	29.0	1.9 J	28.0	73.0
				MRS03-APN32404572-SS002	0	11/5/2015		µg/kg	1.67 U	1.67 U	2.8 J	1.67 U	5.3	72.0	71.0	83.0	64.0	69.0	78.0	17.0	97.0	1.1 J	56.0	2.7 J	33.0	96.0
				MRS03-APN32404572-SS003	0	11/5/2015		µg/kg	1.67 U	1.67 U	1.9 J	1.67 U	4.8 J	40.0	39.0	66.0	63.0	15.0	51.0	19.0	68.0	1.67 U	43.0	2.2 J	26.0	70.0
				MRS03-APN32404572-SS1001	1	4/26/2016	2	µg/kg	1.67 U	1.67 U	5.2	1.67 U	1.67 U	56.0	35.0	74.0	34.0	27.0	72.0	9.4	77.0	1.67 U	31.0	3.1 J	24.0	89.0
				MRS03-APN32404572-SS1002	1	4/26/2016		µg/kg	1.67 U	1.67 U	1.3 J	1.67 U	1.67 U	27.0	24.0	53.0	24.0	10.0	35.0	6.4	40.0	1.67 U	21.0	1.67 U	8.5	41.0
				MRS03-APN32404572-SS1003	1	4/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	15.0	15.0	34.0	14.0	7.0	23.0	4.1 J	26.0	1.67 U	13.0	1.1 J	4 J	27.0
				MRS03-APN32404572-SS2001	2	4/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.5 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	2.5 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
				MRS03-APN32404572-SS2002	2	4/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	2.7 J	3.5 J	15.0	1.67 U	1.67 U	5.4	1.67 U	5.6	1.67 U	1.67 U	1.67 U	1.67 U	5.3
				MRS03-APN32404572-SS2003	2	4/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.5 J	1.67 U	16.0	3.8 J	1.67 U	6.6	1.67 U	6.1	1.67 U	5.0	1.67 U	1.67 U	6.3
18	32404639	3916	E. Ryan Ave	MRS03-APN32404639-SS001	0	4/6/2015	1	µg/kg	3.1 J	6.5	14.0	1.67 U	47.0	420	290	560	300	240	450	79.0	710	7.9	290	15.0	300	740
19	32404640	3910	E. Ryan Ave	MRS03-APN32404640-SS001	0	4/6/2015	1	µg/kg	110	160	550	16.7 U	1,200	8,000	5,700	13,000	6,000	4,200	11,000	1,600	14,000	240	5,100	460	6,200	16,000
20	32404643	3986	E. Ryan Ave	MRS03-APN32404643-SS3001	3	12/11/2014	1	µg/kg	1.67 U	1.67 U	1.3 J	1.67 U	3.1 J	12.0	32.0	53.0	18.0	1.67 U	35.0	1.67 U	44.0	1.67 U	24.0	1.5 J	19.0	42.0
				MRS03-APN32404643-SS3002	3	12/11/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.7 J	1.67 U	14.0	24.0	1.67 U	1.67 U	11.0	1.67 U	21.0	1.67 U	7.4	1.4 J	11.0	18.0
				MRS03-APN32404643-SS3003	3	12/11/2014		µg/kg	1.67 U	1.67 U	1.5 J	1.67 U	4.6 J	11.0	27.0	43.0	11.0	1.67 U	32.0	1.67 U	53.0	1.1 J	17.0	1.1 J	26.0	49.0
				MRS03-APN32404643-SS4001	4	12/11/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	4.6 J	7.7	1.67 U	1.67 U	1.67 U	1.67 U	2.9 J	1.67 U	1.67 U	1.67 U	2.5 J	1.67 U
				MRS03-APN32404643-SS4002	4	12/11/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	2.2 J	3.6 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.1 J	1.67 U
				MRS03-APN32404643-SS4003	4	12/11/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.1 J	1.67 U	13.0	17.0	1.67 U	1.67 U	6.8	1.67 U	17.0	1.67 U	5.4	1.67 U	8.7	14.0

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
21	32404653	3899	E. Hearne Ave	MRS03-APN32404653-SS001	0	4/17/2015	1	µg/kg	33.0	53.0	200	4.5 J	340	3,600	2,500	5,700	2,700	1,700	3,900	700	4,900	62.0	2,400	180	2,200	6,100
				MRS03-APN32404653-SS1001	1	3/8/2016	2	µg/kg	16.7 U	20 J	84.0	43 J	120	910	650	1,200	660	580	1,200	170	1,800	16.7 U	610	48 J	1,000	1,800
				MRS03-APN32404653-SS1002	1	3/8/2016		µg/kg	16.7 U	16.7 U	35 J	16.7 U	9.2 J	420	280	660	290	280	570	110	630	16.7 U	340	35 J	310	720
				MRS03-APN32404653-SS1003	1	3/8/2016		µg/kg	16.7 U	16.7 U	13 J	16.7 U	16.7 U	270	140	410	140	170	250	76.0	310	16.7 U	240	16.7 U	130	330
				MRS03-APN32404653-SS2001	2	3/8/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	150	40 J	240	42 J	96.0	81.0	60.0	120	16.7 U	180	16.7 U	38 J	94.0
				MRS03-APN32404653-SS2002	2	3/8/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	160	55.0	260	54.0	100	110	61.0	140	16.7 U	180	16.7 U	56.0	130
				MRS03-APN32404653-SS2003	2	3/8/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	130	26 J	220	24 J	82.0	50.0	16.7 U	85.0	16.7 U	160	16.7 U	25 J	54.0
22	32404655A(E)	3905	E. Hearne Ave	MRS03-APN32404655A(E)-SS001	0	4/8/2015	1	µg/kg	2.5 J	5.4	7.9	9.3	31.0	240	190	410	200	130	330	52.0	430	4.9 J	180	9.2	170	490
				MRS03-APN32404655A(E)-SS002	0	4/8/2015		µg/kg	2.3 J	5.2	8.3	9.1	28.0	230	190	400	190	140	350	52.0	430	4.6 J	170	9.5	170	480
				MRS03-APN32404655A(E)-SS003	0	4/8/2015		µg/kg	3.1 J	6.3	11.0	1.67 U	34.0	270	220	450	220	160	370	59.0	470	5.8	200	14.0	200	530
				MRS03-APN32404655A(E)-SS1001	1	3/8/2016	2	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	36.0	30.0	63.0	31.0	23.0	41.0	11.0	48.0	1.67 U	37.0	1.67 U	17.0	48.0
				MRS03-APN32404655A(E)-SS1002	1	3/14/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	180	67.0	280	72.0	110	120	68.0	180	16.7 U	190	16.7 U	61.0	150
				MRS03-APN32404655A(E)-SS1003	1	3/14/2016		µg/kg	1.67 U	1.67 U	1.3 J	1.67 U	1.67 U	42.0	31.0	72.0	29.0	30.0	49.0	12.0	70.0	1.67 U	36.0	1.67 U	27.0	68.0
				MRS03-APN32404655A(E)-SS2001	2	3//142016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	16.0	5.0	26.0	5.3	11.0	7.6	1.67 U	14.0	1.67 U	19.0	1.67 U	4.6 J	11.0
				MRS03-APN32404655A(E)-SS2002	2	3/14/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	18.0	6.9	29.0	6.8	11.0	9.0	7.1	17.0	1.67 U	20.0	1.67 U	5.0	13.0
				MRS03-APN32404655A(E)-SS2003	2	3/14/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	19.0	7.9	29.0	7.7	13.0	11.0	7.0	20.0	1.67 U	20.0	1.67 U	6.8	16.0
	32404655A (W)	3905	E. Hearne Ave	MRS03-APN32404655A(W)-SS001	0	4/8/2015	1	µg/kg	2.9 J	5.9	12.0	1.67 U	38.0	330	240	450	250	220	420	65.0	550	6.5	220	11.0	230	610
				MRS03-APN32404655A(W)-SS1001	1	3/14/2015	2	µg/kg	16.7 U	14 J	29 J	49 J	16.7 U	230	110	370	140	180	210	80.0	280	16.7 U	260	16.7 U	120	250
				MRS03-APN32404655A(W)-SS1002	1	3/8/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	270	140	440	140	150	250	83.0	320	16.7 U	250	16.7 U	120	330
				MRS03-APN32404655A(W)-SS1003	1	3/8/2016		µg/kg	16.7 U	10 J	25 J	16.7 U	16.7 U	230	130	380	150	160	210	110	260	16.7 U	240	25 J	110	250
				MRS03-APN32404655A(W)-SS2001	2	3/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	17.0	7.1	29.0	7.6	12.0	10.0	7.3	17.0	1.67 U	20.0	1.67 U	6.1	13.0
				MRS03-APN32404655A(W)-SS2002	2	3/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.4 J	31.0	8.6	43.0	19.0	22.0	21.0	14.0	33.0	1.67 U	30.0	1.67 U	15.0	30.0
				MRS03-APN32404655A(W)-SS2003	2	3/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	18.0	7.0	30.0	7.1	12.0	11.0	7.1	19.0	1.67 U	20.0	1.67 U	6.9	15.0
23	32404686	3870	E. Ryan Ave	MRS03-APN32404686-SS001	0	12/16/2014	1	µg/kg	7.2	11.0	39.0	1.2 J	92.0	840	830	1,100	630	440	1,200	170	1,300	13.0	590	26.0	530	1,500
				MRS03-APN32404686-SS1001	1	4/8/2015	2	µg/kg	1.67 U	3.2 J	2.3 J	1.67 U	6.9	52.0	35.0	61.0	38.0	46.0	68.0	13.0	77.0	3 J	41.0	2.9 J	30.0	90.0
				MRS03-APN32404686-SS1002	1	4/8/2015		µg/kg	1.67 U	3.2 J	2.4 J	1.67 U	8.2	70.0	50.0	91.0	53.0	56.0	90.0	17.0	110	2.9 J	54.0	3 J	41.0	130
				MRS03-APN32404686-SS1003	1	4/8/2015		µg/kg	1.67 U	3.4 J	3.2 J	1.67 U	8.9	75.0	56.0	110	59.0	64.0	100	18.0	120	3.2 J	58.0	3.8 J	45.0	140
				MRS03-APN32404686-SS2001	2	4/8/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	6.2	2.3 J	2 J	5.4	14.0	8.6	1.67 U	4 J	1.67 U	12.0	1.67 U	1.5 J	8.8
				MRS03-APN32404686-SS2002	2	4/8/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.2 J	5.1	1.67 U	1.67 U	3.5 J	12.0	5.1	1.67 U	1.8 J	1.67 U	1.67 U	1.67 U	1.67 U	6.2
				MRS03-APN32404686-SS2003	2	4/8/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	5.3	1.2 J	1.3 J	4.1 J	12.0	6.0	1.67 U	2.6 J	1.67 U	11.0	1.2 J	1.67 U	7.3
24	32404687	3866	E. Ryan Ave	MRS03-APN32404687-SS001	0	4/10/2015	1	µg/kg	6.8	9.5	24.0	1.67 U	59.0	570	420	900	470	300	800	120	970	9.7	410	24.0	420	1,100
				MRS03-APN32404687-SS1001	1	3/15/2016	2	µg/kg	1.67 U	1.67 U	2.6 J	1.67 U	1.67 U	61.0	47.0	100	44.0	38.0	76.0	15.0	100	1.67 U	48.0	3 J	39.0	110
				MRS03-APN32404687-SS1002	1	3/15/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	160	54.0	260	57.0	110	80.0	16.7 U	140	16.7 U	190	16.7 U	43 J	110
				MRS03-APN32404687-SS1003	1	3/15/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	190	78.0	290	75.0	140	120	69.0	180	16.7 U	200	16.7 U	65.0	160
				MRS03-APN32404687-SS2001	2	3/15/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	24.0	11.0	35.0	10.0	15.0	15.0	7.3	29.0	1.67 U	22.0	1.67 U	13.0	25.0
				MRS03-APN32404687-SS2002	2	3/15/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	20.0	8.7	30.0	8.0	14.0	12.0	7.1	22.0	1.67 U	21.0	1.67 U	7.4	18.0
				MRS03-APN32404687-SS2003	2	3/15/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	19.0	8.6	33.0	8.8	12.0	15.0	7.1	22.0	1.67 U	21.0	1.67 U	7.1	19.0
25	32405150	3871	E. Ryan Ave	MRS03-APN32405150-SS001	0	2/10/2017	1	µg/kg	1.4 J	2 J	5.0	0 U	14.0	120	140	220	110	53.0	140	31.0	240	2.9 J	94.0	3.8 J	100	220
				MRS03-APN32405150-SS002	0	2/10/2017		µg/kg	1.9 J	2.6 J	11.0	1.1 J	28.0	170	170	270	120	81.0	180	33.0	370	8.9	93.0	5.2	200	310
				MRS03-APN32405150-SS003	0	2/10/2017		µg/kg	2.2 J	2.9 J	10.0	1.1 J	25.0	170	180	300	120	70.0	190	35.0	350	8.0	110	5.4	180	320
				MRS03-APN32405150-SS1001	1	2/10/2017		µg/kg	0 U	1.3 J	3.1 J	0 U	5.5	45.0	60.0	88.0	24.0	24.0	58.0	0 U	100	1.2 J	42.0	2.4 J	40.0	93.0
				MRS03-APN32405150-SS1002	1	2/10/2017		µg/kg	1.2 J	1.5 J	3.2 J	0 U	5.3	39.0	50.0	74.0	14.0	21.0	49.0	0 U	89.0	1.5 J	32.0	2.3 J	37.0	80.0
				MRS03-APN32405150-SS1003	1	2/10/2017		µg/kg	0 U	2.5 J	4.2 J	1.9 J	5.2	39.0	50.0	77.0	15.0	22.0	51.0	0 U	85.0	4.1 J	38.0	2 J	31.0	79.0
				MRS03-APN32405150-SS2001	2	2/10/2017		µg/kg	0 U	0 U	0 U	0 U	0.88 J	5.4	7.5	12.0	0 U	0 U	0 U	0 U	12.0	0 U	0 U	0 U	4.2 J	12.0
				MRS03-APN32405150-SS2002	2	2/10/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	2.5 J	2.7 J	5.3	0 U	0 U	0 U	0 U	5.6	0 U	0 U	0 U	2.3 J	5.3
				MRS03-APN32405150-SS2003	2	2/10/2017		µg/kg	0 U	1.1 J	1.3 J	0 U	2.2 J	11.0	11.0	18.0	0 U	8.7	0 U	0 U	24.0	0 U	6.8	1.3 J	9.7	21.0
26	32405180A(E)	3950	E. Lum Ave	MRS03-APN32405180A(E)-SS001	0	12/15/2014	1	µg/kg	1.67 U	1.4 J	1.9 J	1.67 U	7.0	49.0	76.0	120	52.0	35.0	96.0	8.6	120	1 J	50.0	3 J	43.0	120
				MRS03-APN32405180A(E)-SS1001	1	7/29/2016	2	µg/kg	1.67 U	1.9 J	5.5	4.4 J	13.0	45.0	12.0	40.0	25.0	25.0	10.0	18.0	36.0	6.3	35.0	3.7 J	18.0	36.0
				MRS03-APN32405180A(E)-SS1002	1	7/29/2016		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	9.7	49.0	13.0	47.0	26.0	25.0	17.0	14.0	44.0	1.4 J	35.0	1.67 U	19.0	49.0
				MRS03-APN32405180A(E)-SS1003	1	7/29/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	9.6	47.0	11.0	44.0	23.0	21.0	12.0	14.0	42.0	1.2 J	33.0	1.67 U	17.0	42.0
				MRS03-APN32405180A(E)-SS2001	2	7/29/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	24.0	1.67 U	14.0	1.67 U	5.2	1.67 U	1.67 U	10.0	1.67 U	16.0	1.67 U	4.3 J	2.7 J
				MRS03-APN32405180A(E)-SS2002	2	7/29/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	25.0	1.67 U	16.0	5.7	6.3	1.67 U	1.67 U	12.0	1.67 U	17.0	1.67 U	5.0	4.7 J
				MRS03-APN32405180A(E)-SS2003	2	7/29/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
	32405180A(W)	3950	E. Lum Ave	MRS03-APN32405180A(W)-SS001	0	12/15/2014	1	µg/kg	2 J	3.7 J	4 J	3.9 J	14.0	76.0	99.0	180	73.0	55.0	220	14.0	250	2.5 J	65.0	7.4	86.0	240
				MRS03-APN32405180A(W)-SS1001	1	11/4/2015		µg/kg	1.67 U	1.67 U	1.3 J	1.67 U	3.4 J	26.0	24.0	34.0	22.0	7.8	35.0	5.9	49.0	1.67 U	17.0	2.5 J	18.0	45.0
				MRS03-APN32405180A(W)-SS2001	2	11/4/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.2 J	3.4 J	1.67 U	4 J	1.67 U	6.3	1.4 J	6.2	1.67 U	3.5 J	1.67 U	2.5 J	5.6
				MRS03-APN32405180A(W)-SS3001	3	11/4/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	2.8 J	3.2 J	2.9 J	3.4 J	1.67 U	5.8	1.1 J	6.8	1.67 U	2.6 J	1.67 U	2.9 J	5.8
				MRS03-APN32405180A(W)-SS4001	4	11/4/2015	2	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.6 J	2.8 J	1.67 U	2.7 J	1.67 U	5.3	1.1 J	5.5	1.67 U	1.9 J	1.67 U	1.9 J	4.8 J
27	32405181	3940	E. Lum Ave	MRS03-APN32405181-SS001	0	7/26/2016	1	µg/kg	1.67 U	1.67 U	2.1 J	1.67 U	14.0	77.0	40.0	99.0	53.0	40.0	63.0	21.0	95.0	1.67 U	65.0	1.67 U	44.0	110
				MRS03-APN32405181-SS002	0	7/26/2016		µg/kg	1.67 U	1.67 U	2.8 J	1.67 U	18.0	97.0	50.0	130	65.0	44.0	84.0	24.0	140	1.67 U	77.0	6.0	66.0	140
				MRS03-APN32405181-SS003	0	7/26/2016		µg/kg	1.67 U	1.67 U	5.2	1.67 U	19.0	110	58.0	140	72.0	45.0	99.0	26.0	160	3.3 J	85.0	8.6	74.0	160

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
28	32405182	3936	E. Lum Ave	MRS03-APN32405182-SS001	0	12/4/2014	1	µg/kg	2.6 J	4.7 J	9.4	1.67 U	53.0	260	240	390	180	110	350	48.0	520	8.5	170	8.5	250	490
				MRS03-APN32405182-SS1001	1	7/29/2016	2	µg/kg	1.67 U	1.67 U	3.8 J	1.67 U	17.0	120	55.0	130	72.0	52.0	89.0	25.0	130	1.8 J	83.0	1.67 U	59.0	160
				MRS03-APN32405182-SS1002	1	7/29/2016		µg/kg	1.67 U	1.67 U	9.0	1.67 U	50.0	230	130	290	140	85.0	210	41.0	390	10.0	160	5.7	240	380
				MRS03-APN32405182-SS1003	1	7/29/2016		µg/kg	1.67 U	1.67 U	2.6 J	1.67 U	13.0	110	72.0	160	98.0	61.0	80.0	30.0	110	1.8	110	3.4 J	41.0	130
				MRS03-APN32405182-SS2001	2	7/29/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	8.7	37.0	2.8 J	34.0	15.0	11.0	4 J	12.0	27.0	1.67 U	25.0	1.67 U	10.0	27.0
				MRS03-APN32405182-SS2002	2	7/29/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	9.5	41.0	5.1	39.0	17.0	13.0	7.2	12.0	34.0	1.67 U	28.0	1.67 U	15.0	34.0
				MRS03-APN32405182-SS2003	2	7/29/2016		µg/kg	1.67 U	1.67 U	1.9 J	1.4 J	10.0	39.0	5.3	36.0	17.0	14.0	5.3	14.0	29.0	2.5 J	28.0	1.7 J	14.0	28.0
29	32405194B(C)	3876	E. Lum Ave	MRS03-APN32405194B(C)-SS001	0	12/15/2014	1	µg/kg	2.1 J	3.8 J	9.4	1.1 J	17.0	190	180	280	150	100	230	33.0	310	3.6 J	140	8.9	110	330
				MRS03-APN32405194B(C)-SS1001	1	6/10/2015	2	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	20.0	16.0	39.0	16.0	1.67 U	1.67 U	2.9 J	32.0	1.67 U	1.67 U	1.9 J	10.0	30.0
				MRS03-APN32405194B(C)-SS1002	1	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	11.0	24.0	11.0	1.67 U	1.67 U	1.67 U	20.0	1.67 U	1.67 U	1.5 J	7.1	18.0
				MRS03-APN32405194B(C)-SS1003	1	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	19.0	16.0	37.0	16.0	1.67 U	1.67 U	4 J	28.0	1.67 U	15.0	1.7 J	10.0	26.0
				MRS03-APN32405194B(C)-SS2001	2	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	9.8	5.0	7.9	5.0	1.67 U	1.67 U	1.67 U	8.8	1.67 U	1.67 U	1.67 U	3.8 J	8.3
				MRS03-APN32405194B(C)-SS2002	2	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	8.7	3.8 J	4.4 J	3.7 J	1.67 U	1.67 U	1.1 J	6.5	1.67 U	1.67 U	1.67 U	2.4 J	6.3
				MRS03-APN32405194B(C)-SS2003	2	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.7 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.3 J	1.67 U	1.67 U	1.67 U	1.3 J	3.1 J
	32405194B(E)	3876	E. Lum Ave	MRS03-APN32405194B(E)-SS001	0	12/15/2014	1	µg/kg	3.7 J	5.1	12.0	1.67 U	34.0	400	440	660	360	230	630	94.0	730	3.5 J	320	13.0	270	790
				MRS03-APN32405194B(E)-SS1001	1	6/10/2015	2	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.3 J	23.0	19.0	45.0	18.0	1.67 U	3.6 J	4.7 J	37.0	1.67 U	18.0	1.6 J	13.0	33.0
				MRS03-APN32405194B(E)-SS1002	1	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	15.0	11.0	16 J	11.0	1.67 U	1.67 U	1.67 U	21.0	1.67 U	11.0	1.4 J	7.1	19.0
				MRS03-APN32405194B(E)-SS1003	1	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.6 J	21.0	16.0	38.0	15.0	1.67 U	1.67 U	3.9 J	32.0	1.67 U	15.0	1.6 J	12.0	28.0
				MRS03-APN32405194B(E)-SS2001	2	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	10.0	5.1	8.2	5.1	1.67 U	1.67 U	1.67 U	8.7	1.67 U	4.8 J	1.2 J	3.5 J	8.3
				MRS03-APN32405194B(E)-SS2002	2	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.4	9.7	5.2	8.4	5.3	1.67 U	1.67 U	1.7 J	8.6	1.67 U	4.8 J	1.8 J	3.7 J	8.2
				MRS03-APN32405194B(E)-SS2003	2	6/10/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	8.4	3.5 J	3.4 J	3.4 J	1.67 U	1.67 U	1.1 J	6.2	1.67 U	3.2 J	1.4 J	2.5 J	5.5
	32405194B(W)	3876	E. Lum Ave	MRS03-APN32405194B(W)-SS001	0	12/15/2014	1	µg/kg	2.7 J	4.3 J	12.0	1.67 U	26.0	320	390	590	320	210	510	80.0	570	4.1 J	270	15.0	190	650
				MRS03-APN32405194B(W)-SS1001	1	6/9/2015	2	µg/kg	1.67 U	1.67 U	1 J	1.67 U	2.5 J	30.0	25.0	38 J	25.0	6.6 J	10.0	6.5	46.0	1.67 U	24.0	1.7 J	17.0	43.0
				MRS03-APN32405194B(W)-SS1002	1	6/9/2015		µg/kg	1.67 U	1.67 U	1.8 J	1.67 U	4.6 J	47.0	39.0	63 J	39.0	27 J	35.0	9.8	74.0	1.67 U	38.0	2.5 J	24.0	71.0
				MRS03-APN32405194B(W)-SS1003	1	6/9/2015		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	3.6 J	42.0	33.0	54 J	33.0	21 J	24.0	8.5	60.0	1.67 U	33.0	2.1 J	20.0	59.0
				MRS03-APN32405194B(W)-SS2001	2	6/9/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	7.0	14.0	7.3	1.67 U	1.67 U	2 J	12.0	1.67 U	6.6	1.1 J	4.4 J	12.0
				MRS03-APN32405194B(W)-SS2002	2	6/9/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	8.8	18.0	8.5	1.67 U	1.67 U	1.67 U	14.0	1.67 U	1.67 U	1.2 J	5.0	14.0
				MRS03-APN32405194B(W)-SS2003	2	6/9/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	8.7	17.0	8.5	1.67 U	1.67 U	1.67 U	14.0	1.67 U	8.4	1.4 J	5.2	14.0
30	32405205A(E)	3925	E. Ryan Ave	MRS03-APN32405205A(E)-SS001	0	4/16/2015	1	µg/kg	1.67 U	9.3	5.5	1.67 U	15.0	160	120	200	140	90.0	170	33.0	230	4.3 J	130	13.0	96.0	270
				MRS03-APN32405205A(E)-SS002	0	4/16/2015		µg/kg	5.2	29.0	8.2	1.67 U	18.0	210	160	300	170	97.0	220	44.0	280	5.1	160	35.0	120	350
				MRS03-APN32405205A(E)-SS003	0	4/16/2015		µg/kg	1.4 J	13.0	6.9	1.67 U	20.0	170	150	240	160	110	200	39.0	280	4.9 J	140	16.0	130	300
				MRS03-APN32405205A(E)-SS1001	1	2/7/2017	2	µg/kg	3.7 J	9.4	3.8 J	0 U	15.0	120	120	190	110	48.0	130	27.0	210	1.6 J	82.0	6.2	82.0	200
				MRS03-APN32405205A(E)-SS1002	1	2/7/2017		µg/kg	1.6 J	3.9 J	2.2 J	0 U	5.5	48.0	55.0	85.0	42.0	18.0	59.0	11.0	86.0	0 U	33.0	4.3 J	30.0	89.0
				MRS03-APN32405205A(E)-SS1003	1	2/7/2017		µg/kg	1.2 J	2.4 J	3.9 J	0 U	21.0	110	110	200	82.0	47.0	120	22.0	220	2.6 J	58.0	3.7 J	98.0	190
				MRS03-APN32405205A(E)-SS2001	2	2/7/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	9.2	12.0	17.0	11.0	4 J	12.0	0 U	16.0	0 U	7.8	0 U	5.9	16.0
				MRS03-APN32405205A(E)-SS2002	2	2/7/2017		µg/kg	0 U	1.6 J	0 U	0 U	0.83 J	5.9	0 U	8.6	5.6	3.4 J	7.9	0 U	10.0	0 U	0 U	0 U	4.5 J	10.0
				MRS03-APN32405205A(E)-SS2003	2	2/7/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	5.9	5.4	8.4	6.2	2.9 J	7.3	0 U	9.7	0 U	5.0	0 U	4.1 J	9.7
	32405205A(W)	3925	E. Ryan Ave	MRS03-APN32405205A(W)-SS001	0	4/16/2015	1	µg/kg	1.67 U	3.7 J	9.6	1.67 U	29.0	210	140	310	160	100	240	44.0	320	4.7 J	150	15.0	150	340
				MRS03-APN32405205A(W)-SS002	0	4/16/2015		µg/kg	1.67 U	2.3 J	5.8	1.67 U	19.0	140	110	230	120	71.0	160	32.0	230	2.9 J	110	8.5	100	250
				MRS03-APN32405205A(W)-SS003	0	4/16/2015		µg/kg	1.67 U	2.9 J	11.0	1.67 U	33.0	230	160	350	170	110	260	46.0	350	5.4	160	13.0	170	390
				MRS03-APN32405205A(W)-SS1001	1	2/8/2017	2	µg/kg	1.2 J	2.3 J	4.7 J	0 U	14.0	110	110	160	91.0	45.0	120	25.0	170	2 J	79.0	5.2	73.0	190
				MRS03-APN32405205A(W)-SS1002	1	2/8/2017		µg/kg	1.6 J	2.5 J	7.0	0 U	20.0	170	180	250	150	74.0	180	40.0	260	2.7 J	120	5.9	110	290
				MRS03-APN32405205A(W)-SS1003	1	2/8/2017		µg/kg	7.1	13.0	28.0	0 U	43.0	380	380	560	300	140	430	86.0	560	11.0	260	41.0	230	640
				MRS03-APN32405205A(W)-SS2001	2	2/8/2017		µg/kg	0 U	0 U	2.4 J	0 U	4.7 J	51.0	39.0	84.0	44.0	24.0	66.0	13.0	83.0	0 U	33.0	1.5 J	30.0	83.0
				MRS03-APN32405205A(W)-SS2002	2	2/8/2017		µg/kg	1.1 J	2.1 J	6.3	0 U	7.7	64.0	46.0	100	49.0	29.0	78.0	15.0	94.0	2.8 J	42.0	3.7 J	41.0	100
				MRS03-APN32405205A(W)-SS2003	2	2/8/2017		µg/kg	1 J	1.6 J	5.1	0 U	6.9	110	48.0	210	120	49.0	130	32.0	130	1.6 J	100	4 J	40.0	150
31	32405208	3939	E. Ryan Ave	MRS03-APN32405208-SS001	0	4/10/2015	1	µg/kg	3.8 J	9.5	1.67 U	1.67 U	6.4	29.0	30.0	57.0	32.0	24.0	55.0	1.67 U	53.0	1.67 U	32.0	13.0	30.0	62.0
				MRS03-APN32405208-SS002	0	4/10/2015		µg/kg	4.4 J	11.0	1.67 U	1.67 U	9.7	57.0	46.0	73.0	46.0	47.0	66.0	1.67 U	87.0	1.67 U	1.67 U	15.0	44.0	93.0
				MRS03-APN32405208-SS003	0	410/2015		µg/kg	3.6 J	10.0	1.67 U	1.67 U	6.5	41.0	34.0	64.0	36.0	29.0	53.0	1.67 U	61.0	1.67 U	1.67 U	13.0	32.0	71.0
32	32405270	3980	E. Thompson Ave	MRS03-APN32405270-SS001	0	1/26/2016	1	µg/kg	1.67 U	8.6	1.5 J	1.67 U	4.5 J	70.0	48.0	87.0	59.0	59.0	93.0	22.0	110	3 J	69.0	4.2 J	40.0	110
				MRS03-APN32405270-SS002	0	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	50.0	39.0	63.0	37.0	52.0	67.0	17.0	80.0	2.4 J	48.0	1.67 U	25.0	82.0
				MRS03-APN32405270-SS003	0	1/26/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	230	91.0	200	120	290	190	100	270	16.7 U	270	16.7 U	50.0	170
				MRS03-APN32405270-SS1001	1	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	33.0	28.0	40.0	34.0	37.0	22.0	26.0	38.0	1.67 U	44.0	1.67 U	6.4	33.0
				MRS03-APN32405270-SS1002	1	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	29.0	27.0	37.0	32.0	36.0	17.0	26.0	37.0	1.67 U	43.0	1.67 U	7.0	30.0
				MRS03-APN32405270-SS1003	1	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	13.0	72.0	49.0	78.0	49.0	57.0	64.0	30.0	74.0	1.67 U	60.0	1.67 U	15.0	75.0
				MRS03-APN32405270-SS2001	2	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	13.0	98.0	64.0	110	60.0	68.0	87.0	33.0	75.0	1.67 U	70.0	1.67 U	7.3	83.0
				MRS03-APN32405270-SS2002	2	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	19.0	1.67 U	24.0	1.67 U	28.0	3.9 J	1.67 U	23.0	1.67 U	1.67 U	1.67 U	1.67 U	16.0
				MRS03-APN32405270-SS2003	2	1/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	30.0	25.0	35.0	32.0	34.0	17.0	28.0	34.0	1.67 U	44.0	1.67 U	4.3 J	30.0

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
33	32405272A (E)	3970	E. Thompson Ave	MRS03-APN32405272A(E)-SS001	0	1/26/2016	1	µg/kg	1.67 U	8.6	2.2 J	1.67 U	11.0	99.0	58.0	120	51.0	62.0	120	22.0	170	3.3 J	71.0	7.4	80.0	170
				MRS03-APN32405272A(E)-SS002	0	1/26/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	230	80.0	150	89.0	310	190	97.0	310	16.7 U	260	16.7 U	110	200
				MRS03-APN32405272A(E)-SS003	0	1/26/2016		µg/kg	1.67 U	8.5	1.8 J	1.67 U	13.0	110	71.0	150	68.0	77.0	130	27.0	180	3.7 J	87.0	5.5	83.0	170
				MRS03-APN32405272A(E)-SS1001	1	3/9/2016	2	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	15.0	3.9 J	24.0	3.8 J	9.7	6.2	1.67 U	11.0	1.67 U	18.0	1.67 U	3.3 J	7.8
				MRS03-APN32405272A(E)-SS1002	1	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	19.0	7.5	30.0	7.2	11.0	11.0	1.67 U	20.0	1.67 U	20.0	1.67 U	7.7	16.0
				MRS03-APN32405272A(E)-SS1003	1	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	17.0	6.1	28.0	5.8	11.0	9.2	1.67 U	17.0	1.67 U	19.0	1.67 U	6.0	13.0
				MRS03-APN32405272A(E)-SS2001	2	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	12.0	1.8 J	21.0	1.8 J	7.6	2.7 J	1.67 U	7.9	1.67 U	16.0	1.67 U	2.1 J	3.5 J
				MRS03-APN32405272A(E)-SS2002	2	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	14.0	3 J	23.0	2.9 J	8.5	5.5	1.67 U	10.0	1.67 U	17.0	1.67 U	3.1 J	6.9
				MRS03-APN32405272A(E)-SS2003	2	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	2.1 J	21.0	2 J	8.4	3.3 J	1.67 U	7.8	1.67 U	15.0	1.67 U	1.9 J	4.1 J
	32405272A (W)	3970	E. Thompson Ave	MRS03-APN32405272A(W)-SS001	0	1/28/2016	1	µg/kg	1.67 U	8.0	4.2 J	1.67 U	12.0	86.0	85.0	110	70.0	67.0	100	19.0	140	1.5 J	57.0	6.8	66.0	150
				MRS03-APN32405272A(W)-SS002	0	1/28/2016		µg/kg	1.67 U	8.0	4.3 J	1.67 U	11.0	87.0	81.0	130	60.0	47.0	100	17.0	190	1.1 J	42.0	6.7	65.0	130
				MRS03-APN32405272A(W)-SS003	0	1/28/2016		µg/kg	1.67 U	8.7	3.7 J	1.67 U	12.0	85.0	84.0	130	63.0	49.0	100	17.0	170	1.5 J	52.0	7.3	69.0	160
				MRS03-APN32405272A(W)-SS1001	1	3/9/2016	2	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	130	28 J	230	27 J	80.0	38 J	16.7 U	76.0	16.7 U	170	16.7 U	18 J	37 J
				MRS03-APN32405272A(W)-SS1002	1	3/9/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	130	29 J	230	29 J	88.0	45 J	16.7 U	86.0	16.7 U	170	16.7 U	29 J	47 J
				MRS03-APN32405272A(W)-SS1003	1	3/9/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	120	21 J	210	21 J	83.0	33 J	16.7 U	76.0	16.7 U	16.7 U	16.7 U	18 J	36 J
				MRS03-APN32405272A(W)-SS2001	2	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	15.0	3.6 J	23.0	3.1 J	9.7	6.4	1.67 U	13.0	1.67 U	17.0	1.67 U	4.9 J	9.3
				MRS03-APN32405272A(W)-SS2002	2	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	19.0	7.1	29.0	6.7	11.0	11.0	1.67 U	18.0	1.67 U	19.0	1.67 U	5.5	15.0
				MRS03-APN32405272A(W)-SS2003	2	3/9/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	18.0	5.6	27.0	5.1	11.0	9.3	1.67 U	18.0	1.67 U	19.0	1.67 U	5.5	15.0
34	32405273	3966	E. Thompson Ave	MRS03-APN32405273-SS1001	1	6/11/2015	1	µg/kg	1 J	1.2 J	2.3 J	1.67 U	4 J	27.0	17.0	39.0	15.0	1.67 U	1.67 U	5.4	36.0	1.3 J	14.0	2.6 J	18.0	34.0
				MRS03-APN32405273-SS1002	1	6/11/2015		µg/kg	1.67 U	1.67 U	1 J	1.67 U	3 J	30.0	21.0	53.0	21.0	1.67 U	3.9 J	5.3	39.0	1.67 U	20.0	1.5 J	15.0	37.0
				MRS03-APN32405273-SS1003	1	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.8 J	26.0	17.0	43.0	17.0	1.67 U	1.67 U	4.9 J	37.0	1.67 U	16.0	1.5 J	15.0	33.0
				MRS03-APN32405273-SS2001	2	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	6.4	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.8 J	1.67 U	1.67 U	1.67 U	1.67 U	1.5 J
				MRS03-APN32405273-SS2002	2	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	5.6	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.8 J	1.67 U	1.67 U	1.67 U	1.1 J	1.6 J
				MRS03-APN32405273-SS2003	2	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	6.3	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.5 J	1.67 U	1.67 U	1.2 J	1.67 U	1.6 J
35	32405274	3960	E. Thompson Ave	MRS03-APN32405274-SS001	0	12/4/2014	1	µg/kg	2.2 J	3.9 J	6.6	1.67 U	20.0	180	190	250	150	140	250	35.0	340	2.8 J	130	8.2	130	350 J
				MRS03-APN32405274-SS1001	1	6/11/2015	2	µg/kg	1.67 U	1.67 U	2.0	1.67 U	10.0	68.0	45.0	120	42.0	1.67 U	41.0	11.0	110	1.67 U	41.0	2.8 J	51.0	89.0
				MRS03-APN32405274-SS1002	1	6/11/2015		µg/kg	2.1 J	2.8 J	12.0	1.67 U	39.0	260	190	350 J	180	220 J	300	49.0	450	5.1	180	7.4	210	370
				MRS03-APN32405274-SS1003	1	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.3 J	27.0	16.0	24 J	15.0	1.67 U	1.67 U	3.2 J	33.0	1.67 U	16.0	1.2 J	12.0	29.0
				MRS03-APN32405274-SS2001	2	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	7.3	1.67 U	1.67 U	1.5 J	1.67 U	1.67 U	1.67 U	2.7 J	1.67 U	1.67 U	1.3 J	1.2 J	2.4 J
				MRS03-APN32405274-SS2002	2	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
				MRS03-APN32405274-SS2003	2	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	8.6	2.7 J	2.3 J	2.8 J	1.67 U	1.67 U	1.67 U	4.8 J	1.67 U	2.8 J	1.7 J	2.5 J	5.3
36	32405276A (E)	3950	E. Thompson Ave	MRS03-APN32405276A(E)-SS001	0	12/5/2014	1	µg/kg	11.0	19.0	59.0	1.8 J	170	1,500	1,400	1,800	980	790	1,900	280	2,300	25.0	1,000	58.0	860	2,400
				MRS03-APN32405276A(E)-SS1001	1	6/11/2015	2	µg/kg	4.6 J	8.5	28.0	1.67 U	76.0	660	440	890	390	440	700	110	930	13.0	420	24.0	380	850
				MRS03-APN32405276A(E)-SS2001	1	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.6 J	16.0	7.8	17.0	7.9	1.67 U	1.67 U	2.3 J	17.0	1.67 U	8.3	1.2 J	7.2	14.0
				MRS03-APN32405276A(E)-SS3001	1	6/11/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	16.0	7.9	12 J	8.3	1.67 U	1.67 U	1.8 J	16.0	1.67 U	9.3	1.6 J	5.8	14.0
	32405276A (W)	3950	E. Thompson Ave	MRS03-APN32405276A(W)-SS001	0	12/5/2014	1	µg/kg	44.0	74.0	220	5.6	620	7,100	6,400	8,200	3,300	3,600	7,700	920	9,400	90.0	4,600	210	2,800	10,000
				MRS03-APN32405276A(W)-SS1001	1	6/11/2015	2	µg/kg	15.0	23.0	79.0	1.5 J	250	2,500	1,500	3100 J	1,400	1,400 J	2,500	380	3,100	34.0	1,400	71.0	1,400	2,900
				MRS03-APN32405276A(W)-SS2001	1	6/11/2015		µg/kg	2.1 J	3.9 J	14.0	1.67 U	38.0	350	250	480 J	220	280 J	390	63.0	500	9.5	230	13.0	210	470
				MRS03-APN32405276A(W)-SS3001	1	6/11/2015		µg/kg	1.67 U	1.67 U	1.6 J	1.67 U	7.9	53.0	33.0	60 J	32.0	19 J	25.0	6.6	90.0	1.67 U	33.0	2.1 J	43.0	70.0
37	32405287	3896	E. Thompson Ave	MRS03-APN32405287-SS001	0	11/3/2015	1	µg/kg	1.6 J	1.67 U	5.4	1.67 U	24.0	190	160	250	120	110	180	34.0	320	2 J	100	4.8 J	130	290
				MRS03-APN32405287-SS002	0	11/3/2015		µg/kg	1.67 U	1.67 U	3.7 J	1.67 U	14.0	110	110	170	96.0	75.0	160	25.0	210	1.1 J	78.0	3.8 J	72.0	200
				MRS03-APN32405287-SS003	0	11/3/2015		µg/kg	1.67 U	1.67 U	3.8 J	1.67 U	13.0	97.0	98.0	150	77.0	67.0	140	21.0	190	1.3 J	62.0	3.4 J	68.0	190
				MRS03-APN32405287-SS1001	1	4/27/2016	2	µg/kg	1.67 U	1.67 U	1.4 J	1.67 U	1.67 U	40.0	31.0	68.0	32.0	17.0	53.0	8.5	59.0	1.67 U	28.0	1.67 U	13.0	64.0
				MRS03-APN32405287-SS1002	1	4/27/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	53.0	39.0	87.0	35.0	24.0	66.0	10.0	71.0	1.67 U	32.0	1.67 U	16.0	76.0
				MRS03-APN32405287-SS1003	1	4/27/2016		µg/kg	1.67 U	1.67 U	1.5 J	1.67 U	1.67 U	32.0	27.0	58.0	26.0	15.0	47.0	7.3	55.0	1.67 U	25.0	1.67 U	13.0	57.0
				MRS03-APN32405287-SS2001	2	4/27/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.4 J	1.67 U	17.0	3.2 J	1.67 U	6.2	1.67 U	6.2	1.67 U	1.67 U	1.67 U	1.67 U	6.7
				MRS03-APN32405287-SS2002	2	4/27/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.6 J	4.1 J	16.0	3.5 J	1.67 U	6.9	1.67 U	6.6	1.67 U	5.0	1.67 U	1.67 U	7.0
				MRS03-APN32405287-SS2003	2	4/27/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3.8 J	1.67 U	18.0	3.6 J	1.67 U	7.5	1.67 U	7.3	1.67 U	1.67 U	1.67 U	1.67 U	7.8
38	32405288	3890	E. Thompson Ave	MRS03-APN32405288-SS001	0	11/3/2015	1	µg/kg	1.2 J	1.67 U	2.3 J	1.67 U	8.0	51.0	55.0	91.0	41.0	21.0	87.0	12.0	130	1.67 U	33.0	3.3 J	48.0	120
				MRS03-APN32405288-SS002	0	11/3/2015		µg/kg	1.67 U	1.67 U	2.4 J	1.67 U	9.0	52.0	58 J	96.0	43.0	24.0	91.0	13.0	140	1.67 U	32.0	3.1 J	52.0	130
				MRS03-APN32405288-SS003	0	11/3/2015		µg/kg	1.67 U	1.67 U	2.2 J	1.67 U	9.3	68.0	59.0	97.0	44.0	24.0	76.0	12.0	130	1.1 J	34.0	3.4 J	46.0	120
39	32405295	3887	E. Lum Ave	MRS03-APN32405295-SS001	0	11/3/2015	1	µg/kg	2.2 J	1.67 U	6.6	0.95 J	20.0	160	140	240	120	86.0	210	34.0	290	2.6 J	100	5.9	110	280
				MRS03-APN32405295-SS1001	1	4/6/2016	2	µg/kg	1.67 U	1.67 U	1.1 J	1.67 U	1.67 U	29.0	20.0	46.0	20.0	11.0	31.0	5.6	42.0	1.67 U	19.0	1.3 J	12.0	43.0
				MRS03-APN32405295-SS1002	1	4/6/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	50.0	44 J	180	37 J	16.7 U	69.0	16.7 U	76.0	16.7 U	16.7 U	16.7 U	16.7 U	83.0
				MRS03-APN32405295-SS1003	1	4/6/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	39 J	36 J	170	31 J	16.7 U	55.0	16.7 U	54.0	16.7 U	16.7 U	16.7 U	16.7 U	60.0
				MRS03-APN32405295-SS2001	2	4/6/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	41.0	48.0	98.0	52.0	33.0	56.0	13.0	36.0	1.67 U	41.0	1.67 U	3 J	42.0
				MRS03-APN32405295-SS2002	2	4/6/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	2.2 J	2.4 J	14.0	1.7 J	1.67 U	2.8 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U
				MRS03-APN32405295-SS2003	2	4/6/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	3 J	2.8 J	15.0	2.1 J	1.67 U	3.8 J	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	4.5 J

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
40	32405296	3895	E. Lum Ave	MRS03-APN32405296-SS001	0	12/5/2014	1	µg/kg	3.9 J	5.7	16.0	1.1 J	51.0	420	420	560	330	330	560	87.0	760	6.6	310	16.0	300	770
				MRS03-APN32405296-SS1001	1	6/8/2015		µg/kg	2.3 J	4.1 J	14.0	1.67 U	45.0	310	250	440 J	240	220 J	490	62.0	600	7.0	230	12.0	270	540
				MRS03-APN32405296-SS1002	1	6/8/2015	2	µg/kg	1.67 U	1.67 U	2.2 J	1.67 U	6.6	67.0	57.0	100 J	55.0	41 J	67.0	14.0	120	1.67 U	51.0	2.9 J	45.0	100
				MRS03-APN32405296-SS1003	1	6/8/2015		µg/kg	1.67 U	1.67 U	1.8 J	1.67 U	5.0	55.0	42.0	76 J	41.0	31 J	48.0	11.0	86.0	1.67 U	40.0	2.6 J	30.0	80.0
				MRS03-APN32405296-SS2001	2	6/8/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	12.0	7.4	13.0	1.67 U	1.67 U	1.67 U	1.67 U	12.0	1.67 U	6.5	1.67 U	4.7 J	12.0
				MRS03-APN32405296-SS2002	2	6/8/2015		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	2 J	20.0	12.0	28.0	11.0	1.67 U	1.67 U	2.6 J	27.0	1.67 U	11.0	1.7 J	13.0	24.0
				MRS03-APN32405296-SS2003	2	6/8/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	12.0	5.8	12.0	6.0	1.67 U	1.67 U	1.67 U	12.0	1.67 U	1.67 U	1.67 U	4.4 J	10.0
41	32405297	3899	E. Lum Ave	MRS03-APN32405297-SS001	0	12/5/2014	1	µg/kg	11.0	17.0	46.0	1.6 J	150	1,200	1,100	1,500	820	580	1,500	220	1,900	18.0	760	46.0	810	2,000
				MRS03-APN32405297-SS1001	1	7/27/2016	2	µg/kg	1.67 U	11.0	45.0	1.67 U	190	1,400	880	1,700	940	650	1,400	230	1,900	32.0	1,000	58.0	810	2,300
				MRS03-APN32405297-SS1002	1	7/27/2016		µg/kg	1.67 U	1.67 U	30.0	1.67 U	160	990	620	1,200	670	430	900	160	1,600	25.0	710	1.67 U	750	1,600
				MRS03-APN32405297-SS1003	1	7/27/2016		µg/kg	1.67 U	5.3	26.0	1.67 U	91.0	770	520	1,000	580	380	740	140	1,000	18.0	600	30.0	400	1,200
				MRS03-APN32405297-SS2001	2	7/28/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	11.0	55.0	16.0	54.0	29.0	25.0	19.0	14.0	52.0	1.67 U	38.0	1.67 U	23.0	54.0
				MRS03-APN32405297-SS2002	2	7/28/2016		µg/kg	1.67 U	1.67 U	3.5 J	1 J	16.0	96.0	54.0	130	68.0	51.0	85.0	24.0	120	2.8 J	76.0	3.7 J	55.0	140
				MRS03-APN32405297-SS2003	2	7/28/2016		µg/kg	1.67 U	1.67 U	3.6 J	1.67 U	17.0	130	74.0	180	88.0	58.0	110	28.0	150	2.4 J	96.0	4.7 J	64.0	180
42	32405306	3945	E. Lum Ave	MRS03-APN32405306-SS001	0	12/10/2014	1	µg/kg	4.5 J	7.0	20.0	1.4 J	52.0	470	480	730	370	180	660	98.0	810	8.5	320	18.0	330	860
				MRS03-APN32405306-SS1001	1	3/16/2016	2	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	260	130	390	130	170	200	77.0	300	16.7 U	230	16.7 U	110	280
				MRS03-APN32405306-SS1002	1	3/16/2016		µg/kg	16.7 U	16.7 U	20 J	16.7 U	13 J	570	380	850	350	360	600	130	840	16.7 U	390	20 J	310	790
				MRS03-APN32405306-SS1003	1	3/16/2016		µg/kg	14 J	23 J	54.0	16.7 U	61.0	670	400	890	450	370	600	140	940	16.7 U	400	75.0	500	1,000
				MRS03-APN32405306-SS2001	2	3/16/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	150	37 J	180	37 J	170	65.0	16.7 U	110	16.7 U	110	16.7 U	41 J	80.0
				MRS03-APN32405306-SS2002	2	3/16/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	27.0	15.0	37.0	16.0	25.0	23.0	1.67 U	34.0	1.67 U	20.0	1.67 U	14.0	33.0
				MRS03-APN32405306-SS2003	2	3/16/2016		µg/kg	1.67 U	1.1 J	1.6 J	1.67 U	1.67 U	31.0	16.0	43.0	17.0	25.0	30.0	7.7	38.0	1.67 U	22.0	1.6 J	15.0	43.0
43	32405308A(E)	3955	E. Lum Ave	MRS03-APN32405308A(E)-SS001	0	11/3/2015	1	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	10 J	85.0	84.0	88.0	88.0	16.7 U	120	28 J	160	16.7 U	68.0	11 J	61.0	150
				MRS03-APN32405308A(E)-SS1001	1	7/26/2016	2	µg/kg	1.67 U	1.67 U	1.1 J	1.67 U	10.0	54.0	16.0	52.0	28.0	26.0	19.0	14.0	50.0	1.67 U	38.0	1.8 J	20.0	54.0
				MRS03-APN32405308A(E)-SS1002	1	7/26/2016		µg/kg	1.67 U	1.67 U	1.9 J	1.67 U	11.0	61.0	18.0	57.0	32.0	31.0	30.0	15.0	58.0	1.67 U	43.0	1.67 U	23.0	67.0
				MRS03-APN32405308A(E)-SS1003	1	7/26/2016		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	16.0	67.0	26.0	75.0	36.0	33.0	43.0	17.0	94.0	1 J	46.0	1.67 U	51.0	90.0
				MRS03-APN32405308A(E)-SS2001	2	7/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	24.0	1.67 U	15.0	5.3	5.3	1.67 U	1.67 U	11.0	1.67 U	1.67 U	1.67 U	4.5 J	3.3 J
				MRS03-APN32405308A(E)-SS2002	2	7/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	24.0	1.67 U	14.0	5.1	5.5	1.67 U	1.67 U	10.0	1.67 U	16.0	1.67 U	1.67 U	1.67 U
				MRS03-APN32405308A(E)-SS2003	2	7/26/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	4 J	1.67 U
	32405308A(W)	3955	E. Lum Ave	MRS03-APN32405308A(W)-SS001	0	11/3/2015	1	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	29 J	160	140	170	120	16.7 U	210	39 J	300	16.7 U	99.0	16.7 U	110	280
				MRS03-APN32405308A(W)-SS1001	1	2/7/2017	2	µg/kg	0 U	1.5 J	1.6 J	0 U	4.8 J	44.0	46.0	77.0	35.0	18.0	53.0	10.0	85.0	0 U	28.0	2.3 J	32.0	77.0
				MRS03-APN32405308A(W)-SS1002	1	2/7/2017		µg/kg	0 U	0 U	1.8 J	0 U	3.9 J	40.0	41.0	72.0	32.0	14.0	45.0	8.4	72.0	0 U	23.0	1.9 J	28.0	68.0
				MRS03-APN32405308A(W)-SS1003	1	2/7/2017		µg/kg	0 U	1.9 J	1.5 J	0 U	3 J	33.0	38.0	61.0	33.0	13.0	39.0	9.5	61.0	0 U	28.0	2.2 J	21.0	58.0
				MRS03-APN32405308A(W)-SS2001	2	2/7/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	5.0	0 U	6.2	3.9 J	0 U	5.4	0 U	9.3	0 U	0 U	0 U	4.3 J	8.1
				MRS03-APN32405308A(W)-SS2002	2	2/7/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	3.5 J	0 U	4.4 J	0 U	1.7 J	0 U	0 U	5.8	0 U	0 U	0 U	2.5 J	5.8
				MRS03-APN32405308A(W)-SS2003	2	2/7/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	3.6 J	0 U	4.7 J	3.4 J	2.5 J	0 U	0 U	5.9	0 U	0 U	0 U	2.5 J	5.8
44	32405309	3959	E. Lum Ave	MRS03-APN32405309-SS001	0	11/6/2015	1	µg/kg	1 J	1.67 U	4.3 J	1.67 U	27.0	150	100	170	75.0	66.0	150	24.0	270	2.4 J	74.0	3.9 J	130	240
				MRS03-APN32405309-SS002	0	11/6/2015		µg/kg	1.67 U	1.67 U	1.8 J	1.67 U	6.2	51.0	38.0	67.0	31.0	30.0	54.0	9.2	88.0	1.67 U	29.0	2.1 J	34.0	82.0
				MRS03-APN32405309-SS003	0	11/6/2015		µg/kg	1.67 U	1.67 U	2 J	1.67 U	6.6	54.0	45.0	70.0	35.0	29.0	60.0	11.0	97.0	1.67 U	31.0	2.3 J	37.0	92.0
45	32405310	3965	E. Lum Ave	MRS03-APN32405310-SS001	0	11/6/2015	1	µg/kg	2 J	1.67 U	2.9 J	1.67 U	10.0	59.0	56.0	72.0	47.0	49.0	82.0	13.0	120	1.67 U	39.0	4.1 J	48.0	110
				MRS03-APN32405310-SS002	0	11/6/2015		µg/kg	1 J	1.67 U	1.8 J	1.67 U	5.0	37.0	36.0	58.0	31.0	15.0	56.0	8.2	73.0	1.67 U	27.0	4.6 J	28.0	69.0
				MRS03-APN32405310-SS003	0	11/6/2015		µg/kg	1.4 J	1.67 U	5.0	1.67 U	15.0	82.0	68.0	110	54.0	45.0	110	16.0	160	1.8 J	49.0	6.6	67.0	140
46	32436014	3954	E. Lass Ave	MRS03-APN32436014-SS001	0	12/3/2014	1	µg/kg	34.0	55.0	190	2.1 J	670	3,700	2,900	3,500	2,300	1,900	4,000	580	6,000	150	2,300	170	2,900	5,600
				MRS03-APN32436014-SS1001	1	4/17/2016	2	µg/kg	16.7 U	16.7 U	10 J	16.7 U	16.7 U	250	170	390	170	110	280	16.7 U	390	16.7 U	150	13 J	130	400
				MRS03-APN32436014-SS1002	1	4/17/2016		µg/kg	16.7 U	16.7 U	16 J	16.7 U	16.7 U	400	310	650	300	180	580	80.0	760	16.7 U	250	17 J	320	770
				MRS03-APN32436014-SS1003	1	4/17/2016		µg/kg	16.7 U	16.7 U	15 J	16.7 U	16.7 U	280	240	530	230	140	440	58.0	520	16.7 U	200	11 J	190	530
				MRS03-APN32436014-SS2001	2	4/17/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	7.4	5.8	20.0	5.2	1.67 U	8.6	1.67 U	11.0	1.67 U	6.0	1.67 U	1.67 U	12.0
				MRS03-APN32436014-SS2002	2	4/17/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	24.0	20.0	44.0	20.0	11.0	33.0	5.2	44.0	1.67 U	17.0	1.67 U	16.0	41.0
				MRS03-APN32436014-SS2003	2	4/7/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	5.1	4.4 J	18.0	3.6 J	1.67 U	6.7	1.67 U	7.7	1.67 U	1.67 U	1.67 U	1.67 U	8.3
47	32436015	3958	E. Lass Ave	MRS03-APN32436015-SS001	0	12/3/2014	1	µg/kg	70.0	120	360	5.4	1,600	8,800	7,000	9,000	5,300	4,400	9,000	1,200	15,000	280	4,800	370	7,100	14,000
				MRS03-APN32436015-SS1001	1	9/23/2015	2	µg/kg	24 J	220	130	16.7 U	720	3,300	2,100	4,800 J	2,100	1,500 J	3,000	540	6,600	80.0	1,800	110	2,900	5,200
				MRS03-APN32436015-SS2001	2	9/23/2015		µg/kg	6.0	27.0	31.0	1.67 U	140	770	500	980	480	410	710	130	1,400	22.0	440	28.0	680	1,300
				MRS03-APN32436015-SS3001	3	9/23/2015		µg/kg	3 J	23.0	18.0	1.67 U	130	640	430	870 J	400	320 J	520	100	1,200	15.0	350	13.0	590	1,100
				MRS03-APN32436015-SS3002	3	9/24/2015		µg/kg	1.1 J	21.0	5.2	1.67 U	31.0	180	110	220 J	110	67 J	170	29.0	350	2.6 J	99.0	5.5	160	290
				MRS03-APN32436015-SS3003	3	9/24/2015		µg/kg	1.3 J	1.67 U	8.1	1.67 U	75.0	360	230	500 J	220	170 J	290	55.0	730	6.1	190	6.9	360	600
				MRS03-APN32436015-SS4001	4	9/23/2015		µg/kg	2.4 J	23.0	13.0	1.67 U	56.0	310	200	420 J	190	160 J	290	51.0	570	8.5	170	10.0	270	510
				MRS03-APN32436015-SS4002	4	9/24/2015		µg/kg	1.67 U	1.67 U	4.2 J	1.67 U	18.0	130	81.0	170 J	82.0	53 J	130	21.0	210	1.9 J	71.0	3.2 J	88.0	200
				MRS03-APN32436015-SS4003	4	9/24/2015		µg/kg	1.67 U	20.0	2.6 J	1.67 U	15.0	93.0	56.0	97 J	55.0	37 J	81.0	14.0	150	1.5 J	47.0	2.9 J	69.0	130

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
48	32436021	3979	E. Lass Ave	MRS03-APN32436021-SS001	0	1/25/2016	1	µg/kg	1.67 U	5.5	1.67 U	1.67 U	7.8	57.0	53.0	87.0	55.0	46.0	90.0	14.0	140	1.5 J	46.0	1.67 U	62.0	120
				MRS03-APN32436021-SS002	0	1/25/2016		µg/kg	1.67 U	8.7	1.67 U	1.67 U	6.1	80.0	52.0	100	51.0	65.0	100	20.0	140	2.9 J	67.0	1.67 U	57.0	130
				MRS03-APN32436021-SS003	0	1/25/2016		µg/kg	1.67 U	8.2	1.1 J	1.67 U	11.0	96.0	60.0	120	60.0	69.0	110	22.0	180	2.9 J	74.0	1.67 U	81.0	160
49	32436022	3975	E. Lass Ave	MRS03-APN32436022-SS001	0	12/3/2014	1	µg/kg	3.1 J	5.1	24.0	1.67 U	210	750	540	670	400	450	810	100	1,500	47.0	360	9.2	960	1,300
				MRS03-APN32436022-SS1001	1	7/25/2016	2	µg/kg	1.67 U	1.67 U	1 J	1.67 U	11.0	64.0	22.0	72.0	33.0	24.0	31.0	15.0	71.0	1.67 U	44.0	1.67 U	32.0	76.0
				MRS03-APN32436022-SS1002	1	7/25/2016		µg/kg	1.67 U	1.67 U	2.3 J	1.67 U	17.0	94.0	40.0	94.0	51.0	45.0	57.0	20.0	120	1.67 U	62.0	3.7 J	60.0	120
				MRS03-APN32436022-SS1003	1	7/25/2016		µg/kg	1.67 U	1.67 U	3.1 J	1.67 U	13.0	73.0	29.0	77 J	42.0	39.0	44.0	18.0	76.0	1.8 J	53.0	4.1 J	35.0	89.0
				MRS03-APN32436022-SS2001	2	7/25/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	11.0	49.0	14.0	48.0	28.0	27.0	17.0	14.0	50.0	1.67 U	37.0	1.67 U	23.0	49.0
				MRS03-APN32436022-SS2002	2	7/25/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	8.9	40.0	6.2	39.0	18.0	12.0	6.8	12.0	35.0	1.67 U	28.0	1.67 U	15.0	33.0
				MRS03-APN32436022-SS2003	2	7/25/2016		µg/kg	1.67 U	1.67 U	1.2 J	1.67 U	9.5	46.0	11.0	49.0	24.0	19.0	18.0	14.0	42.0	1.67 U	34.0	1.67 U	18.0	46.0
50	32436023	3971	E. Lass Ave	MRS03-APN32436023-SS001	0	12/10/2014	1	µg/kg	1.67 U	1.67 U	1.4 J	1.67 U	6.2	24.0	37.0	67.0	23.0	1.9 J	46.0	2.5 J	78.0	1.67 U	27.0	1.6 J	35.0	70.0
				MRS03-APN32436023-SS002	0	12/10/2014		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	5.1	13.0	27.0	47.0	14.0	1.67 U	30.0	1.67 U	58.0	1.67 U	19.0	1.2 J	26.0	51.0
				MRS03-APN32436023-SS003	0	12/10/2014		µg/kg	1.67 U	1.67 U	1.7 J	1.67 U	6.7	34.0	45.0	80.0	30.0	4.6 J	57.0	2.6 J	93.0	1.67 U	33.0	1.8 J	37.0	81.0
51	32436026	3959	E. Lass Ave	MRS03-APN32436026-SS001	0	12/4/2014	1	µg/kg	1.67 U	1.67 U	1.2 J	1 J	5.0	17.0	35.0	63.0	18.0	1.67 U	45.0	1.67 U	80.0	1.67 U	22.0	1.9 J	30.0	73.0
				MRS03-APN32436026-SS002	0	4/7/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	3.4 J	28.0	18.0	34.0	25.0	26.0	32.0	9.4	39.0	1.67 U	29.0	1.9 J	14.0	47.0
				MRS03-APN32436026-SS003	0	4/7/2015		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	4 J	24.0	20.0	40.0	24.0	26.0	39.0	9.6	44.0	1.67 U	28.0	1.8 J	17.0	49.0
52	32437020	3980	E. Packard Ave	MRS03-APN32437020-SS001	0	4/5/2016	1	µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	17.0	11.0	29.0	11.0	5.9	17.0	3.6 J	25.0	1.67 U	11.0	1.1 J	5.4	25.0
				MRS03-APN32437020-SS002	0	4/5/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	11.0	7.7	25.0	7.3	1.67 U	12.0	1.67 U	15.0	1.67 U	8.3	1.67 U	1.4 J	17.0
				MRS03-APN32437020-SS003	0	4/5/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	11.0	8.3	24.0	7.8	1.67 U	13.0	3 J	16.0	1.67 U	8.6	1.1 J	1.4 J	18.0
53	32439003	3974	E. Snavely Ave	MRS03-APN32439003-SS001	0	1/27/2016	1	µg/kg	1.67 U	7.1	7.2	1.67 U	24.0	140	120	210	95.0	66.0	150	28.0	260	2.8 J	83.0	6.4	110	240
				MRS03-APN32439003-SS002	0	1/27/2016		µg/kg	1.67 U	7.9	11.0	1.67 U	34.0	180	140	290	120	73.0	180	32.0	370	4.5 J	92.0	13.0	160	320
				MRS03-APN32439003-SS003	0	1/27/2016		µg/kg	1.67 U	6.2	6.4	1.67 U	18.0	120	100	180	72.0	55.0	140	23.0	250	2.4 J	73.0	5.7	100	220
				MRS03-APN32439003-SS1001	1	3/7/2016	2	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	150	44 J	250	45 J	110	86.0	16.7 U	150	16.7 U	190	16.7 U	67.0	110
				MRS03-APN32439003-SS1002	1	3/7/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	140	32 J	230	36 J	95.0	56.0	16.7 U	96.0	16.7 U	170	16.7 U	32 J	58.0
				MRS03-APN32439003-SS1003	1	3/7/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	130	27 J	230	29 J	79.0	48 J	16.7 U	87.0	16.7 U	170	16.7 U	26 J	51.0
				MRS03-APN32439003-SS2001	2	3/7/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	14.0	2.9 J	22.0	3 J	10.0	5.2	1.67 U	9.7	1.67 U	17.0	1.67 U	2.8 J	6.5
				MRS03-APN32439003-SS2002	2	3/7/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	12.0	1.7 J	21.0	1.67 U	7.2	2.8 J	1.67 U	7.7	1.67 U	16.0	1.67 U	2.1 J	4.1 J
				MRS03-APN32439003-SS2003	2	3/7/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	13.0	2.1 J	21.0	2.3 J	7.8	1.67 U	1.67 U	8.2	1.67 U	16.0	1.67 U	2.2 J	5.0
54	32439004	3970	E. Snavely Ave	MRS03-APN32439004-SS001	0	2/9/2017	1	µg/kg	5.2	8.9	18.0	0 U	34.0	270	290	430	200	110	310	60.0	440	6.3	170	29.0	190	440
				MRS03-APN32439004-SS002	0	2/9/2017		µg/kg	4.2 J	6.8	14.0	0 U	28.0	230	230	350	140	90.0	240	48.0	350	5.3	140	19.0	150	360
				MRS03-APN32439004-SS003	0	2/9/2017		µg/kg	3.1 J	4.9 J	12.0	0 U	38.0	260	260	390	180	94.0	260	52.0	430	5.1	150	13.0	200	390
				MRS03-APN32439004-SS1001	1	2/9/2017		µg/kg	5.0	7.7	29.0	0 U	190	640	540	780	460	250	800	100	1,300	33.0	370	20.0	810	1,100
				MRS03-APN32439004-SS1002	1	2/9/2017		µg/kg	2 J	2.6 J	8.0	0 U	26.0	130	130	200	92.0	57.0	180	3.1 J	250	3.8 J	96.0	6.6	130	230
				MRS03-APN32439004-SS1003	1	2/9/2017		µg/kg	1.5 J	2.1 J	6.0	0 U	12.0	90.0	110	160	74.0	47.0	130	0 U	150	1.8 J	77.0	6.7	63.0	150
				MRS03-APN32439004-SS2001	2	2/9/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	5.3	6.4	9.7	0 U	0 U	0 U	0 U	9.9	0 U	0 U	0.93 J	4.6 J	9.2
				MRS03-APN32439004-SS2002	2	2/9/2017		µg/kg	0 U	0 U	0 U	0 U	0 U	2.3 J	2.3 J	0 U	0 U	0 U	0 U	0 U	4 J	0 U	0 U	0 U	2 J	3.8 J
				MRS03-APN32439004-SS2003	2	2/9/2017		µg/kg	0 U	0 U	1.3 J	0 U	1.5 J	12.0	15.0	19.0	0 U	8.1	0 U	0 U	23.0	0 U	7.7	0 U	9.0	23.0
55	32439005	3962	E. Snavely Way	MRS03-APN32439005-SS001	0	11/5/2015	1	µg/kg	19.0	20.0	76.0	1.3 J	160	1,100	870	1,500	710	960	1,400	210	1,600	30.0	710	94.0	730	1,700
				MRS03-APN32439005-SS1001	1	4/5/2016	2	µg/kg	18 J	16.7 U	73.0	16.7 U	36 J	690	420	950	440	270	970	130	1,100	16.7 U	430	73.0	500	1,200
				MRS03-APN32439005-SS1002	1	4/5/2016		µg/kg	16.7 U	16.7 U	24 J	16.7 U	16.7 U	350	200	480	200	200	370	61.0	500	16.7 U	190	19 J	200	530
				MRS03-APN32439005-SS1003	1	4/5/2016		µg/kg	33.4 U	33.4 U	68 J	33.4 U	33.4 U	1,100	1,100	2,200	1,200	570	1,600	290	1,300	33.4 U	1,000	73 J	430	1,600
				MRS03-APN32439005-SS2001	2	4/5/2016		µg/kg	1.67 U	1.67 U	1.7 J	1.67 U	1.67 U	19.0	12.0	31.0	11.0	1.67 U	21.0	3.7 J	25.0	1.67 U	12.0	1.67 U	6.6	28.0
				MRS03-APN32439005-SS2002	2	4/5/2016		µg/kg	1.67 U	1.67 U	1 J	1.67 U	1.67 U	20.0	14.0	32.0	13.0	10.0	24.0	1.67 U	32.0	1.67 U	12.0	1.67 U	10.0	32.0
				MRS03-APN32439005-SS2003	2	4/5/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	14.0	9.5	28.0	9.3	4.3 J	16.0	1.67 U	18.0	1.67 U	9.3	0.91 J	3.4 J	20.0
56	32439006	3960	E. Snavely Way	MRS03-APN32439006-SS001	0	12/9/2014	1	µg/kg	8.1	13.0	38.0	1.2 J	97.0	770	770	1,100	610	370	1,100	160	1,200	19.0	530	34.0	580	1,300
				MRS03-APN32439006-SS1001	1	3/7/2016	2	µg/kg	16.7 U	16.7 U	41 J	16.7 U	30 J	630	390	850	400	380	710	130	880	16.7 U	440	26 J	420	990
				MRS03-APN32439006-SS1002	1	3/7/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	32 J	520	320	720	320	300	510	110	860	16.7 U	360	16.7 U	430	800
				MRS03-APN32439006-SS1003	1	3/7/2016		µg/kg	16.7 U	16.7 U	29 J	16.7 U	19 J	520	330	740	350	310	560	120	720	16.7 U	390	20 J	350	780
				MRS03-APN32439006-SS2001	2	3/7/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	260	120	400	120	140	200	78.0	290	16.7 U	230	16.7 U	140	260
				MRS03-APN32439006-SS2002	2	3/7/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	120	21 J	210	21 J	78.0	37 J	16.7 U	75.0	16.7 U	160	16.7 U	18 J	40 J
				MRS03-APN32439006-SS2003	2	3/7/2016		µg/kg	16.7 U	16.7 U	16.7 U	29 J	16.7 U	220	100	340	100	140	180	73.0	240	16.7 U	220	16.7 U	110	230

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
57	32439007	3958	E. Snavely Way	MRS03-APN32439007-SS001	0	12/9/2014	1	µg/kg	14.0	24.0	65.0	1.7 J	180	1,400	1,100	1,500	880	700	1,500	240	2,100	28.0	840	62.0	960	2,200
				MRS03-APN32439007-SS1001	1	4/26/2016	2	µg/kg	6.8	4.8 J	27.0	1.67 U	76.0	650	340	720	330	200	590	88.0	950	9.7	310	26.0	440	960
				MRS03-APN32439007-SS1002	1	4/26/2016		µg/kg	7.9	6.0	38.0	1.67 U	110	740	440	840	430	350	880	110	1,300	14.0	400	26.0	570	1,300
				MRS03-APN32439007-SS1003	1	4/26/2016		µg/kg	15.0	15.0	71.0	5.3	260	1,600	870	1,700	810	680	1,700	230	2,500	35.0	810	58.0	1,300	2,700
				MRS03-APN32439007-SS2001	2	4/26/2016		µg/kg	2.3 J	1.67 U	8.7	4.1 J	27.0	220	120	250	120	73.0	200	31.0	360	1 J	110	8.4	160	330
				MRS03-APN32439007-SS2002	2	4/26/2016		µg/kg	1.67 U	1.67 U	4 J	1.67 U	1.67 U	60.0	39.0	86.0	39.0	24.0	77.0	11.0	92.0	1.67 U	36.0	3.4 J	31.0	96.0
				MRS03-APN32439007-SS2003	2	4/26/2016		µg/kg	1.67 U	1.67 U	3.4 J	1.67 U	1.67 U	54.0	36.0	78.0	36.0	22.0	71.0	11.0	79.0	1.67 U	35.0	2.9 J	26.0	88.0
58	32439013	3940	E. Snavely Cir	MRS03-APN32439013-SS001	0	7/18/2016	1	µg/kg	30.0	28.0	130	2.5 J	410	2,400	1,500	3,000	1,900	1,100	2,700	400	5,100	61.0	1,900	110	2,100	4,400
				MRS03-APN32439013-SS002	0	7/18/2016		µg/kg	28.0	28.0	110	3.3 J	360	2,400	1,500	3,500	1,800	1,000	2,600	410	3,700	46.0	2,000	110	2,000	3,200
				MRS03-APN32439013-SS003	0	7/18/2016		µg/kg	40.0	51.0	180	8.5 U	600	3,800	3,100	8,100	3,400	1,500	5,500	800	6,800	65.0	3,300	150	3,000	6,400
				MRS03-APN32439013-SS1001	1	7/18/2016		µg/kg	6.6	10.0	27.0	1.67 U	73.0	700	480	900	490	330	740	110	1,200	10.0	460	24.0	400	1,100
				MRS03-APN32439013-SS1002	1	7/18/2016		µg/kg	7.9	12.0	32.0	1.67 U	71.0	590	340	690	360	210	620	82.0	880	15.0	380	31.0	370	820
				MRS03-APN32439013-SS1003	1	7/18/2016		µg/kg	10.0	16.0	40.0	1.67 U	91.0	840	570	1,100	600	360	840	140	1,200	17.0	560	48.0	480	1,100
				MRS03-APN32439013-SS2001	2	7/18/2016		µg/kg	3.3 J	5.2	17.0	1.67 U	41.0	320	190	400	190	110	320	46.0	490	9.2	170	11.0	210	380
				MRS03-APN32439013-SS2002	2	7/18/2016		µg/kg	1.67 U	1.67 U	2.1 J	1.67 U	5.1	53.0	17.0	81.0	21.0	1.67 U	56.0	5.8	81.0	1.67 U	51.0	1.9 J	32.0	74.0
				MRS03-APN32439013-SS2003	2	7/18/2016		µg/kg	2.5 J	4 J	15.0	1.67 U	78.0	470	280	600	290	130	430	66.0	770	13.0	270	9.9	350	630
59	32439014	3936	E. Snavely Ave	MRS03-APN32439014-SS001	0	12/3/2014	1	µg/kg	6.2	9.6	24.0	1.67 U	68.0	640	600	750	1.67 U	540	830	140	960	8.8	420	28.0	390	1,000
				MRS03-APN32439014-SS1001	1	4/4/2016	2	µg/kg	16.7 U	16.7 U	47 J	62	16.7 U	330	240	560	260	180	500	74.0	600	16.7 U	250	19 J	230	610
				MRS03-APN32439014-SS1002	1	4/4/2016		µg/kg	2.5 J	1.67 U	11.0	4.2 J	13.0	220	150	300	160	94.0	250	40.0	310	1.67 U	130	11.0	120	340
				MRS03-APN32439014-SS1003	1	4/4/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	250	170	420	170	99.0	270	52.0	320	16.7 U	160	16.7 U	79.0	350
				MRS03-APN32439014-SS2001	2	4/4/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	6.2	5.0	19.0	4.6 J	1.67 U	7.2	1.67 U	7.9	1.67 U	5.9	1.67 U	1.67 U	9.1
				MRS03-APN32439014-SS2002	2	4/4/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	5.6	1.67 U	17.0	3.7 J	1.67 U	6.1	1.67 U	7.7	1.67 U	5.1	1.67 U	1.67 U	8.3
				MRS03-APN32439014-SS2003	2	4/4/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	5.1	4.1 J	16.0	3.6 J	1.67 U	5.8	1.67 U	6.6	1.67 U	4.9 J	1.67 U	1.67 U	7.3
60	32439015	3930	E. Snavely Plz	MRS03-APN32439015-SS001	0	11/5/2015	1	µg/kg	6.1	3.3 J	25.0	1.4 J	86.0	600	450	820	380	460	720	110	1,000	9.6	350	23.0	430	960
				MRS03-APN32439015-SS1001	1	4/7/2016	2	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	93.0	73.0	220	67.0	16.7 U	130	16.7 U	130	16.7 U	74.0	16.7 U	16.7 U	150
				MRS03-APN32439015-SS1002	1	4/8/2016		µg/kg	1.5 J	1.67 U	8.1	1.67 U	15.0	200	130	250	130	87.0	220	26.0	320	1.67 U	120	4.4 J	140	330
				MRS03-APN32439015-SS1003	1	4/8/2016		µg/kg	2.2 J	1.67 U	7.8	1.67 U	9.7	200	140	260	130	94.0	220	28.0	290	1.67 U	120	9.3	120	300
				MRS03-APN32439015-SS2001	2	4/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	42.0	12.0	28.0	11.0	1.67 U	18.0	1.67 U	33.0	1.67 U	19.0	1.67 U	20.0	31.0
				MRS03-APN32439015-SS2002	2	4/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	34.0	7.0	20.0	6.6	1.67 U	10.0	1.67 U	15.0	1.67 U	15.0	1.67 U	7.8	15.0
				MRS03-APN32439015-SS2003	2	4/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	28.0	2.3 J	11.0	2.3 J	1.67 U	3.8 J	1.67 U	3.7 J	1.67 U	11.0	1.67 U	2.3 J	5.2
61	32439016	3928	E. Snavely Plz	MRS03-APN32439016-SS001	0	11/2/2015	1	µg/kg	21.0	24.0	89.0	3.8 J	300	1,900	1,400	2,300	1,100	1,200	2,300	330	3,200	38.0	1,100	92.0	1,400	3,000
				MRS03-APN32439016-SS1001	1	3/8/2016	2	µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	200	110	350	120	150	170	78.0	200	16.7 U	220	16.7 U	78.0	180
				MRS03-APN32439016-SS1002	1	3/8/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	330	220	500	230	260	330	94.0	430	16.7 U	290	13 J	200	430
				MRS03-APN32439016-SS1003	1	3/8/2016		µg/kg	16.7 U	16.7 U	16.7 U	16.7 U	16.7 U	340	230	550	250	250	330	95.0	400	16.7 U	310	16.7 U	150	410
				MRS03-APN32439016-SS2001	2	3/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	43.0	26.0	63.0	27.0	23.0	37.0	11.0	55.0	1.67 U	36.0	1.67 U	20.0	53.0
				MRS03-APN32439016-SS2002	2	3/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	1.67 U	41.0	24.0	58.0	24.0	21.0	34.0	9.8	55.0	1.67 U	32.0	1.67 U	24.0	53.0
				MRS03-APN32439016-SS2003	2	3/8/2016		µg/kg	1.67 U	1.67 U	1.67 U	1.67 U	2.5 J	77.0	48.0	96.0	50.0	45.0	72.0	15.0	110	1.67 U	53.0	1.67 U	48.0	110
62	32439017	3926	E. Snavely Plz	MRS03-APN32439017-SS001	0	7/19/2016	1	µg/kg	14.0	8.3	52.0	2 J	180	1,500	790	1,600	1,000	510	1,400	230	2,400	22.0	1,000	57.0	1,000	2,200
				MRS03-APN32439017-SS002	0	7/19/2016		µg/kg	11.0	4.7 J	44.0	1.8 J	160	1,300	730	1,500	900	470	1,100	200	2,100	17.0	870	45.0	900	1,800
				MRS03-APN32439017-SS003	0	7/19/2016		µg/kg	12.0	7.7	50.0	2.1 J	160	1,200	680	1,400	860	450	1,100	200	2,000	20.0	840	53.0	880	1,800
				MRS03-APN32439017-SS1001	1	7/19/2016		µg/kg	1.2 J	1.8 J	4.5 J	1.67 U	10.0	110	64.0	180	67.0	1.67 U	130	16.0	200	1.6 J	91.0	3.9 J	68.0	190
				MRS03-APN32439017-SS1002	1	7/19/2016		µg/kg	1.1 J	1.6 J	3.8 J	1.67 U	14.0	140	92.0	220	96.0	17.0	150	23.0	200	1.5 J	110	4.4 J	82.0	200
				MRS03-APN32439017-SS1003	1	7/19/2016		µg/kg	1.8 J	2.7 J	6.0	1.67 U	12.0	140	82.0	210	83.0	14.0	160	19.0	200	2 J	110	6.2	78.0	190
				MRS03-APN32439017-SS2001	2	7/19/2016		µg/kg	1.67 U	1.67 U	1.7 J	1.67 U	2.8 J	31 J	1.1 J	55.0	3.8 J	1.67 U	34.0	2.6 J	44.0	1.67 U	39.0	2 J	18.0	49.0
				MRS03-APN32439017-SS2002	2	7/19/2016		µg/kg	1.67 U	1.67 U	1.4 J	1.67 U	5.3	28.0	1.67 U	45.0	1.67 U	1.67 U	27.0	1.3 J	47.0	1.67 U	32.0	1.4 J	26.0	43.0
				MRS03-APN32439017-SS2003	2	7/19/2016		µg/kg	1.67 U	1.67 U	2 J	1.67 U	9.6	58.0	19.0	89.0	21.0	1.67 U	56.0	5.4	110	1.5 J	52.0	1.8 J	49.0	83.0

TABLE 3-3
SUMMARY OF PAHs CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase 1 or 2	Analytes	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
								Units	µg/kg																	
63	32439026	3975	E. Snavely Ave	MRS03-APN32439026-SS001	0	1/27/2016	1	µg/kg	14.0	12.0	56.0	2.3	170	1,200	550	1,100	690	380	980	160	1,800	27.0	680	60.0	870	1,700
				MRS03-APN32439026-SS002	0	1/27/2016		µg/kg	7.2	1.67 U	29.0	3.1 J	110	760	340	710	420	230	600	98.0	1,100	13.0	440	30.0	520	980
				MRS03-APN32439026-SS003	0	1/27/2016		µg/kg	12.0	11.0	44.0	2.7 J	140	1,000	490	980	600	340	820	140	1,600	20.0	610	60.0	710	1,400
				MRS03-APN32439026-SS1001	1	3/7/2016		µg/kg	21.0	33.0	86.0	1.1 J	190	1,500	1,100	2,100	1,100	740	1,600	270	2,000	38.0	930	70.0	840	2,000
				MRS03-APN32439026-SS1002	1	3/7/2016		µg/kg	16.0	26.0	71.0	1.2 J	190	1,200	790	1,600	700	480	1,200	180	1,800	38.0	630	75.0	860	1,700
				MRS03-APN32439026-SS1003	1	3/7/2016		µg/kg	53.0	82.0	240	3 J	720	5,400	2,900	6,200	2,300	1,200	4,500	640	6,300	140	2,300	210	2,900	6,400
				MRS03-APN32439026-SS2001	2	3/7/2016		µg/kg	130	200	550	7.5	1,500	12,000	9,100	16,000	9,800	1,700	15,000	1,600	21,000	290	9,000	530	11,000	20,000
				MRS03-APN32439026-SS2002	2	3/7/2016		µg/kg	110	170	450	6.3	1,300	11,000	8,000	14,000	8,600	1,800	12,000	1,300	19,000	240	7,900	430	9,800	18,000
				MRS03-APN32439026-SS2003	2	3/7/2016		µg/kg	110	170	450	6.2	1,300	11,000	8,000	14,000	8,800	1,800	12,000	1,300	18,000	240	7,900	420	9,100	17,000
64	32439032	3951	E. Snavely Ave	MRS03-APN32439032-SS001	0	7/19/2016	1	µg/kg	8.4	14.0	31.0	1.67 U	130	700	580	1,500	660	270	1,000	160	1,300	10.0	640	34.0	600	1,200
				MRS03-APN32439032-SS002	0	7/19/2016		µg/kg	12.0	4.6 J	42.0	1.4 J	120	930	480	980	600	320	770	140	1,300	16.0	610	50.0	590	1,200
				MRS03-APN32439032-SS003	0	71/9/2016		µg/kg	11.0	5.3	41.0	1.5 J	110	920	460	950	590	310	800	130	1,400	15.0	580	47.0	580	1,300
				MRS03-APN32439032-SS1001	1	7/19/2016		µg/kg	12.0	18.0	56.0	1.67 U	100	800	530	1,000	520	330	840	130	1,100	24.0	500	54.0	470	1,100
				MRS03-APN32439032-SS1002	1	7/19/2016		µg/kg	8.0	12.0	32.0	1.67 U	79.0	680	430	880	420	230	690	110	930	13.0	410	30.0	390	900
				MRS03-APN32439032-SS1003	1	7/19/2016		µg/kg	13.0	20.0	51.0	1.67 U	120	950	650	1,300	630	340	970	160	1,100	24.0	600	53.0	570	1,200
				MRS03-APN32439032-SS2001	2	7/20/2016		µg/kg	29.0	45.0	120	1.8 J	310	2,300	1,500	4,300	1,400	760	2,400	370	5,300	55.0	1,400	120	1,400	5,200
				MRS03-APN32439032-SS2002	2	7/20/2016		µg/kg	97.0	150	410	5.3	870	8,100	6,200	11,000	6,800	1,500	9,600	1,200	13,000	190	6,200	390	6,000	13,000
				MRS03-APN32439032-SS2003	2	7/20/2016		µg/kg	160	250	640	7.4	1,300	11,000	8,700	15,000	9,500	1,500	14,000	1,400	18,000	340	8,800	660	8,700	18,000
65	32439033	3947	E. Snavely Ave	MRS03-APN32439033-SS001	0	11/5/2015	1	µg/kg	8.8	7.7	36.0	1.67 U	84.0	520	370	290	290	340	620	87.0	840	13.0	280	44.0	370	840
				MRS03-APN32439033-SS002	0	11/5/2015		µg/kg	6.7	6.1	30.0	1.67 U	90.0	570	420	670	330	410	690	100	960	11.0	310	35.0	420	920
				MRS03-APN32439033-SS003	0	11/5/2015		µg/kg	14 J	16.7 U	73.0	16.7 U	39 J	950	590	1,200	610	470	1,200	160	1,400	16.7 U	550	58.0	600	1,700
				MRS03-APN32439033-SS1001	1	4/4/2016	2	µg/kg	48 J	28 J	240	16.7 U	300	2,500	1,400	3,000	1,400	930	2,900	380	3,500	65.0	1,200	180	1,700	4,100
				MRS03-APN32439033-SS1002	1	4/4/2016		µg/kg	23 J	16.7 U	100	40 J	150	1,500	890	1,900	900	640	1,900	250	2,200	16.7 U	830	81.0	990	2,600
				MRS03-APN32439033-SS1003	1	4/4/2016		µg/kg	1.67 U	1.67 U	4 J	1.67 U	1.67 U	91.0	65.0	130	67.0	47.0	120	18.0	130	1.67 U	60.0	2.6 J	44.0	150
				MRS03-APN32439033-SS2001	2	4/6/2016		µg/kg	3.9 J	2.3 J	18.0	1.67 U	62.0	420	220	480	200	140	410	58.0	680	9.9	190	17.0	370	650
				MRS03-APN32439033-SS2002	2	4/6/2016		µg/kg	1.9 J	1.67 U	7.8	1.67 U	14.0	180	130	250	130	85.0	220	33.0	280	1.67 U	110	8.4	110	300
				MRS03-APN32439033-SS2003	2	4/6/2016		µg/kg	3.6 J	1.67 U	15.0	1.67 U	43.0	290	230	400	180	210	350	53.0	530	5.7	160	17.0	230	490
66	32439035	3939	E. Snavely Ave	MRS03-APN32439035-SS1001	1	4/7/2016	2	µg/kg	16.7 U	16.7 U	37 J	16.7 U	16.7 U	490	280	630	280	210	540	78.0	690	16.7 U	250	31 J	280	780
				MRS03-APN32439035-SS1002	1	4/7/2016		µg/kg	24 J	16.7 U	110	16.7 U	73.0	1,100	650	1,300	650	580	1,500	180	1,500	12 J	600	76.0	650	1,800
				MRS03-APN32439035-SS1003	1	4/7/2016		µg/kg	12 J	16.7 U	45 J	44 J	16.7 U	430	310	700	310	200	670	90.0	670	16.7 U	260	43 J	250	800
				MRS03-APN32439035-SS2001	2	4/7/2016		µg/kg	1.67 U	1.67 U	1.8 J	1.67 U	1.67 U	23.0	16.0	39.0	15.0	10.0	33.0	4.5 J	38.0	1.67 U	14.0	1.67 U	14.0	41.0
				MRS03-APN32439035-SS2002	2	4/7/2016		µg/kg	1.67 U	1.67 U	2.5 J	1.67 U	1.67 U	32.0	22.0	53.0	21.0	13.0	45.0	6.6	48.0	1.67 U	20.0	2.9 J	17.0	57.0
				MRS03-APN32439035-SS2003	2	4/7/2016		µg/kg	1.67 U	1.67 U	1.9 J	1.67 U	1.67 U	19.0	15.0	37.0	14.0	9.7	31.0	4.4 J	31.0	1.67 U	14.0	2.6 J	10.0	35.0

Abbreviations and Notes:
µg/kg - microgram per kilogram
APN - assessor parcel number
(E) east section of subdivided parcel
J - estimated value
NA - not analyzed
PAH - polycyclic aromatic hydrocarbons
RSL- regoinal screening level
U - not detected above the limit of detection
(W) west section of subdivided parcel

TABLE 3-4
SUMMARY OF METALS CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase	Analytes	Antimony	Copper	Lead	Zinc
1	32404211B	3875	E. Shaeffer Ave	MRS03-APN32404211B-SS001	0	9/24/2015	1	mg/kg	4.9	17.3	20.7	78.3
				MRS03-APN32404211B-SS002	0	9/24/2015		mg/kg	4.7	15.9	16.2	57.3
				MRS03-APN32404211B-SS003	0	9/24/2015		mg/kg	5.6	15.9	60.6	56.5
2	32404211D	3880	E. Devlin Ave	MRS03-APN32404211D-SS001	0	12/4/2014	1	mg/kg	5.4	12.4	64.8	57.1
				MRS03-APN32404211D-SS1001	1	12/16/2014		mg/kg	1.7 J	15	16.9	54.3
				MRS03-APN32404211D-SS1002	1	12/16/2014		mg/kg	1 J	16.2	14.6	56.4
				MRS03-APN32404211D-SS1003	1	12/16/2014		mg/kg	1.7 J	14.9	14.7	53.4
				MRS03-APN32404211D-SS2001	2	12/16/2014		mg/kg	1 J	12.8	10.9	48.5
				MRS03-APN32404211D-SS2002	2	12/16/2014		mg/kg	1.1 J	12.5	10.9	45.2
				MRS03-APN32404211D-SS2003	2	12/16/2014		mg/kg	2.1 J	13.4	11.3	40.6
3	32404211E	3880	E. Devlin Ave	MRS03-APN32404211E-SS001	0	12/4/2014	1	mg/kg	3.8	12.9	26.1	119
				MRS03-APN32404211E-SS1001	1	7/22/2016	2	mg/kg	3.8	13.9	17.8	52
				MRS03-APN32404211E-SS1002	1	7/22/2016		mg/kg	3.8	14.9	15	54.7
				MRS03-APN32404211E-SS1003	1	7/22/2016		mg/kg	3.1	13.8	18.1	52.2
				MRS03-APN32404211E-SS2001	2	7/22/2016		mg/kg	2.7	14.4	11.9	46.2
				MRS03-APN32404211E-SS2002	2	7/22/2016		mg/kg	2.8	13	11.4	44.4
				MRS03-APN32404211E-SS2003	2	7/22/2016		mg/kg	2.5	12.9	11.5	42.8
4	32404212	3883	E. Shaeffer Ave	MRS03-APN32404212-SS001	0	9/24/2015	1	mg/kg	5.9	16.6	122	61.6
				MRS03-APN32404212-SS002	0	9/24/2015		mg/kg	4	21.3	39.6	64.5
				MRS03-APN32404212-SS003	0	9/24/2015		mg/kg	3.8	22.4	36.1	64.8
5	32404237A(E)	3870	E. Devlin Ave	MRS03-APN32404237A(E)-SS001	0	12/8/2014	1	mg/kg	2.7	12.2	28	58.1
				MRS03-APN32404237A(E)-SS1001	1	12/8/2014		mg/kg	5	12.3	14.6	42.4
				MRS03-APN32404237A(E)-SS2001	2	12/8/2014		mg/kg	2.5	12	10.5	43.9
				MRS03-APN32404237A(E)-SS3001	3	12/8/2014		mg/kg	5	8.6	7.9	29.6
				MRS03-APN32404237A(E)-SS3002	3	12/9/2014		mg/kg	4.6	8.5	8.6	32.6
				MRS03-APN32404237A(E)-SS3003	3	12/10/2014		mg/kg	4.7	9.7	9.9	34.9
				MRS03-APN32404237A(E)-SS4001	4	12/8/2014		mg/kg	5.1	6.7	7.2	25.1
				MRS03-APN32404237A(E)-SS4002	4	12/9/2014		mg/kg	2.7	6.5	7.6	27.2
				MRS03-APN32404237A(E)-SS4003	4	12/10/2014		mg/kg	3.1	7.2	8.1	28.6
	32404237A(W)	3870	E. Devlin Ave	MRS03-APN32404237A(W)-SS001	0	4/15/2015	1	mg/kg	1.5 J	9.7	18.1	79
				MRS03-APN32404237A(W)-SS1001	1	4/15/2015		mg/kg	2.1 J	10.3	24.3	46.7
				MRS03-APN32404237A(W)-SS2001	2	4/15/2015		mg/kg	1.6 J	9.9	9.8	40.8
				MRS03-APN32404237A(W)-SS3001	3	4/15/2015		mg/kg	1.7 J	9	9.3	40.1
				MRS03-APN32404237A(W)-SS3002	3	4/15/2015		mg/kg	3.3	9.8	9.6	43
				MRS03-APN32404237A(W)-SS3003	3	4/15/2015		mg/kg	3	11.4	9.5	43.7
				MRS03-APN32404237A(W)-SS4001	4	4/15/2015		mg/kg	2.2 J	9.1	10.4	43.3
				MRS03-APN32404237A(W)-SS4002	4	4/15/2015		mg/kg	1.3 J	9.4	10.2	45.2
				MRS03-APN32404237A(W)-SS4003	4	4/15/2015		mg/kg	2.3 J	8.6	8.9	40.6
6	32404240	3850	E. Devlin Ave	MRS03-APN32404240-SS001	0	7/21/2016	1	mg/kg	3.8	14	10.1	68
				MRS03-APN32404240-SS002	0	7/21/2016		mg/kg	2.3 J	13.7	9.9	69.2
				MRS03-APN32404240-SS003	0	7/21/2016		mg/kg	6.1	13.6	10.2	64.5
7	32404281	3849	E. Shaeffer Ave	MRS03-APN32404281-SS001	0	12/2/2014	1	mg/kg	5.3	9	13.4	36.6
				MRS03-APN32404281-SS002	0	12/2/2014		mg/kg	5.7	9.1	13.9	43.6
				MRS03-APN32404281-SS003	0	12/2/2014		mg/kg	4.2	8.4	14.4	86.1
8	32404282A (E)	3871	E. Shaeffer Ave	MRS03-APN32404282A(E)-SS001	0	4/9/2015	1	mg/kg	3.8	17.5	47.1	60.9
				MRS03-APN32404282A(E)-SS002	0	3/10/2016		mg/kg	3	17.5	55.5	59.4
				MRS03-APN32404282A(E)-SS003	0	3/10/2016		mg/kg	9	46.3	281	65.9
	32404282A (W)	3871	E. Shaeffer Ave	MRS03-APN32404282A(W)-SS001	0	4/9/2015	1	mg/kg	2.5	11.8	48.8	53.5
				MRS03-APN32404282A(W)-SS002	0	3/11/2016		mg/kg	4.3	12.6	47.5	45.5
				MRS03-APN32404282A(W)-SS003	0	3/11/2016		mg/kg	3.8	12.1	45.6	43.4
9	32404282B (E)	3855	E. Shaeffer Ave	MRS03-APN32404282B(E)-SS001	0	12/2/2014	1	mg/kg	3.4	14.5	13.7	53.6
				MRS03-APN32404282B(E)-SS002	0	4/7/2015		mg/kg	2.6	14.6	15.1	63.7
				MRS03-APN32404282B(E)-SS003	0	4/7/2015		mg/kg	2.5	14.6	15.1	65.5
	32404282B (W)	3855	E. Shaeffer Ave	MRS03-APN32404282B(W)-SS001	0	12/2/2014	1	mg/kg	2.5	12.7	10.5	49.6
				MRS03-APN32404282B(W)-SS002	0	4/7/2015		mg/kg	2.1 J	13.4	12.3	56.9
				MRS03-APN32404282B(W)-SS003	0	4/7/2015		mg/kg	3.5	14.3	13.2	57.6
10	32404484	3860	E. Hearne Ave	MRS03-APN32404484-SS001	0	12/10/2014	1	mg/kg	6.4	24.9	14.4	79.7
				MRS03-APN32404484-SS1001	1	9/21/2015	2	mg/kg	3.2	16.3	14.9	52.6
				MRS03-APN32404484-SS2001	2	9/21/2015		mg/kg	2.6	14.8	11.7	53.3
				MRS03-APN32404484-SS3001	3	9/21/2015		mg/kg	3	10.9	9.8	42.6
				MRS03-APN32404484-SS3002	3	9/22/2015		mg/kg	4.9	11.4	10.4	43.9
				MRS03-APN32404484-SS3003	3	9/22/2015		mg/kg	4.2	11.1	10.2	43.6
				MRS03-APN32404484-SS4001	4	9/22/2015		mg/kg	2.9	9.3	8.6	40.1
				MRS03-APN32404484-SS4002	4	9/22/2015		mg/kg	3.6	9.8	8.8	40.4
				MRS03-APN32404484-SS4003	4	9/22/2015		mg/kg	2.2 J	9	8.7	40.5
11	32404485	3854	E. Hearne Ave	MRS03-APN32404485-SS001	0	2/6/2017	1	mg/kg	8.2	12.8	19.6	50
				MRS03-APN32404485-SS002	0	2/6/2017		mg/kg	9.4	12.4	19.8	56.4
				MRS03-APN32404485-SS003	0	2/6/2017		mg/kg	8.6	12.7	19.4	52.9
				MRS03-APN32404485-SS1001	1	2/6/2017		mg/kg	6.7	11.6	11.5	40.5
				MRS03-APN32404485-SS1002	1	2/6/2017		mg/kg	6.8	11.4	11.1	40.5
				MRS03-APN32404485-SS1003	1	2/6/2017		mg/kg	6.9	11.4	11.5	39.6
				MRS03-APN32404485-SS2001	2	2/6/2017		mg/kg	5.7	12.8	10.6	43.7
				MRS03-APN32404485-SS2002	2	2/6/2017		mg/kg	6.1	13.4	10.8	53.5
				MRS03-APN32404485-SS2003	2	2/6/2017		mg/kg	7.6	13	11.2	49
12	32404486	3850	E. Hearne Ave	MRS03-APN32404486-SS001	0	2/9/2017	1	mg/kg	4.3	13.3	18.7	60.8
				MRS03-APN32404486-SS002	0	2/9/2017		mg/kg	4.5	13.2	19.7	58.2
				MRS03-APN32404486-SS003	0	2/9/2017		mg/kg	4.8	13.3	18.8	56.9
				MRS03-APN32404486-SS1001	1	2/9/2017		mg/kg	4.8	14.5	14.3	56.6
				MRS03-APN32404486-SS1002	1	2/9/2017		mg/kg	4.9	13.9 J	14.2	55.3
				MRS03-APN32404486-SS1003	1	2/9/2017		mg/kg	4.3	13.7	14.5	54.6
				MRS03-APN32404486-SS2001	2	2/9/2017		mg/kg	5.6	14.5	12.4	56.5
				MRS03-APN32404486-SS2002	2	2/9/2017		mg/kg	4.6	15.2	12.5	61.2
				MRS03-APN32404486-SS2003	2	2/9/2017		mg/kg	4.7	15.4	12.5	57.5
13	32404559	3916	E. Hearne Ave	MRS03-APN32404559-SS001	0	4/7/2015	1	mg/kg	3.8	15.2	42.9	86.1
				MRS03-APN32404559-SS002	0	4/7/2015		mg/kg	4.9	15.3	56.8	89.3
				MRS03-APN32404559-SS003	0	4/7/2015		mg/kg	3.2	14.5	43.2	89.4

TABLE 3-4
SUMMARY OF METALS CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase	Analytes	Antimony	Copper	Lead	Zinc
14	32404561C	3890	E. Hearne Ave	MRS03-APN32404561C-SS001	0	12/15/2014	1	mg/kg	3.1	15.4	16.8	52.6
				MRS03-APN32404561C-SS1001	1	4/13/2015	2	mg/kg	2.4 J	12.1	16.2	47.1
				MRS03-APN32404561C-SS2001	2	4/13/2015		mg/kg	1.9 J	13.3	13.4	51.5
				MRS03-APN32404561C-SS3001	3	4/13/2015		mg/kg	1.8 J	10	9.5	43
				MRS03-APN32404561C-SS3002	3	4/13/2015		mg/kg	2 J	10.4	10	44.5
				MRS03-APN32404561C-SS3003	3	4/13/2015		mg/kg	2.1 J	10.7	10.7	44
				MRS03-APN32404561C-SS4001	4	4/13/2015		mg/kg	2.3 J	7.3	8	33.5
				MRS03-APN32404561C-SS4002	4	4/13/2015		mg/kg	1.2 J	7.4	7.8	34.6
				MRS03-APN32404561C-SS4003	4	4/13/2015		mg/kg	2.5	8	8.2	35
15	32404570	3883	E. Devlin Ave	MRS03-APN32404570-SS001	0	12/4/2014	1	mg/kg	3.1	11.3	16.2	72
16	32404571	3887	E. Devlin Ave	MRS03-APN32404571-SS001	0	4/9/2015	1	mg/kg	3.9	12.7	16.2	100
				MRS03-APN32404571-SS002	0	7/21/2016		mg/kg	7.7	15.1	18	94.3
				MRS03-APN32404571-SS003	0	7/21/2016		mg/kg	7.5	13.8	16.9	88.8
17	32404572	3895	E. Devlin Ave	MRS03-APN32404572-SS001	0	11/5/2015	1	mg/kg	5.1	17.3	129	60.8
				MRS03-APN32404572-SS002	0	11/5/2015		mg/kg	5	13.5	17.9	54.6
				MRS03-APN32404572-SS003	0	11/5/2015		mg/kg	4.4	13.7	18.3	55.6
				MRS03-APN32404572-SS1001	1	4/26/2016	2	mg/kg	6.9	15.5	128	51
				MRS03-APN32404572-SS1002	1	4/26/2016		mg/kg	3.3	15	20.9	50.1
				MRS03-APN32404572-SS1003	1	4/26/2016		mg/kg	3.4	17.8	20.2	51
				MRS03-APN32404572-SS2001	2	4/26/2016		mg/kg	2.6	13.8	11.5	49.9
				MRS03-APN32404572-SS2002	2	4/26/2016		mg/kg	3.7	13.9	11.5	49.8
				MRS03-APN32404572-SS2003	2	4/26/2016		mg/kg	3.6	13.9	12	49.9
18	32404639	3916	E. Ryan Ave	MRS03-APN32404639-SS001	0	4/6/2015	1	mg/kg	2.1 J	8.4	40.6	37.3
19	32404640	3910	E. Ryan Ave	MRS03-APN32404640-SS001	0	4/6/2015	1	mg/kg	4	9.9	108	45.1
20	32404643	3896	E. Ryan Ave	MRS03-APN32404643-SS3001	3	12/11/2014	1	mg/kg	5	8.7	9.4	33.4
				MRS03-APN32404643-SS3002	3	12/11/2014		mg/kg	4.2	8.8	9.8	34.8
				MRS03-APN32404643-SS3003	3	12/11/2014		mg/kg	5	9.3	9.5	35.6
				MRS03-APN32404643-SS4001	4	12/11/2014		mg/kg	5.9	7.8	8.1	28.1
				MRS03-APN32404643-SS4002	4	12/11/2014		mg/kg	6.4	8	8.1	28.2
				MRS03-APN32404643-SS4003	4	12/11/2014		mg/kg	6.3	8.3	8.5	29.8
21	32404653	3899	E. Hearne Ave	MRS03-APN32404653-SS001	0	4/17/2015	1	mg/kg	2.4 J	10.1	31.1	60.7
				MRS03-APN32404653-SS1001	1	3/8/2016	2	mg/kg	2.9	11.3	15.6	44.9
				MRS03-APN32404653-SS1002	1	3/8/2016		mg/kg	3.2	12.1	34.8	48.9
				MRS03-APN32404653-SS1003	1	3/8/2016		mg/kg	2.8	12.1	16.4	46.6
				MRS03-APN32404653-SS2001	2	3/8/2016		mg/kg	1.7 J	11.7	10.8	47.7
				MRS03-APN32404653-SS2002	2	3/8/2016		mg/kg	1.7 J	11	10.8	46.2
				MRS03-APN32404653-SS2003	2	3/8/2016		mg/kg	1.9 J	10.9	11	47.6
22	32404655A(E)	3905	E. Hearne Ave	MRS03-APN32404655A(E)-SS001	0	4/8/2015	1	mg/kg	2 J	10.3	33	53
				MRS03-APN32404655A(E)-SS002	0	4/8/2015		mg/kg	3.4	10.3	122	52.7
				MRS03-APN32404655A(E)-SS003	0	4/8/2015		mg/kg	4.6	10.3	249	51.1
				MRS03-APN32404655A(E)-SS1001	1	3/8/2016	2	mg/kg	3.2	12.1	18.2	42.9
				MRS03-APN32404655A(E)-SS1002	1	3/14/2016		mg/kg	3.2	12	18	43.1
				MRS03-APN32404655A(E)-SS1003	1	3/14/2016		mg/kg	3	12.2	17.1	43.8
				MRS03-APN32404655A(E)-SS2001	2	3//142016		mg/kg	2.8	12.1	10.7	46.7
				MRS03-APN32404655A(E)-SS2002	2	3/14/2016		mg/kg	2 J	12.7	11.4	45.4
				MRS03-APN32404655A(E)-SS2003	2	3/14/2016		mg/kg	2.9	12.2	11.7	45.2
	32404655A (W)	3905	E. Hearne Ave	MRS03-APN32404655A(W)-SS001	0	4/8/2015	1	mg/kg	3	10.9	24.6	74.1
				MRS03-APN32404655A(W)-SS1001	1	3/14/2015	2	mg/kg	4.1	11.7	43.1	47.5
				MRS03-APN32404655A(W)-SS1002	1	3/8/2016		mg/kg	3.3	11.9	22.2	48.5
				MRS03-APN32404655A(W)-SS1003	1	3/8/2016		mg/kg	2.2 J	12	21.5	50.4
				MRS03-APN32404655A(W)-SS2001	2	3/8/2016		mg/kg	2.8	12.2	10.6	44.8
				MRS03-APN32404655A(W)-SS2002	2	3/8/2016		mg/kg	2.4 J	11.6	10.7	42.7
				MRS03-APN32404655A(W)-SS2003	2	3/8/2016		mg/kg	2.1 J	11.6	10.4	44.3
23	32404686	3870	E. Ryan Ave	MRS03-APN32404686-SS001	0	12/16/2014	1	mg/kg	2.8	10.0	18.4	41.5
				MRS03-APN32404686-SS1001	1	4/8/2015	2	mg/kg	2.3 J	8.6	9.5	39.1
				MRS03-APN32404686-SS1002	1	4/8/2015		mg/kg	2 U	8.4	10.2	39.7
				MRS03-APN32404686-SS1003	1	4/8/2015		mg/kg	2.2 J	8.8	11.1	38.8
				MRS03-APN32404686-SS2001	2	4/8/2015		mg/kg	1.9 J	9.4	8.9	39.6
				MRS03-APN32404686-SS2002	2	4/8/2015		mg/kg	2 U	8.9	8.3	39.7
				MRS03-APN32404686-SS2003	2	4/8/2015		mg/kg	2 U	8.5	8.1	38
24	32404687	3866	E. Ryan Ave	MRS03-APN32404687-SS001	0	4/10/2015	1	mg/kg	3.5	11.4	22.9	52.9
				MRS03-APN32404687-SS1001	1	3/15/2016	2	mg/kg	4	9.3	11.5	36.7
				MRS03-APN32404687-SS1002	1	3/15/2016		mg/kg	4	9.2	10.8	36.2
				MRS03-APN32404687-SS1003	1	3/15/2016		mg/kg	3.5	9.3	11.2	36.8
				MRS03-APN32404687-SS2001	2	3/15/2016		mg/kg	3.6	9.3	8.1	37.2
				MRS03-APN32404687-SS2002	2	3/15/2016		mg/kg	3.4	9.4	8.6	36.8
				MRS03-APN32404687-SS2003	2	3/15/2016		mg/kg	3.3	8.6	8	34.5
25	32405150	3871	E. Ryan Ave	MRS03-APN32405150-SS001	0	2/10/2017	1	mg/kg	5.3	14.4	17.1	72.6
				MRS03-APN32405150-SS002	0	2/10/2017		mg/kg	5.7	13.6	17.3	70
				MRS03-APN32405150-SS003	0	2/10/2017		mg/kg	5.5	13.7	17.4	73.9
				MRS03-APN32405150-SS1001	1	2/10/2017		mg/kg	3.4	9.8	10.5	47.1
				MRS03-APN32405150-SS1002	1	2/10/2017		mg/kg	5.5	12	12.0	56.3
				MRS03-APN32405150-SS1003	1	2/10/2017		mg/kg	5.1	17.8	12.3	57.3
				MRS03-APN32405150-SS2001	2	2/10/2017		mg/kg	3.7	11.2	10.0	43.3
				MRS03-APN32405150-SS2002	2	2/10/2017		mg/kg	4.2	11.3	9.9	37.9
				MRS03-APN32405150-SS2003	2	2/10/2017		mg/kg	3.5	11.4	10.2	44.6
26	32405180A(E)	3950	E. Lum Ave	MRS03-APN32405180A(E)-SS001	0	12/15/2014	1	mg/kg	5.1	11.4	174	69.4
				MRS03-APN32405180A(E)-SS1001	1	7/29/2016	2	mg/kg	5	11.4	25.9	41
				MRS03-APN32405180A(E)-SS1002	1	7/29/2016		mg/kg	4.8	11.1	24.7	38.7
				MRS03-APN32405180A(E)-SS1003	1	7/29/2016		mg/kg	7.1	11.1	96.8	42.3
				MRS03-APN32405180A(E)-SS2001	2	7/29/2016		mg/kg	3	11.2	11.9	39.5
				MRS03-APN32405180A(E)-SS2002	2	7/29/2016		mg/kg	2.1 J	11	11.4	37.6
				MRS03-APN32405180A(E)-SS2003	2	7/29/2016		mg/kg	2.8	10.3	10.3	37
	32405180A(W)	3950	E. Lum Ave	MRS03-APN32405180A(W)-SS001	0	12/15/2014	1	mg/kg	4.5	13.3	27.9	78.8
				MRS03-APN32405180A(W)-SS1001	1	11/4/2015		mg/kg	3.8	12.4	16.7	56.4
				MRS03-APN32405180A(W)-SS2001	2	11/4/2015		mg/kg	2.9	11.7	10.8	48.3
				MRS03-APN32405180A(W)-SS3001	3	11/4/2015		mg/kg	4.9	9.3	8.9	37.8
				MRS03-APN32405180A(W)-SS4001	4	11/4/2015	2	mg/kg	6.4	10.3	8	34.5

TABLE 3-4
SUMMARY OF METALS CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase	Analytes	Antimony	Copper	Lead	Zinc
27	32405181	3940	E. Lum Ave	MRS03-APN32405181-SS001	0	7/26/2016	1	mg/kg	1.2 J	53.1	21.3	80.5
				MRS03-APN32405181-SS002	0	7/26/2016		mg/kg	1.3 J	53.9	29.6	82.5
				MRS03-APN32405181-SS003	0	7/26/2016		mg/kg	2.3 J	60.5	23.5	85
28	32405182	3936	E. Lum Ave	MRS03-APN32405182-SS001	0	12/4/2014	1	mg/kg	5.3	19.9	29.4	95.1
				MRS03-APN32405182-SS1001	1	7/29/2016	2	mg/kg	3.1	13	39.4	51.4
				MRS03-APN32405182-SS1002	1	7/29/2016		mg/kg	13.2	14.1	451	49
				MRS03-APN32405182-SS1003	1	7/29/2016		mg/kg	4.`	14.9	22.5	53.8
				MRS03-APN32405182-SS2001	2	7/29/2016		mg/kg	3.1	12.2	13.2	44.9
				MRS03-APN32405182-SS2002	2	7/29/2016		mg/kg	3.7	12.2	69.7	48.3
				MRS03-APN32405182-SS2003	2	7/29/2016		mg/kg	3.8	11.9	15.7	41.6
29	32405194B(C)	3876	E. Lum Ave	MRS03-APN32405194B(C)-SS001	0	12/15/2014	1	mg/kg	4.2	12.5	20.5	113
				MRS03-APN32405194B(C)-SS1001	1	6/10/2015	2	mg/kg	3.8	8.6	10.2	57
				MRS03-APN32405194B(C)-SS1002	1	6/10/2015		mg/kg	33	8.8	9.9	43.8
				MRS03-APN32405194B(C)-SS1003	1	6/10/2015		mg/kg	3.7	9	9.7	44
				MRS03-APN32405194B(C)-SS2001	2	6/10/2015		mg/kg	2.9	8.8	8.3	41.8
				MRS03-APN32405194B(C)-SS2002	2	6/10/2015		mg/kg	2.2 J	8.6	8.6	41.4
				MRS03-APN32405194B(C)-SS2003	2	6/10/2015		mg/kg	2.2 J	8.9	8.4	40.6
	32405194B(E)	3876	E. Lum Ave	MRS03-APN32405194B(E)-SS001	0	12/15/2014	1	mg/kg	3.5	12.5	24	67.5
				MRS03-APN32405194B(E)-SS1001	1	6/10/2015	2	mg/kg	2.7	11.3	10.4	45.6
				MRS03-APN32405194B(E)-SS1002	1	6/10/2015		mg/kg	3	10.8	9.5	43.3
				MRS03-APN32405194B(E)-SS1003	1	6/10/2015		mg/kg	2.9	10.6	9.7	44.2
				MRS03-APN32405194B(E)-SS2001	2	6/10/2015		mg/kg	3.2	11.7	9.8	47.1
				MRS03-APN32405194B(E)-SS2002	2	6/10/2015		mg/kg	3.3	11.6	10.3	49.9
				MRS03-APN32405194B(E)-SS2003	2	6/10/2015		mg/kg	2.3 J	11.7	10.2	50.3
	32405194B(W)	3876	E. Lum Ave	MRS03-APN32405194B(W)-SS001	0	12/15/2014	1	mg/kg	5	13.5	22.4	82.2
				MRS03-APN32405194B(W)-SS1001	1	6/9/2015	2	mg/kg	3.2	11	11	48.4
				MRS03-APN32405194B(W)-SS1002	1	6/9/2015		mg/kg	2.2 J	11	10.9	48.9
				MRS03-APN32405194B(W)-SS1003	1	6/9/2015		mg/kg	2.9	20.1	10.1	47.5
				MRS03-APN32405194B(W)-SS2001	2	6/9/2015		mg/kg	3.3	12.7	10.7	51.5
				MRS03-APN32405194B(W)-SS2002	2	6/9/2015		mg/kg	3	13.6	11.3	54.6
				MRS03-APN32405194B(W)-SS2003	2	6/9/2015		mg/kg	3.1	13.1	11.2	53.2
30	32405205A(E)	3925	E. Ryan Ave	MRS03-APN32405205A(E)-SS001	0	4/16/2015	1	mg/kg	4	14.7	21.7	82.5
				MRS03-APN32405205A(E)-SS002	0	4/16/2015		mg/kg	3.9	14.4	22.7	82.1
				MRS03-APN32405205A(E)-SS003	0	4/16/2015		mg/kg	3.9	14.4	22.1	84.9
				MRS03-APN32405205A(E)-SS1001	1	2/7/2017	2	mg/kg	7.3	13.6	27.1	56.7
				MRS03-APN32405205A(E)-SS1002	1	2/7/2017		mg/kg	6.6	12	27.6	55.6
				MRS03-APN32405205A(E)-SS1003	1	2/7/2017		mg/kg	7	12.7	63.4	55.8
				MRS03-APN32405205A(E)-SS2001	2	2/7/2017		mg/kg	5.5	15.4	16.8	56.2
				MRS03-APN32405205A(E)-SS2002	2	2/7/2017		mg/kg	7.1	15.9	15.3	55.8
				MRS03-APN32405205A(E)-SS2003	2	2/7/2017		mg/kg	5.6	15	15.2	54.6
	32405205A(W)	3925	E. Ryan Ave	MRS03-APN32405205A(W)-SS001	0	4/16/2015	1	mg/kg	3.2	12.7	13.9	55.1
				MRS03-APN32405205A(W)-SS002	0	4/16/2015		mg/kg	3.8	18.2	16.8	64.5
				MRS03-APN32405205A(W)-SS003	0	4/16/2015		mg/kg	3.2	121	21.9	55.3
				MRS03-APN32405205A(W)-SS1001	1	2/8/2017	2	mg/kg	5.9	15.5	23.6	55.4
				MRS03-APN32405205A(W)-SS1002	1	2/8/2017		mg/kg	7	14.8	24.8	51
				MRS03-APN32405205A(W)-SS1003	1	2/8/2017		mg/kg	6.8	13.9	21.5	50.1
				MRS03-APN32405205A(W)-SS2001	2	2/8/2017		mg/kg	6.2	15.9	18.9	56.2
				MRS03-APN32405205A(W)-SS2002	2	2/8/2017		mg/kg	6.2	15.8	18.2	56
				MRS03-APN32405205A(W)-SS2003	2	2/8/2017		mg/kg	5.6	16.3	18.4	54
31	32405208	3939	E. Ryan Ave	MRS03-APN32405208-SS001	0	4/10/2015	1	mg/kg	4.4	17.9	23.5	98.1
				MRS03-APN32405208-SS002	0	4/10/2015		mg/kg	5.1	17.1	43.3	103
				MRS03-APN32405208-SS003	0	410/2015		mg/kg	4.5	16.3	36.1	99.2
32	32405270	3980	E. Thompson Ave	MRS03-APN32405270-SS001	0	1/26/2016	1	mg/kg	2 J	14	37	63.1
				MRS03-APN32405270-SS002	0	1/26/2016		mg/kg	1.6 J	15	38.4	62.7
				MRS03-APN32405270-SS003	0	1/26/2016		mg/kg	2.7	35.6	97.8	70.8
				MRS03-APN32405270-SS1001	1	1/26/2016		mg/kg	2 J	12.3	17.8	47.4
				MRS03-APN32405270-SS1002	1	1/26/2016		mg/kg	2.7	13.1	18.7	50.1
				MRS03-APN32405270-SS1003	1	1/26/2016		mg/kg	3.4	12.8	59.7	49.2
				MRS03-APN32405270-SS2001	2	1/26/2016		mg/kg	2.1 J	11.8	15.1	46.7
				MRS03-APN32405270-SS2002	2	1/26/2016		mg/kg	1.9 J	12.1	14.1	47.4
				MRS03-APN32405270-SS2003	2	1/26/2016		mg/kg	2.7	12.7	14	48.5
33	32405272A (E)	3970	E. Thompson Ave	MRS03-APN32405272A(E)-SS001	0	1/26/2016	1	mg/kg	5.6	13.2	342	85.3
				MRS03-APN32405272A(E)-SS002	0	1/26/2016		mg/kg	3.6	13.6	71.5	110
				MRS03-APN32405272A(E)-SS003	0	1/26/2016		mg/kg	4.3	13.4	77.5	49.9
				MRS03-APN32405272A(E)-SS1001	1	3/9/2016	2	mg/kg	1.9 J	9.7	18.8	41.2
				MRS03-APN32405272A(E)-SS1002	1	3/9/2016		mg/kg	3.8	10.3	56.5	44.3
				MRS03-APN32405272A(E)-SS1003	1	3/9/2016		mg/kg	2.3 J	9.9	19.1	44.4
				MRS03-APN32405272A(E)-SS2001	2	3/9/2016		mg/kg	2.3 J	10.3	12.1	45.6
				MRS03-APN32405272A(E)-SS2002	2	3/9/2016		mg/kg	2.4 J	10.4	63.5	42.9
				MRS03-APN32405272A(E)-SS2003	2	3/9/2016		mg/kg	2.2 J	10.1	11.2	45.1
	32405272A (W)	3970	E. Thompson Ave	MRS03-APN32405272A(W)-SS001	0	1/28/2016	1	mg/kg	5.8	18.8	23.8	66.9
				MRS03-APN32405272A(W)-SS002	0	1/28/2016		mg/kg	5.6	20.3	22.9	67
				MRS03-APN32405272A(W)-SS003	0	1/28/2016		mg/kg	6.2	17.9	23.3	68.5
				MRS03-APN32405272A(W)-SS1001	1	3/9/2016	2	mg/kg	2.7	12.5	17.1	48
				MRS03-APN32405272A(W)-SS1002	1	3/9/2016		mg/kg	2.4 J	11.7	15.6	44.3
				MRS03-APN32405272A(W)-SS1003	1	3/9/2016		mg/kg	2.5	12.1	20.8	47.9
				MRS03-APN32405272A(W)-SS2001	2	3/9/2016		mg/kg	2 J	11.6	14.9	49.8
				MRS03-APN32405272A(W)-SS2002	2	3/9/2016		mg/kg	2.2 J	11.7	17.5	47.7
				MRS03-APN32405272A(W)-SS2003	2	3/9/2016		mg/kg	2.1 J	11.4	32.8	47.7
34	32405273	3966	E. Thompson Ave	MRS03-APN32405273-SS1001	1	6/11/2015	1	mg/kg	2.6	13	18.2	49.8
				MRS03-APN32405273-SS1002	1	6/11/2015		mg/kg	2.4 J	12.4	23.1	48.5
				MRS03-APN32405273-SS1003	1	6/11/2015		mg/kg	3.3	12.6	20	48.7
				MRS03-APN32405273-SS2001	2	6/11/2015		mg/kg	2.7	11.4	9.7	46
				MRS03-APN32405273-SS2002	2	6/11/2015		mg/kg	3.9	11.6	10.3	48.4
				MRS03-APN32405273-SS2003	2	6/11/2015		mg/kg	3.4	11.9	10.1	49.5

TABLE 3-4
SUMMARY OF METALS CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase	Analytes	Antimony	Copper	Lead	Zinc
35	32405274	3960	E. Thompson Ave	MRS03-APN32405274-SS001	0	12/4/2014	1	mg/kg	6.8	17.1	50.9	104
				MRS03-APN32405274-SS1001	1	6/11/2015	2	mg/kg	3	10.5	23.6	42.4
				MRS03-APN32405274-SS1002	1	6/11/2015		mg/kg	3.5	10.2	112	41.9
				MRS03-APN32405274-SS1003	1	6/11/2015		mg/kg	3.1	10.4	36.5	42.7
				MRS03-APN32405274-SS2001	2	6/11/2015		mg/kg	3.8	11.3	10.4	47.1
				MRS03-APN32405274-SS2002	2	6/11/2015		mg/kg	2.8	11.1	9.8	46.3
				MRS03-APN32405274-SS2003	2	6/11/2015		mg/kg	2.9	11.1	10.5	45.5
36	32405276A (E)	3950	E. Thompson Ave	MRS03-APN32405276A(E)-SS001	0	12/5/2014	1	mg/kg	6.4	10.6	31.2	60.5
				MRS03-APN32405276A(E)-SS1001	1	6/11/2015	2	mg/kg	3.5	11	27.1	44.3
				MRS03-APN32405276A(E)-SS2001	2	6/11/2015		mg/kg	2.9	9.4	8.7	40.2
				MRS03-APN32405276A(E)-SS3001	3	6/11/2015		mg/kg	3.5	7.6	7.4	38.1
	32405276A (W)	3950	E. Thompson Ave	MRS03-APN32405276A(W)-SS001	0	12/5/2014	1	mg/kg	6.2	11.5	122	59.1
				MRS03-APN32405276A(W)-SS1001	1	6/11/2015	2	mg/kg	2.7	11.7	42.3	47.3
				MRS03-APN32405276A(W)-SS2001	2	6/11/2015		mg/kg	3.4	10.6	10.1	43.8
				MRS03-APN32405276A(W)-SS3001	3	6/11/2015		mg/kg	3.4	7.5	7.8	33.2
37	32405287	3896	E. Thompson Ave	MRS03-APN32405287-SS001	0	11/3/2015	1	mg/kg	3.3	10.8	14.9	64.9
				MRS03-APN32405287-SS002	0	11/3/2015		mg/kg	2.6	10.1	14.4	64.3
				MRS03-APN32405287-SS003	0	11/3/2015		mg/kg	2.8	10.2	14	63.9
				MRS03-APN32405287-SS1001	1	4/27/2016	2	mg/kg	3.8	10.1	11.2	41.9
				MRS03-APN32405287-SS1002	1	4/27/2016		mg/kg	3.5	10.1	10.8	40.8
				MRS03-APN32405287-SS1003	1	4/27/2016		mg/kg	4	11.8	10.9	42
				MRS03-APN32405287-SS2001	2	4/27/2016		mg/kg	2.4 J	11.4	10	44.8
				MRS03-APN32405287-SS2002	2	4/27/2016		mg/kg	3.8	11.1	10.2	43.7
				MRS03-APN32405287-SS2003	2	4/27/2016		mg/kg	2.9	10.6	9.7	42.8
38	32405288	3890	E. Thompson Ave	MRS03-APN32405288-SS001	0	11/3/2015	1	mg/kg	5.5	35.1	15.3	71.3
				MRS03-APN32405288-SS002	0	11/3/2015		mg/kg	5.2	16.6	21.4	70.9
				MRS03-APN32405288-SS003	0	11/3/2015		mg/kg	3.6	30.5	17.5	77.3
39	32405295	3887	E. Lum Ave	MRS03-APN32405295-SS001	0	11/3/2015	1	mg/kg	5.5	9.9	12.6	45.1
				MRS03-APN32405295-SS1001	1	4/6/2016	2	mg/kg	3.3	8.1	9.4	36.8
				MRS03-APN32405295-SS1002	1	4/6/2016		mg/kg	3.3	8.5	9.7	41.1
				MRS03-APN32405295-SS1003	1	4/6/2016		mg/kg	3.8	8.1	9.5	38
				MRS03-APN32405295-SS2001	2	4/6/2016		mg/kg	2.9	8.5	8.6	39
				MRS03-APN32405295-SS2002	2	4/6/2016		mg/kg	2.7	8.7	8.6	38.9
				MRS03-APN32405295-SS2003	2	4/6/2016		mg/kg	3	8.8	8.6	40.3
40	32405296	3895	E. Lum Ave	MRS03-APN32405296-SS001	0	12/5/2014	1	mg/kg	5.5	11.5	12.9	53.1
				MRS03-APN32405296-SS1001	1	6/8/2015		mg/kg	3.1	9.7	10.6	44.3
				MRS03-APN32405296-SS1002	1	6/8/2015	2	mg/kg	3	9.7	10.1	42.1
				MRS03-APN32405296-SS1003	1	6/8/2015		mg/kg	2.8	9.8	9.6	43.2
				MRS03-APN32405296-SS2001	2	6/8/2015		mg/kg	2 U	9.7	8.3	43.5
				MRS03-APN32405296-SS2002	2	6/8/2015		mg/kg	2.5	10.5	9.1	46.1
				MRS03-APN32405296-SS2003	2	6/8/2015		mg/kg	2 J	10.1	8.9	44.2
41	32405297	3899	E. Lum Ave	MRS03-APN32405297-SS001	0	12/5/2014	1	mg/kg	4	10.1	12.7	60.3
				MRS03-APN32405297-SS1001	1	7/27/2016	2	mg/kg	2.4 J	8.7	11.9	35.6
				MRS03-APN32405297-SS1002	1	7/27/2016		mg/kg	3.3	8.8	10.9	34.1
				MRS03-APN32405297-SS1003	1	7/27/2016		mg/kg	2.8	8.6	11.3	35.4
				MRS03-APN32405297-SS2001	2	7/28/2016		mg/kg	3.3	10.6	10.2	37.9
				MRS03-APN32405297-SS2002	2	7/28/2016		mg/kg	3.7	10.2	9.9	34.5
				MRS03-APN32405297-SS2003	2	7/28/2016		mg/kg	1.9 J	10.4	10.1	37.9
42	32405306	3945	E. Lum Ave	MRS03-APN32405306-SS001	0	12/10/2014	1	mg/kg	4.6	29.8	34.7	57.3
				MRS03-APN32405306-SS1001	1	3/16/2016	2	mg/kg	3.2	22.9	33.7	58.9
				MRS03-APN32405306-SS1002	1	3/16/2016		mg/kg	2.8	17.7	24.4	48.1
				MRS03-APN32405306-SS1003	1	3/16/2016		mg/kg	3.7	21.4	31.1	64
				MRS03-APN32405306-SS2001	2	3/16/2016		mg/kg	2.2 J	20.2	16.3	50.9
				MRS03-APN32405306-SS2002	2	3/16/2016		mg/kg	2.5	14.7	12.9	47.3
				MRS03-APN32405306-SS2003	2	3/16/2016		mg/kg	1.9 J	12.6	12.4	44.1
43	32405308A(E)	3955	E. Lum Ave	MRS03-APN32405308A(E)-SS001	0	11/3/2015	1	mg/kg	3.3	10.8	66.1	71.1
				MRS03-APN32405308A(E)-SS1001	1	7/26/2016	2	mg/kg	3.5	10.9	96.9	44.2
				MRS03-APN32405308A(E)-SS1002	1	7/26/2016		mg/kg	3.2	11.5	32.4	48.7
				MRS03-APN32405308A(E)-SS1003	1	7/26/2016		mg/kg	2.9	11.4	21.4	44.1
				MRS03-APN32405308A(E)-SS2001	2	7/26/2016		mg/kg	3.9	10.7	11.1	42.8
				MRS03-APN32405308A(E)-SS2002	2	7/26/2016		mg/kg	3.3	11.1	11	41.9
				MRS03-APN32405308A(E)-SS2003	2	7/26/2016		mg/kg	2.6	10.5	10.2	37.3
	32405308A(W)	3955	E. Lum Ave	MRS03-APN32405308A(W)-SS001	0	11/3/2015	1	mg/kg	5.7	9.7	34.8	44.9
				MRS03-APN32405308A(W)-SS1001	1	2/7/2017	2	mg/kg	10.7	12.2	63.5	47.9
				MRS03-APN32405308A(W)-SS1002	1	2/7/2017		mg/kg	8.4	13.8	27.8	47.1
				MRS03-APN32405308A(W)-SS1003	1	2/7/2017		mg/kg	10.9	12.6	25	43.9
				MRS03-APN32405308A(W)-SS2001	2	2/7/2017		mg/kg	6.3	13	12.8	48.2
				MRS03-APN32405308A(W)-SS2002	2	2/7/2017		mg/kg	6.6	13.2	12	48
				MRS03-APN32405308A(W)-SS2003	2	2/7/2017		mg/kg	6.2	13.6	12	50.8
44	32405309	3959	E. Lum Ave	MRS03-APN32405309-SS001	0	11/6/2015	1	mg/kg	3.9	9.5	28.1	54.9
				MRS03-APN32405309-SS002	0	11/6/2015		mg/kg	8.5	10.2	213	57
				MRS03-APN32405309-SS003	0	11/6/2015		mg/kg	5.2	9.6	70.7	55.8
45	32405310	3965	E. Lum Ave	MRS03-APN32405310-SS001	0	11/6/2015	1	mg/kg	4.8	10.1	102	53.2
				MRS03-APN32405310-SS002	0	11/6/2015		mg/kg	3.5	10.1	52.6	56
				MRS03-APN32405310-SS003	0	11/6/2015		mg/kg	3.7	10.6	45	56.2
46	32436014	3954	E. Lass Ave	MRS03-APN32436014-SS001	0	12/3/2014	1	mg/kg	8.9	12.7	19	102
				MRS03-APN32436014-SS1001	1	4/17/2016	2	mg/kg	3.3	11	16.1	44.2
				MRS03-APN32436014-SS1002	1	4/17/2016		mg/kg	6.9	11.4	204	46.4
				MRS03-APN32436014-SS1003	1	4/17/2016		mg/kg	3	11	13.7	44.9
				MRS03-APN32436014-SS2001	2	4/17/2016		mg/kg	3.5	10.8	10.1	44.6
				MRS03-APN32436014-SS2002	2	4/17/2016		mg/kg	2.6	10.4	9.9	41.9
				MRS03-APN32436014-SS2003	2	4/7/2016		mg/kg	2.6	10.7	10	42.4

TABLE 3-4
SUMMARY OF METALS CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase	Analytes	Antimony	Copper	Lead	Zinc
47	32436015	3958	E. Lass Ave	MRS03-APN32436015-SS001	0	12/3/2014	1	mg/kg	8	14.6	21.4	37.6
				MRS03-APN32436015-SS1001	1	9/23/2015	2	mg/kg	4.4	9.1	13.7	36.7
				MRS03-APN32436015-SS2001	2	9/23/2015		mg/kg	4.3	9.8	10.4	38.7
				MRS03-APN32436015-SS3001	3	9/23/2015		mg/kg	1.1 J	9.2	9.1	40.3
				MRS03-APN32436015-SS3002	3	9/24/2015		mg/kg	4.1	8.9	8.8	37.9
				MRS03-APN32436015-SS3003	3	9/24/2015		mg/kg	4	9.4	10	39.4
				MRS03-APN32436015-SS4001	4	9/23/2015		mg/kg	4.2	8	8.5	35.5
				MRS03-APN32436015-SS4002	4	9/24/2015		mg/kg	4.4	8.2	8.5	37.7
				MRS03-APN32436015-SS4003	4	9/24/2015		mg/kg	4.6	8.1	8.3	36.2
48	32436021	3979	E. Lass Ave	MRS03-APN32436021-SS001	0	1/25/2016	1	mg/kg	2.5	20.8	17.7	38.7
				MRS03-APN32436021-SS002	0	1/25/2016		mg/kg	1.9 J	20.3	18	37.9
				MRS03-APN32436021-SS003	0	1/25/2016		mg/kg	1.7 J	17.4	17.7	37.1
49	32436022	3975	E. Lass Ave	MRS03-APN32436022-SS001	0	12/3/2014	1	mg/kg	6.8	14.2	17.6	65.2
				MRS03-APN32436022-SS1001	1	7/25/2016	2	mg/kg	21. 1 J	12.5	16.4	45.2
				MRS03-APN32436022-SS1002	1	7/25/2016		mg/kg	4.3	12.1	165	40.8
				MRS03-APN32436022-SS1003	1	7/25/2016		mg/kg	3.3	11.8	62.3	42.4
				MRS03-APN32436022-SS2001	2	7/25/2016		mg/kg	2.5	13.5	15	44.1
				MRS03-APN32436022-SS2002	2	7/25/2016		mg/kg	2.6	13.5	14.4	48
				MRS03-APN32436022-SS2003	2	7/25/2016		mg/kg	2.5	14	14	43
50	32436023	3971	E. Lass Ave	MRS03-APN32436023-SS001	0	12/10/2014	1	mg/kg	3.6	18.8	14.4	39.7
				MRS03-APN32436023-SS002	0	12/10/2014		mg/kg	3.6	18.4	13.5	39.4
				MRS03-APN32436023-SS003	0	12/10/2014		mg/kg	4.1	19.6	13.9	39.3
51	32436026	3959	E. Lass Ave	MRS03-APN32436026-SS001	0	12/4/2014	1	mg/kg	7	13.2	11.8	38.4
				MRS03-APN32436026-SS002	0	4/7/2015		mg/kg	2.6	15.3	37	35.6
				MRS03-APN32436026-SS003	0	4/7/2015		mg/kg	2 J	16.2	17.6	47.1
52	32437020	3980	E. Packard Ave	MRS03-APN32437020-SS001	0	4/5/2016	1	mg/kg	3	11.5	12.3	3 9.1
				MRS03-APN32437020-SS002	0	4/5/2016		mg/kg	3.1	11.5	13	37.4
				MRS03-APN32437020-SS003	0	4/5/2016		mg/kg	3.4	11.9	13.9	41.4
53	32439003	3974	E. Snavely Ave	MRS03-APN32439003-SS001	0	1/27/2016	1	mg/kg	3.8	15.2	23.8	44.7
				MRS03-APN32439003-SS002	0	1/27/2016		mg/kg	5	15.1	56.7	49.3
				MRS03-APN32439003-SS003	0	1/27/2016		mg/kg	3.9	16	45.4	48.6
				MRS03-APN32439003-SS1001	1	3/7/2016	2	mg/kg	1.8 J	13.9	19.4	48.5
				MRS03-APN32439003-SS1002	1	3/7/2016		mg/kg	1.4 J	14.6	15.5	51.6
				MRS03-APN32439003-SS1003	1	3/7/2016		mg/kg	2 U	12.1	24.9	47.2
				MRS03-APN32439003-SS2001	2	3/7/2016		mg/kg	1.7 J	13.3	11	49.8
				MRS03-APN32439003-SS2002	2	3/7/2016		mg/kg	2.4 J	12.8	11.1	48.8
				MRS03-APN32439003-SS2003	2	3/7/2016		mg/kg	2.0 J	13.40	11.30	50.60
54	32439004	3970	E. Snavely Ave	MRS03-APN32439004-SS001	0	2/9/2017	1	mg/kg	9.9	15.1	21.4	43.9
				MRS03-APN32439004-SS002	0	2/9/2017		mg/kg	6.9	14.8	22.4	45.4
				MRS03-APN32439004-SS003	0	2/9/2017		mg/kg	8.7	14.5	107	45.4
				MRS03-APN32439004-SS1001	1	2/9/2017		mg/kg	3.8	12	20.8	48.5
				MRS03-APN32439004-SS1002	1	2/9/2017		mg/kg	4.9	12.2	18.4	48.8
				MRS03-APN32439004-SS1003	1	2/9/2017		mg/kg	4.8	12.2	64.7	48.5
				MRS03-APN32439004-SS2001	2	2/9/2017		mg/kg	4.5	12.4	11	48.8
				MRS03-APN32439004-SS2002	2	2/9/2017		mg/kg	4.8	13.2	11.7	55
				MRS03-APN32439004-SS2003	2	2/9/2017		mg/kg	5.2	11.9	11	45.6
55	32439005	3962	E. Snavely Way	MRS03-APN32439005-SS001	0	11/5/2015	1	mg/kg	4	10.3	49.5	45.3
				MRS03-APN32439005-SS1001	1	4/5/2016	2	mg/kg	2.9	14	20.7	51.2
				MRS03-APN32439005-SS1002	1	4/5/2016		mg/kg	3.1	13.8	64.9	46.8
				MRS03-APN32439005-SS1003	1	4/5/2016		mg/kg	3.1	14	26.6	47.4
				MRS03-APN32439005-SS2001	2	4/5/2016		mg/kg	2 J	13.7	12.1	48.8
				MRS03-APN32439005-SS2002	2	4/5/2016		mg/kg	2.3 J	11.7	11.1	48.5
				MRS03-APN32439005-SS2003	2	4/5/2016		mg/kg	2.1 J	14.3	12.9	49.4
56	32439006	3960	E. Snavely Way	MRS03-APN32439006-SS001	0	12/9/2014	1	mg/kg	6	11.4	208	50.3
				MRS03-APN32439006-SS1001	1	3/7/2016	2	mg/kg	4.1	14	223	46.8
				MRS03-APN32439006-SS1002	1	3/7/2016		mg/kg	3.1	14.2	21.9	47.2
				MRS03-APN32439006-SS1003	1	3/7/2016		mg/kg	3.2	13.4	30.5	46.4
				MRS03-APN32439006-SS2001	2	3/7/2016		mg/kg	3	13.2	37.3	47
				MRS03-APN32439006-SS2002	2	3/7/2016		mg/kg	2.3 J	12.8	12.4	47.6
				MRS03-APN32439006-SS2003	2	3/7/2016		mg/kg	2.6	13.1	28	48.3
57	32439007	3958	E. Snavely Way	MRS03-APN32439007-SS001	0	12/9/2014	1	mg/kg	3.9	10.6	32.3	48.8
				MRS03-APN32439007-SS1001	1	4/26/2016	2	mg/kg	3.2	11.9	21.8	46.3
				MRS03-APN32439007-SS1002	1	4/26/2016		mg/kg	4.2	12.3	147	49.2
				MRS03-APN32439007-SS1003	1	4/26/2016		mg/kg	3.7	12.4	29.9	48.7
				MRS03-APN32439007-SS2001	2	4/26/2016		mg/kg	2.8	11.4	10.9	43.9
				MRS03-APN32439007-SS2002	2	4/26/2016		mg/kg	3	12	11.5	45.7
				MRS03-APN32439007-SS2003	2	4/26/2016		mg/kg	2.9	11.4	11.5	43.9
58	32439013	3940	E. Snavely Cir	MRS03-APN32439013-SS001	0	7/18/2016	1	mg/kg	4	14.5	22.4	50.5
				MRS03-APN32439013-SS002	0	7/18/2016		mg/kg	3.8	16.7	23.4	48.6
				MRS03-APN32439013-SS003	0	7/18/2016		mg/kg	4	14.5	20.7	47.3
				MRS03-APN32439013-SS1001	1	7/18/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439013-SS1002	1	7/18/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439013-SS1003	1	7/18/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439013-SS2001	2	7/18/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439013-SS2002	2	7/18/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439013-SS2003	2	7/18/2016		mg/kg	N/A	N/A	N/A	N/A
59	32439014	3936	E. Snavely Ave	MRS03-APN32439014-SS001	0	12/3/2014	1	mg/kg	3.8	11.8	15.3	46
				MRS03-APN32439014-SS1001	1	4/4/2016	2	mg/kg	2.7	13.6	14.6	47.8
				MRS03-APN32439014-SS1002	1	4/4/2016		mg/kg	2.7	12.9	15.6	44.2
				MRS03-APN32439014-SS1003	1	4/4/2016		mg/kg	2.4 J	13.1	15.1	45.1
				MRS03-APN32439014-SS2001	2	4/4/2016		mg/kg	1.2 J	15.30	13.30	51.10
				MRS03-APN32439014-SS2002	2	4/4/2016		mg/kg	1.6 J	15.9	13.1	55.2
				MRS03-APN32439014-SS2003	2	4/4/2016		mg/kg	1.5 J	16.4	13.6	55.2

TABLE 3-4
SUMMARY OF METALS CONCENTRATIONS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI
(DECEMBER 2014 TO FEBRUARY 2017)

#	APN #	Street #	Street Name	Sample ID	Sample Depth (ft)	Sampling Date	Phase	Analytes	Antimony	Copper	Lead	Zinc
60	32439015	3930	E. Snavely Plz	MRS03-APN32439015-SS001	0	11/5/2015	1	mg/kg	4.3	10.4	14.6	43.6
				MRS03-APN32439015-SS1001	1	4/7/2016	2	mg/kg	2.8	9.9	11.2	39.6
				MRS03-APN32439015-SS1002	1	4/8/2016		mg/kg	2.4 J	10.7	11	44.1
				MRS03-APN32439015-SS1003	1	4/8/2016		mg/kg	2.3 J	10.7	10.9	45
				MRS03-APN32439015-SS2001	2	4/8/2016		mg/kg	2 J	11.2	10	44.1
				MRS03-APN32439015-SS2002	2	4/8/2016		mg/kg	1.7 J	11.2	10.3	44.3
				MRS03-APN32439015-SS2003	2	4/8/2016		mg/kg	2.3 J	10.3	9.4	39.5
61	32439016	3928	E. Snavely Plz	MRS03-APN32439016-SS001	0	11/2/2015	1	mg/kg	3.8	10.4	16.7	42.4
				MRS03-APN32439016-SS1001	1	3/8/2016	2	mg/kg	3.1	13.2	13.3	45.1
				MRS03-APN32439016-SS1002	1	3/8/2016		mg/kg	2.3 J	12.8	13.5	45.6
				MRS03-APN32439016-SS1003	1	3/8/2016		mg/kg	2.2 J	12.9	12.5	45.5
				MRS03-APN32439016-SS2001	2	3/8/2016		mg/kg	1.9 J	14.4	11.5	49.9
				MRS03-APN32439016-SS2002	2	3/8/2016		mg/kg	2.4 J	13.7	11.4	47.1
				MRS03-APN32439016-SS2003	2	3/8/2016		mg/kg	1.8 J	13.2	10.7	47.2
62	32439017	3926	E. Snavely Plz	MRS03-APN32439017-SS001	0	7/19/2016	1	mg/kg	3.5	16.6	14.9	45
				MRS03-APN32439017-SS002	0	7/19/2016		mg/kg	3.1	16.6	13.1	44.8
				MRS03-APN32439017-SS003	0	7/19/2016		mg/kg	2.8	16.9	15.2	45.8
				MRS03-APN32439017-SS1001	1	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439017-SS1002	1	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439017-SS1003	1	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439017-SS2001	2	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439017-SS2002	2	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439017-SS2003	2	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
63	32439026	3975	E. Snavely Ave	MRS03-APN32439026-SS001	0	1/27/2016	1	mg/kg	5.8	14.5	20.3	51
				MRS03-APN32439026-SS002	0	1/27/2016		mg/kg	5.1	13.9	17.7	49.6
				MRS03-APN32439026-SS003	0	1/27/2016		mg/kg	5.7	14.1	20.3	53.8
				MRS03-APN32439026-SS1001	1	3/7/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439026-SS1002	1	3/7/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439026-SS1003	1	3/7/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439026-SS2001	2	3/7/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439026-SS2002	2	3/7/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439026-SS2003	2	3/7/2016		mg/kg	N/A	N/A	N/A	N/A
64	32439032	3951	E. Snavely Ave	MRS03-APN32439032-SS001	0	7/19/2016	1	mg/kg	3.4	12.8	15	50.1
				MRS03-APN32439032-SS002	0	7/19/2016		mg/kg	3.5	13.4	15.9	50.3
				MRS03-APN32439032-SS003	0	71/9/2016		mg/kg	2.9	13.5	16	51
				MRS03-APN32439032-SS1001	1	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439032-SS1002	1	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439032-SS1003	1	7/19/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439032-SS2001	2	7/20/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439032-SS2002	2	7/20/2016		mg/kg	N/A	N/A	N/A	N/A
				MRS03-APN32439032-SS2003	2	7/20/2016		mg/kg	N/A	N/A	N/A	N/A
65	32439033	3947	E. Snavely Ave	MRS03-APN32439033-SS001	0	11/5/2015	1	mg/kg	4.2	12.3	12.6	45.5
				MRS03-APN32439033-SS002	0	11/5/2015		mg/kg	3.7	11.8	12.1	43.0
				MRS03-APN32439033-SS003	0	11/5/2015		mg/kg	4.2	13.2	12.6	46.3
				MRS03-APN32439033-SS1001	1	4/4/2016	2	mg/kg	3.5	13.4	35.5	43.2
				MRS03-APN32439033-SS1002	1	4/4/2016		mg/kg	3.7	14.6	16.2	48.5
				MRS03-APN32439033-SS1003	1	4/4/2016		mg/kg	4.1	14.6	16.2	47.1
				MRS03-APN32439033-SS2001	2	4/6/2016		mg/kg	2.9	13.9	12.8	51.5
				MRS03-APN32439033-SS2002	2	4/6/2016		mg/kg	2.9	13.6	13	43.1
				MRS03-APN32439033-SS2003	2	4/6/2016		mg/kg	2.8	13.9	13.5	44.4
66	32439035	3939	E. Snavely Ave	MRS03-APN32439035-SS1001	1	4/7/2016	2	mg/kg	3.1	19.9	18.5	45.1
				MRS03-APN32439035-SS1002	1	4/7/2016		mg/kg	3.5	18.2	16.3	44.8
				MRS03-APN32439035-SS1003	1	4/7/2016		mg/kg	4.1	25.1	18.9	46.9
				MRS03-APN32439035-SS2001	2	4/7/2016		mg/kg	3	12.4	11	47.7
				MRS03-APN32439035-SS2002	2	4/7/2016		mg/kg	2.9	14	11.4	52.7
				MRS03-APN32439035-SS2003	2	4/7/2016		mg/kg	2.6	12.9	11.4	48

Abbreviations and Notes:
(E) east section of subdivided parcel
J - estimated value; the analyte was positively identified
mg/kg - milligram per kilogram
U - not detected above the limit of detection
UJ - estimated non-detect
(W) west section of subdivided parcel

The 15 Skeet Ranges site was previously identified in USACE records as part of Munitions Response Site (MRS) 03. This designation was later changed, following the Site Inspection (Parsons 2011) to include the Site as part of MRS01. References to MRS03 are retained in portions of the RI report, including sample identifiers, for legacy reasons.

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																	
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32404211B	Surface (SS00)	95% UCL	6.26	18.4	94	95.1	1.47	NA	6.44	NA	8.81	116	72.5	138	75.2	54.7	127	21.5	163	1.49	90.4	5.3	50.2	198
32404211D*	0' to 1' BGS (SS100)	95% UCL	2.48	17.2	18.7	58.6	NA	NA	4.2	NA	7.9	59.1	58.4	120	38.5	149	80.8	NA	111	NA	41.8	4.1	43.7	124
	1' to 2' BGS (SS100)	95% UCL	2.93	14.1	11.6	49.8	NA	NA	NA	NA	NA	NA	1.7	4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
32404211E	0' to 1' BGS (SS200)	95% UCL	4.58	15.7	21.3	56.8	NA	NA	2.02	NA	8.29	60.9	19.9	51.2	23.7	13.5	NA	22.1	66.7	NA	22.6	3.63	33.6	60.7
	1' to 2' BGS (S200)	95% UCL	3.05	15.5	12.3	48.8	NA	NA	NA	NA	NA	40.4	NA	28.7	NA	9.35	NA	NA	17.2	NA	NA	NA	7.48	NA
32404212	Surface (S000)	95% UCL	7.48	27.9	188	68.1	NA	NA	1.49	NA	9.76	74.2	40.2	45.8	39.2	20.8	53.9	11.1	110	NA	NA	4.46	51.1	93.7
32404237A(E)*	2' to 3' BGS (S100)	95% UCL	5.29	10.6	11.4	39.1	NA	NA	NA	NA	3.90	NA	22.3	50.9	NA	49.0	20.7	NA	47.8	NA	15.0	0.800	23.7	41.9
	3' to 4' BGS (S100)	95% UCL	6.87	7.71	8.77	31.4	NA	NA	NA	NA	2.10	NA	15.3	46.4	NA	43.2	13.7	NA	26.3	NA	11.4	NA	13.1	17.9
32404237A(W)	2' to 3' BGS (S100)	95% UCL	4.81	13.1	9.85	47.1	1.11	5.66	7.61	4.88	33.1	179	130	276	141	79.4	209	35.4	307	8.39	129	10.4	148	320
	3' to 4' BGS (S100)	95% UCL	3.32	10.1	11.9	48.9	NA	NA	8.80	NA	19.2	111	97.3	207	108	61.3	172	26.4	242	3.26	92.9	11.0	118	224
32404240	Surface (S000)	95% UCL	8.88	14.3	10.5	73.4	1.30	2.74	5.60	NA	19.2	66.1	23.6	66.3	30.5	17.2	52.9	36.7	74.9	2.74	82.1	5.67	31.6	71.4
32404281*	Surface (S000)	95% UCL	7.02	9.79	15.2	123	NA	4.77	NA	NA	3.80	NA	24.3	49.4	NA	45.8	20.1	NA	44.5	NA	12.3	3.50	21.1	19.0
32404282A(E)	Surface (S000)	95% UCL	13.5	69.0	462	70.6	16.5	13.2	13.8	16.8	13.1	243	74.1	418	76.1	152	129	23.8	162	13.6	327	12.6	66.7	186
32404282A(W)	Surface (S000)	95% UCL	5.87	13.2	51.4	60.9	16.8	13.7	16.8	16.8	11.4	220	50.7	388	48.7	136	86.5	13.1	122	16.8	289	13.7	43.0	120
32404282B(E)	Surface (S000)	95% UCL	4.08	14.7	16.7	77.1	1.13	7.13	NA	NA	5.22	39.3	20.0	35.1	39.8	43.7	52.0	14.9	36.5	NA	40.6	5.97	14.6	57.3
32404282B(W)	Surface (S000)	95% UCL	4.52	15.5	15.5	65.9	1.49	7.34	NA	NA	3.58	22.4	14.6	19	NA	NA	33.6	NA	26.2	NA	1.49	7.78	8.34	38.6
32404484	2' to 3' BGS (S100)	95% UCL	6.45	11.8	10.9	45.1	NA	NA	3.99	NA	19.2	106	45.5	83.9	43.2	38.6	72.4	11.9	149	2.56	38.4	2.76	83.4	123
	3' to 4' BGS (S100)	95% UCL	4.66	10.4	8.95	40.9	8.10	45.8	54.7	NA	79.4	464	291	745	274	209	534	82.2	700	22.6	258	29.3	325	773

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																		
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32404485	Surface (S000)	95% UCL	10.3	13.2	20.1	61.2	4.60	8.47	13.8	NA	44.6	298	312	480	210	112	341	59	585	4.50	190	18.4	279	537
	0' to 1' BGS (S100)	95% UCL	7.05	11.8	12.0	41.5	NA	2.82	5.51	NA	10.1	93.7	116	152	62.7	59.7	148	NA	169	NA	86.3	8.15	61.2	188
	1' to 2' BGS (S200)	95% UCL	8.99	13.8	11.6	61.1	NA	NA	NA	NA	NA	4.16	5.22	9.29	NA	NA	NA	NA	11.4	NA	NA	NA	4.4	7.67
32404486	Surface (S000)	95% UCL	5.17	13.4	20.5	63.6	5.31	9.26	20.7	2.44	65.0	535	512	845	380	188	557	115	860	7.21	377	20.7	370	866
	0' to 1' BGS (S100)	95% UCL	5.48	15.1	14.7	58.1	2.14	2.74	5.79	NA	21.3	157	203	286	174	84.4	234	12.9	289	3.04	159	5.57	115	262
	1' to 2' BGS (S200)	95% UCL	6.35	16.2	12.6	64.6	NA	NA	3.22	NA	6.07	20.7	24.0	38.3	NA	19.0	3.22	NA	41.4	NA	19.0	NA	17.5	39.9
32404559	Surface (S000)	95% UCL	6.14	16.1	67.6	93.0	2.74	6.02	6.18	NA	11.9	110	63.3	114	72.0	81.3	135	35.1	149	NA	103	6.85	61.7	188
32404561C	2' to 3' BGS (S100)	95% UCL	2.35	11.3	11.6	45.9	NA	NA	4.88	NA	33.3	139	89.5	194	95.9	61.9	165	27.0	300	8.63	90.7	5.29	147	278
	3' to 4' BGS (S100)	95% UCL	3.76	8.52	8.50	36.3	1.13	5.64	4.95	16.0	6.90	33.9	18.1	40.7	21.8	26.5	49.4	14.0	54.9	3.65	28.2	6.56	30.1	66.8
32404571	Surface (S000)	95% UCL	11.8	16.9	19.3	109	3.42	5.76	5.18	NA	10.3	105	63.0	122	71.4	71.1	147	55.4	129	6.12	70.7	7.6	57.0	159
32404572	Surface (S000)	95% UCL	5.79	20.2	216	65.4	NA	NA	3.55	NA	6.25	96.1	95.5	106	93.2	108	98.5	28.0	118	1.31	76.7	3.28	38.1	116
	0' to 1' BGS (S100)	95% UCL	9.69	19.9	213	52.0	NA	NA	8.48	NA	NA	85.7	49.9	104	49.2	41.8	108	13.3	114	NA	44.4	4.80	38.6	134
	1' to 2' BGS (S200)	95% UCL	4.83	14.0	12.4	50.0	NA	NA	NA	NA	NA	5.10	5.60	32.0	6.13	NA	11.9	NA	9.64	NA	8.28	NA	NA	11.5
32404643*	2' to 3' BGS (S100)	95% UCL	5.9	9.74	10.1	37.4	NA	NA	NA	NA	5.60	8.90	40.0	81.9	18.0	93.1	48.0	NA	67.2	NA	30.2	1.70	31.3	63.7
	3' to 4' BGS (S100)	95% UCL	6.87	8.67	8.82	31.1	NA	NA	NA	NA	NA	NA	16.2	34.6	NA	NA	NA	NA	23.4	NA	NA	NA	10.9	NA
32404653	0' to 1' BGS (S100)	95% UCL	3.49	13.0	49.6	51.9	NA	29.2	136	70.3	208	1,380	1,020	1,770	1,040	877	1,890	238	2,890	NA	878	81.3	1,640	2,870
	1' to 2' BGS (S200)	95% UCL	2.06	12.3	11.2	49.3	NA	NA	NA	NA	NA	185	76.8	290	78	117	156	119	185	NA	202	NA	78.8	188

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																	
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32404655A(E)	Surface (S000)	95% UCL	6.61	NA	408	54.8	3.68	7.11	13.3	NA	38.6	299	244	487	242	182	400	64.5	502	6.67	222	17.7	224	567
	0' to 1' BGS (S100)	95% UCL	3.42	12.4	19.2	44.5	14.3	14.3	14.1	14.3	14.3	291	95.7	447	105	176	179	112	277	14.3	311	14.3	93.1	225
	1' to 2' BGS (S200)	95% UCL	3.81	13.1	12.6	47.8	NA	NA	NA	NA	NA	21.5	10.3	32.4	9.65	14.6	13.5	14	24.6	NA	21.1	NA	8.42	19.7
32404655A(W)	0' to 1' BGS (S100)	95% UCL	5.60	12.3	59.8	52.5	NA	18.1	48.3	81.0	NA	302	165	492	158	202	282	133	364	NA	275	38.1	131	393
	1' to 2' BGS (S200)	95% UCL	3.32	12.7	11.0	46.7	NA	NA	NA	NA	3.63	41.7	9.82	53.7	28.2	29.9	29.3	19.4	44.9	NA	37.9	NA	21.7	42.7
32404686	0' to 1' BGS (S100)	95% UCL	3.65	9.10	12.3	40.4	NA	3.56	3.88	NA	10.6	96.1	74.2	150	77.2	78.0	127	22.7	159	3.42	73.4	4.48	58.2	187
	1' to 2' BGS (S200)	95% UCL	2.61	10.1	9.48	41.5	NA	NA	NA	NA	1.49	7.01	3.36	2.85	6.78	15.6	11.1	NA	5.60	NA	23.5	1.49	2.02	10.7
32404687	0' to 1' BGS (S100)	95% UCL	4.56	9.41	12.1	37.4	16.8	16.8	14.8	16.8	16.8	307	101	474	97.8	228	153	115	241	16.8	360	14.3	84.2	199
	1' to 2' BGS (S200)	95% UCL	3.82	10.2	9.04	39.8	NA	NA	NA	NA	NA	27.7	12.9	39	11.5	17.5	18.4	7.46	34.5	NA	22.8	NA	17.5	30.2
32405150	Surface (S000)	95% UCL	6.00	15.0	17.7	77.2	2.85	3.65	16.8	2.33	40.9	226	216	365	131	104	237	38.0	496	14.7	123	6.99	293	422
	0' to 1' BGS (S100)	95% UCL	7.47	23.6	14.0	67.7	2.14	3.39	5.03	3.39	5.72	49.7	67.9	98.2	31.5	26.2	64.6	NA	111	6.28	50.0	2.76	47.5	104
	1' to 2' BGS (S200)	95% UCL	4.71	11.6	10.4	50.9	NA	1.97	2.32	NA	1.57	17.2	17.6	27.8	NA	15.5	NA	NA	37.4	NA	12.2	2.32	15.1	32.6
32405180A(E)	0' to 1' BGS (S100)	95% UCL	8.84	11.64	153	45.25	NA	2.737	9.041	7.203	15.64	52.03	14.52	52.5	28.51	29.48	22.07	21.15	51.14	10.24	37.24	5.953	20.52	58.71
	1' to 2' BGS (S200)	95% UCL	3.823	12.02	13.26	41.32	NA	NA	NA	NA	NA	51.0	NA	31.01	9.525	11.39	NA	NA	22.59	NA	34.07	NA	8.991	7.609
32405181	Surface (S000)	95% UCL	3.13	66.1	35.6	88.3	NA	NA	7.46	NA	23.7	137	72.0	177	87.5	49.7	128	30.0	215	5.24	101	15.1	100	200
32405182	0' to 1' BGS (S100)	95% UCL	20.8	16.4	782	57.4	NA	NA	13.7	NA	77.8	321	185	407	190	109	309	52.6	603	16.5	216	9.44	390	567
	1' to 2' BGS (S200)	95% UCL	4.49	12.5	113	53.4	NA	NA	2.74	1.84	11.1	44.0	7.9	42.7	19.2	16.5	9.55	15.6	39.1	3.81	31.4	2.38	19.7	39.2

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																	
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32405194B(C)	0' to 1' BGS (S100)	95% UCL	4.27	9.3	10.6	67.3	NA	NA	NA	NA	NA	26.9	21.6	53.8	21.6	NA	NA	6.62	42.0	NA	26.1	2.20	13.3	40.0
	1' to 2' BGS (S200)	95% UCL	3.45	9.15	8.82	42.8	NA	NA	NA	NA	NA	18.8	7.70	13.3	8.54	NA	NA	1.31	13.2	NA	NA	NA	5.65	12.5
32405194B(E)	0' to 1' BGS (S100)	95% UCL	3.25	11.8	11.1	47.3	NA	NA	NA	NA	4.29	30.1	25.5	71.1	23.5	NA	5.77	8.28	50.6	NA	23.5	1.82	18.7	44.5
	1' to 2' BGS (S200)	95% UCL	4.32	11.8	10.8	53.5	NA	NA	NA	NA	1.84	11.5	7.00	13.8	7.23	NA	NA	2.33	11.4	NA	6.59	2.24	4.85	11.3
32405194B(W)	0' to 1' BGS (S100)	95% UCL	4.06	27.3	11.9	50.1	NA	NA	2.38	NA	6.21	61.7	50.0	83.5	50.0	44.6	54.5	12.5	95.2	NA	49.5	3.11	29.2	93.0
	1' to 2' BGS (S200)	95% UCL	3.52	14.3	11.9	57.0	NA	NA	NA	NA	NA	NA	10.7	21.6	9.84	NA	NA	2.92	16.2	NA	15.2	1.62	5.91	16.2
32405205A(E)	Surface (S000)	95% UCL	4.08	14.9	23.4	87.0	8.45	43.5	10.3	NA	24.0	247	196	373	195	125	260	52.5	336	5.81	182	51.4	159	408
	0' to 1' BGS (S100)	95% UCL	7.85	14.8	91.8	57.5	5.55	14.5	5.70	NA	33.5	191	183	319	164	80.6	200	40.6	360	4.70	119	8.02	160	314
	1' to 2' BGS (S200)	95% UCL	8.32	16.6	18.0	57.6	NA	2.86	NA	NA	1.48	11.8	20.9	23.7	15.1	4.82	15.5	NA	20.8	NA	14.2	NA	7.21	20.8
32405205A(W)	Surface (S000)	95% UCL	4.27	204	27.7	71.8	NA	4.73	15.6	NA	45.2	312	200	450	217	145	353	59.7	457	7.58	207	20.5	231	505
	0' to 1' BGS (S100)	95% UCL	8.04	16.8	27.5	59.3	11.6	21.3	45.6	NA	64.2	577	576	851	452	209	657	130	844	17.8	392	68.9	344	968
	1' to 2' BGS (S200)	95% UCL	6.87	16.7	19.4	58.5	2.23	3.99	9.63	NA	10.3	153	56.2	304	178	67.3	177	46.3	164	5.00	150	6.50	52.3	199
32405208	Surface (S000)	95% UCL	5.62	19.1	59.5	107	4.98	12.1	NA	NA	12.3	77.7	57.6	84.9	56.2	63.8	75.6	NA	112	NA	56.5	16.6	54.4	116
32405270	Surface (S000)	95% UCL	3.5	52.2	145	77.0	14.3	17.0	14.0	14.3	14.0	365	129	301	180	475	280	164	410	12.8	437	13.9	70.0	234
	0' to 1' BGS (S100)	95% UCL	4.46	13.8	92.3	52.4	NA	NA	NA	NA	22.6	105	65.9	109	61.7	73.2	99.3	33.2	103	NA	73.0	NA	21.6	109
	1' to 2' BGS (S200)	95% UCL	3.28	13.4	15.9	49.8	NA	NA	NA	NA	22.6	157	110	174	105	97.6	148	64.2	113	NA	126	NA	12.3	132

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32405272A(E)	Surface (S000)	95% UCL	7.05	13.9	552	158	14.3	8.8	13.4	14.3	16.7	329	97.5	184	117	500	242	154	417	12.2	403	10.7	133	224
	0' to 1' BGS (S100)	95% UCL	5.19	10.7	86	47.9	NA	NA	NA	NA	NA	22	10.4	35	9.9	12.5	14.9	NA	27.5	NA	21.5	NA	11.3	22.7
	1' to 2' BGS (S200)	95% UCL	2.55	10.7	104	48.2	NA	NA	NA	NA	NA	15.5	3.87	24.6	3.71	9.41	7.54	NA	11.7	NA	18.5	NA	3.99	9.40
32405272A(W)	Surface (S000)	95% UCL	6.64	22.1	24.5	69.7	NA	9.25	4.88	NA	13.1	88.5	88.6	152	77.3	82.1	NA	20.6	230	1.95	69.6	7.74	71.9	185
	0' to 1' BGS (S100)	95% UCL	2.92	13.1	24.6	52.0	NA	NA	NA	NA	NA	141	37.0	252	36.1	93.8	53.8	NA	93.9	NA	351	NA	37.7	55.3
	1' to 2' BGS (S200)	95% UCL	2.35	12.0	46.1	51.5	NA	NA	NA	NA	NA	22.6	9.85	34.0	9.51	12.5	14.8	NA	23.6	NA	21.2	NA	6.17	21.4
32405273	0' to 1' BGS (S100)	95% UCL	3.96	13.4	26.7	50.8	1.13	1.49	3.40	NA	4.89	32.9	24.2	63.2	25.4	NA	6.31	5.87	41.2	1.67	24.4	3.47	20.4	39.9
	1' to 2' BGS (S200)	95% UCL	4.85	12.3	10.8	52.5	NA	NA	NA	NA	NA	7.20	NA	NA	NA	NA	NA	NA	2.14	NA	NA	1.49	1.31	1.71
32405274	0' to 1' BGS (S100)	95% UCL	3.87	10.8	178	43.4	3.10	4.35	20.4	NA	65.8	431	318	586	302	392	523	82.7	756	8.45	301	11.9	355	621
	1' to 2' BGS (S200)	95% UCL	4.55	11.5	11.2	48.3	NA	NA	NA	NA	NA	16.0	4.17	3.45	4.23	NA	NA	NA	7.77	NA	4.35	2.37	3.71	8.55
32405287	Surface (S000)	95% UCL	3.81	11.3	15.6	65.6	2.20	NA	6.70	NA	32.3	259	205	323	152	142	210	43.4	416	2.66	128	5.82	177	365
	0' to 1' BGS (S100)	95% UCL	4.40	13.1	11.5	43.2	NA	NA	2.15	NA	NA	68.3	47.7	108	42.5	30.6	79.8	12.0	82.6	NA	37.2	NA	18.4	89.9
	1' to 2' BGS (S200)	95% UCL	4.82	12.1	10.6	46.3	NA	NA	NA	NA	NA	4.10	6.67	19.5	3.96	NA	8.50	NA	8.10	NA	8.28	NA	NA	8.60
32405288	Surface (S000)	95% UCL	7.34	51.6	25.8	82.2	1.49	NA	2.55	NA	10.5	81.0	62.6	103	46.5	27.4	104	13.8	148	1.31	35.5	3.65	56.4	138
32405295	0' to 1' BGS (S100)	95% UCL	4.19	8.82	9.92	44.2	16.8	16.8	16.5	16.8	16.8	65.8	64.1	320	51.0	13.1	100	11.4	101	16.8	27.4	16.2	14.9	113
	1' to 2' BGS (S200)	95% UCL	3.25	9.05	NA	41.4	NA	NA	NA	NA	NA	71.2	83.7	164	91.4	58.3	97.5	22.6	63.7	NA	72.6	NA	4.70	73.1

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																	
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32405296	0' to 1' BGS (S100)	95% UCL	3.35	9.88	11.4	46.0	3.45	6.67	23.4	NA	75.9	506	408	718	392	365	831	101	992	11.9	375	19.3	453	894
	1' to 2' BGS (S200)	95% UCL	3.76	11.1	9.81	48.0	NA	NA	1.49	NA	2.92	26.3	16.5	40.2	18.7	NA	NA	3.99	38.8	NA	18.9	2.38	19.7	34.4
32405297	0' to 1' BGS (S100)	95% UCL	3.97	8.95	12.6	37.1	NA	18.5	58.9	NA	275	1,860	1,140	2,210	1,200	848	1,880	296	2,650	42.6	1,290	102	1,210	3,100
	1' to 2' BGS (S200)	95% UCL	5.35	10.9	10.5	41.7	NA	NA	6.59	1.13	22.8	188	122	281	137	88.4	190	40.2	234	4.63	144	8.13	102	287
32405306	0' to 1' BGS (S100)	95% UCL	4.37	27.4	41.8	77.4	18.4	34.5	87.1	NA	101	1,040	682	1,410	722	584	1,050	201	1,560	NA	580	124	798	1,620
	1' to 2' BGS (S200)	95% UCL	2.96	25.7	19.2	56.0	14.3	14.2	14.0	14.3	14.3	245	53.9	290	53.2	284	96.0	16.1	168	14.3	180	14.0	61.9	114
32405308A(E)	0' to 1' BGS (S100)	95% UCL	3.96	12.1	153	52.3	NA	NA	2.50	NA	20.4	77.0	33.3	91.8	42.1	39.1	60.9	19.2	126	1.13	52.5	2.56	74.4	116
	1' to 2' BGS (S200)	95% UCL	4.90	11.5	12.0	48.1	NA	NA	NA	NA	NA	49.9	NA	29.8	10.1	10.5	NA	NA	21.4	NA	27.9	NA	8.11	5.24
32405308A(W)	0' to 1' BGS (S100)	95% UCL	13.5	15.0	92.8	51.6	NA	3.65	2.02	NA	6.17	53.0	51.8	90.6	37.2	21.7	63.3	11.4	103	NA	33.6	2.66	41.0	91.6
	1' to 2' BGS (S200)	95% UCL	6.89	14.0	13.4	52.9	NA	NA	NA	NA	NA	6.14	NA	7.53	7.77	4.61	9.65	NA	12.0	NA	NA	NA	5.72	9.91
32405309	Surface (S000)	95% UCL	11.8	10.7	348	58.6	1.13	NA	6.20	NA	43.2	227	147	NA	108	94.7	223	35.1	410	3.63	109	5.25	204	361
32405310	Surface (S000)	95% UCL	5.76	11.0	144	59.4	2.73	NA	7.33	NA	22.6	116	94.0	148	73.7	83.1	151	22.3	227	2.56	66.1	8.43	96.8	196

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																			
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32436014	0' to 1' BGS (S100)	95% UCL	9.86	11.7	353	48.0	NA	NA	21.8	NA	NA	510	416	851	397	232	811	141	1030	NA	326	21.4	458	1040
	1' to 2' BGS (S200)	95% UCL	4.21	11.2	10.3	46.6	NA	NA	NA	NA	NA	38.1	31.8	63.7	32.4	19.0	53.0	8.63	71.4	NA	28.7	NA	27.9	65.5
32436015	2' to 3' BGS (S100)	95% UCL	7.36	9.80	10.9	42.3	4.43	45.8	27.3	NA	204	977	664	1,350	612	506	774	152	1830	24.0	533	18.5	912	1690
	3' to 4' BGS (S100)	95% UCL	4.90	8.35	8.72	39.3	3.63	44.9	20.7	NA	87.2	470	306	655	289	252	442	78.1	882	13.9	260	15.5	422	789
32436021	Surface (S000)	95% UCL	3.08	24.1	18.2	39.9	NA	11.8	1.31	NA	14.6	127	66.0	144	66.7	90.9	125	29.1	212	4.47	99.0	NA	98.5	189
32436022	0' to 1' BGS (S100)	95% UCL	6.01	13.0	273	48.4	NA	NA	4.80	NA	21.4	116	53.2	110	64.7	63.2	76.7	24.0	157	2.56	75.7	7.36	81.0	152
	1' to 2' BGS (S200)	95% UCL	2.68	14.4	15.7	51.7	NA	NA	1.49	NA	12.5	56.5	20.3	59.2	36.0	38.2	29.5	16.2	61.2	NA	44.5	NA	28.8	64.1
32436023*	Surface (S000)	95% UCL	4.49	20.5	15.1	40.0	NA	NA	NA	NA	7.40	41.4	51.5	114	35.9	141	67.2	1.80	106	NA	38.2	2.00	42.5	92.9
32436026	Surface (S000)	95% UCL	10.7	18.8	55.4	55.5	NA	NA	1.49	1.13	6.17	37.0	47.7	84.2	31.9	54.2	55.0	19.2	111	NA	35.9	2.01	41.7	92.7
32437020	Surface (S000)	95% UCL	3.69	12.2	15.1	44.4	NA	NA	NA	NA	NA	21.7	13.4	32.7	13.8	9.88	20.7	6.14	32.5	NA	13.0	1.4	8.55	31.0
32439003	Surface (S000)	95% UCL	5.91	16.7	84	53.8	NA	9.21	14.4	NA	45.7	224	170	370	156	87.5	209	39.0	461	6.04	107	18.5	204	393
	0' to 1' BGS (S100)	95% UCL	2.41	16.8	31.8	54.8	NA	NA	NA	NA	NA	165	56.3	266	56.9	134	114	NA	197	NA	206	NA	97.4	154
	1' to 2' BGS (S200)	95% UCL	2.92	14.0	11.5	52.0	NA	NA	NA	NA	NA	15.5	3.77	22.8	4.83	12.0	8.45	NA	11.2	NA	17.8	NA	3.32	8.25
32439004	Surface (S000)	95% UCL	12.3	15.6	174	47.1	6.81	11.9	22.4	NA	46.0	306	336	491	250	125	361	68.7	531	7.19	192	40.7	247	498
	0' to 1' BGS (S100)	95% UCL	6.03	12.4	100	49.0	7.60	11.9	46.4	NA	325	1060	871	1,250	757	406	1310	178	2170	56.8	594	30.5	1370	1820
	1' to 2' BGS (S200)	95% UCL	5.72	14.2	12.3	61.8	NA	NA	2.32	NA	2.68	19.0	24.2	33.5	NA	14.5	NA	NA	36.8	NA	13.8	1.66	14.1	36.9
32439005	0' to 1' BGS (S100)	95% UCL	3.32	14.2	97.8	54.5	27.5	23.3	123	23.3	56.0	1,660	1,750	3,450	1,930	841	2,530	456	2,010	23.3	1,590	134	772	2,470
	1' to 2' BGS (S200)	95% UCL	2.52	16.7	14.3	50.1	NA	NA	2.33	NA	NA	25.8	17.5	35.6	15.8	16.7	30.5	5.95	42.6	NA	15.0	0.969	15.0	42.0

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																	
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32439006	0' to 1' BGS (S100)	95% UCL	4.85	14.9	378	47.8	NA	NA	67.7	NA	44.6	717	442	946	458	440	855	145	1,040	NA	498	40.7	510	1,150
	1' to 2' BGS (S200)	95% UCL	3.52	13.6	57.6	49.3	NA	NA	NA	45.2	NA	382	212	561	212	209	363	151	485	NA	299	NA	249	477
32439007	0' to 1' BGS (S100)	95% UCL	4.96	12.9	243	52.0	21.1	22.6	103	8.81	395	2,320	1,260	2,430	1,160	1,030	2,510	335	3,630	53.6	1,180	83.2	1,940	3,970
	1' to 2' BGS (S200)	95% UCL	3.15	12.5	12.2	47.1	3.45	NA	12.7	6.67	47.6	348	185	382	185	112	299	46.7	576	1.13	169	12.6	264	517
32439013	Surface (S000)	95% UCL	4.22	18.4	25.6	52.9	48.9	69.1	231	NA	775	4,900	4,360	11,900	4,620	1,870	7,740	1,110	9,110	82.5	4,370	182	3,750	8,740
	0' to 1' BGS (S100)	95% UCL	NA	NA	NA	NA	12.5	20.4	49.5	NA	106	1,030	755	1,410	786	500	1,010	184	1560	23.1	694	65.4	560	1,410
	1' to 2' BGS (S200)	95% UCL	NA	NA	NA	NA	5.38	9.02	31.7	NA	133	813	499	1,020	509	255	752	116	1,320	23.3	440	20.1	598	1,060
32439014	0' to 1' BGS (S100)	95% UCL	3.04	14.1	16.4	50.4	14.9	16.8	76.5	106	16.7	410	306	754	335	246	690	98.7	824	16.8	337	26.7	340	819
	1' to 2' BGS (S200)	95% UCL	1.96	17.3	14.0	59.8	NA	NA	NA	NA	NA	7.02	8.83	21.2	5.35	NA	8.22	NA	9.16	NA	6.63	NA	NA	10.5
32439015	0' to 1' BGS (S100)	95% UCL	3.17	11.6	11.4	50.2	13.5	14.3	8.78	14.3	19.9	320	205	296	201	183	321	48.0	504	14.3	172	13.9	268	503
	1' to 2' BGS (S200)	95% UCL	2.76	12.2	11.1	49.5	NA	NA	NA	NA	NA	52.3	19.3	41.1	17.6	NA	28.5	NA	54.4	NA	25.1	NA	32.8	49.8
32439016	0' to 1' BGS (S100)	95% UCL	3.78	13.5	14.4	46.1	NA	NA	NA	NA	NA	422	354	729	376	373	509	113	658	NA	392	16.7	297	690
	1' to 2' BGS (S200)	95% UCL	2.84	15.3	12.3	52.1	NA	NA	NA	NA	3.81	105	66.2	124	69.5	63.2	101	18.8	153	NA	68.4	NA	68.8	155
32439017	Surface (S000)	95% UCL	4.02	17.1	17.3	46.5	16.2	11.8	59.1	2.35	196	1,720	872	1,750	1,100	554	1,640	254	2,690	26.0	1,120	67.0	1,090	2,520
	0' to 1' BGS (S100)	95% UCL	N/A	N/A	N/A	N/A	2.32	3.51	7.60	NA	17.0	174	115	256	119	32.3	185	28.2	200	2.37	131	7.88	94.2	208
	1' to 2' BGS (S200)	95% UCL	NA	NA	NA	NA	NA	NA	2.46	NA	14.6	80.6	33.2	121	36.0	NA	77.1	8.37	161	2.02	66.5	2.50	71.5	113

TABLE 3-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE PREVIOUS RI (DECEMBER 2014 TO FEBRUARY 2017)

APN	Analytes		Metals				Polycyclic Aromatic Hydrocarbons (PAHs)																	
			Antimony	Copper	Lead	Zinc	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	units		mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
32439026	Surface (S000)	95% UCL	6.49	14.9	24.0	56.9	19.9	23.5	77.0	3.71	216	1,540	732	1,430	916	512	1,280	212	2,410	37.6	887	93.6	1,140	2,270
	0' to 1' BGS (S100)	95% UCL	NA	NA	NA	NA	80.5	124	368	4.46	1,140	8,600	4,460	9,650	3,460	1,720	6,970	977	9,770	220	3,530	318	4,510	9,990
	1' to 2' BGS (S200)	95% UCL	NA	NA	NA	NA	146	224	629	8.49	1,660	12,800	9,970	17,600	10,700	1,910	17,400	1,840	23,200	329	9,870	613	12,400	22,200
32439032	Surface (S000)	95% UCL	4.08	14.2	17.0	51.7	15.1	21.2	53.3	2.15	145	1,180	669	1,920	712	367	1,170	182	1,480	21.8	686	65.1	615	1,380
	0' to 1' BGS (S100)	95% UCL	NA	NA	NA	NA	17.7	27.1	78.2	NA	151	1,150	814	1,600	788	453	1,190	197	1,290	36.3	743	79.8	704	1,450
	1' to 2' BGS (S200)	95% UCL	NA	NA	NA	NA	260	406	1,050	12.0	2,080	18,300	14,700	23,700	16,300	2,330	23,400	2,360	28,200	554	14,900	1,070	14,700	28,300
32439033	Surface (S000)	95% UCL	4.76	14.2	13.2	49.3	19.3	10.3	105	14.3	141	1,270	750	1,870	849	570	1,630	214	1,810	17	752	75	768	2,350
	0' to 1' BGS (S100)	95% UCL	4.54	15.9	50.7	53.2	72.7	43.5	363	64.9	493	3,630	1,990	4,320	1,980	1,270	4,150	542	5,030	110	1,680	270	2,500	5,850
	1' to 2' BGS (S200)	95% UCL	3.01	14.2	14.0	57.7	6.13	3.45	28.2	NA	107	659	334	734	300	208	621	87.2	1,080	17.0	285	27.6	608	1,010
32439035	0' to 1' BGS (S100)	95% UCL	4.83	30.1	21.4	48.5	35.4	NA	165	72	124	1,610	931	1,800	931	875	2,210	256	2,150	14.9	871	109	954	2,590
	1' to 2' BGS (S200)	95% UCL	3.36	15.2	11.9	56.5	NA	NA	3.02	NA	NA	41.4	27.2	64.9	26.2	15.5	55.4	8.29	60.5	NA	24.7	4.92	22.5	73.0

[1] UCLs were only calculated for parcels with triplicate samples collected

Abbreviations and Notes:

* Samples had rejected data, however skeet was observed in surface and/or subsurface. No additional samples were collected, and UCL was calcualted for reporting purposes.

** Electronic Data Deliverable not included with files delivered

*** APN 32404643 is listed as a TCRA parcel and RI parcel. Sampling was done after TCRA

95% UCLs were calculated using chebyshev distribution.

µg/kg - micrograms per kilogram

BGS - below ground surface

(E) east section of subdivided parcel

mg/kg - milligrams per kilogram

NA - U flagged data with zero variance, UCL could not be calculated.

PAH - Polycyclic Aromatic Hydrocarbons

(W) west section of subdivided parcel

TABLE 4-1
SUMMARY OF PARCELS SAMPLED DURING CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

Parcel Count	APN	Street #	Street Name	Sampling Dates	Sample Depths (ft)	ISM
1	31021063*	--	E Thompson Ave	4/2/2019	0,1,2	x 3 (replicates)
2	31021078	--	E Thompson Ave	3/28/2019	0,1,2	x 3 (replicates)
3	31021080	--	E Thompson Ave	5/7/2019	0,1,2	x 3 (replicates)
3	31021080A*	--	E Thompson Ave	5/22/2019	0,1,2	x 3 (replicates)
3	31021080B*	--	E Thompson Ave	5/23/2019	0,1,2	x 3 (replicates)
4	31038002	4015	E Thompson Ave	3/21/2019	0,1,2	x 3 (replicates)
5	32404206A	3910	E Devlin Ave	4/4/2019	0,1,2	x 3 (replicates)
6	32404208A	3900	E Devlin Ave	3/7/2019	0,1,2	x 3 (replicates)
7	32404211C	3879	E. Shaeffer Ave	10/22/2019	0,1,2	x 3 (replicates)
8	32404213	3887	E Shaeffer Ave	5/15/2019	0	x 3 (replicates)
9	32404241	3846	E Devlin Ave	2/6/2019	0,1,2	x 3 (replicates)
10	32404242*	3842	E Devlin Ave	2/5/2019	0,1,2	x 3 (replicates)
11	32404277A	3825	E. Shaeffer Ave	10/17/2019	0	x 3 (replicates)
12	32404279	3841	E Shaeffer Ave	2/26/2019	0	x 3 (replicates)
13	32404280	3845	E Shaeffer Ave	2/27/2019	0,1,2	x 3 (replicates)
14	32404487	3846	E Hearne Ave	3/6/2019	0	x 3 (replicates)
15	32404526	3845	E Devlin Ave	2/8/2019	0,1,2	x 3 (replicates)
16	32404527	3849	E Devlin Ave	2/19/2019	0,1,2	x 3 (replicates)
17	32404550*	3960	E Hearne Ave	2/19/2019	0,1,2	x 3 (replicates)
18	32404552A	3950	E Hearne Ave	2/7/2019	0,1,2	x 3 (replicates)
19	32404553	3946	E Hearne Ave	1/31/2019	0,1,2	x 3 (replicates)
20	32404556A	3922	E Hearne Ave	1/24/2019	0	x 3 (replicates)
21	32404578	3925	E. Devlin Ave	10/25/2019	0	x 3 (replicates)
22	32404582	3945	E. Devlin Ave	10/23/2019	0,1,2	x 3 (replicates)
23	32404624	3996	E Ryan Ave	4/16/2019	0,1,2	x 3 (replicates)
24	32404625	3990	E Ryan Ave	4/16/2019	0,1,2	x 3 (replicates)
25	32404629A	3966	E Ryan Ave	3/26/2019	0,1,2	x 3 (replicates)
26	32404631B	3960	E Ryan Ave	5/30/2019	0	x 3 (replicates)
27	32404638	3920	E Ryan Ave	3/1/2019	0,1,2	x 3 (replicates)
28	32404639	3916	E Ryan Ave	4/5/2019	1,2	x 3 (replicates)
29	32404640	3910	E Ryan Ave	3/29/2019 4/1/2019	1,2,3,4	x 3 (replicates)
30	32404656	3915	E Hearne Ave	1/25/2019	0	x 3 (replicates)
31	32404658	3925	E Hearne Ave	1/29/2019	0,1,2	x 3 (replicates)
32	32404659	3929	E Hearne Ave	2/1/2019	0,1,2	x 3 (replicates)
33	32404664	3955	E. Hearne Ave	10/16/2019	0	x 3 (replicates)
34	32404665	3959	E Hearne Ave	1/30/2019	0,1,2	x 3 (replicates)
35	32404666	3971	E Hearne Ave	2/28/2019	0,1,2	x 3 (replicates)
36	32404688	3860	E Ryan Ave	3/8/2019	0,1,2	x 3 (replicates)
37	32404727	3831	E. Hearne Ave	10/29/2019	0	x 3 (replicates)
38	32404730	3845	E Hearne Ave	3/27/2019	0	x 3 (replicates)
39	32405168	4010	E Lum Ave	3/5/2019	0	x 3 (replicates)
40	32405169	4004	E Lum Ave	4/12/2019	0,1,2	x 3 (replicates)
41	32405172*	3990	E Lum Ave	1/22/2019	0,1,2	x 3 (replicates)

TABLE 4-1
SUMMARY OF PARCELS SAMPLED DURING CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

Parcel Count	APN	Street #	Street Name	Sampling Dates	Sample Depths (ft)	ISM
42	32405174	3974	E Lum Ave	5/9/2019 10/24/19	0,1,2,3,4	x 3 (replicates)
43	32405176	3966	E Lum Ave	1/18/2019	0,1,2	x 3 (replicates)
44	32405177	3960	E Lum Ave	1/15/2019	0,1,2	x 3 (replicates)
45	32405178	3956	E Lum Ave	1/16/2019	0,1,2	x 3 (replicates)
46	32405206A	3929	E Ryan Ave	4/4/2019	0,1,2	x 3 (replicates)
47	32405212*	3959	E Ryan Ave	3/22/2019	0,1,2	x 3 (replicates)
48	32405218A	3991	E Ryan Ave	5/30/2019	0	x 3 (replicates)
49	32405269	3986	E Thompson Ave	10/18/2019	0,1,2	x 3 (replicates)
50	32405289	3886	E Thompson Ave	3/19/2019	0,1,2	x 3 (replicates)
51	32405290	3880	E Thompson Ave	3/20/2019	0	x 3 (replicates)
52	32436008*	3930	E. Lass Ave	10/28/2019	0,1,2	x 3 (replicates)
53	32436011	3942	E Lass Ave	5/14/2019	0,1,2	x 3 (replicates)
54	32436012*	3946	E Lass Ave	5/21/2019 10/15/2019	0,1,2,3,4	x 3 (replicates)
55	32436019	3974	E Lass Ave	4/10/2019	0,1,2,3,4	x 3 (replicates)
56	32436020*	3978	E Lass Ave	5/8/2019	0,1,2,3,4	x 3 (replicates)
57	32437016	3964	E Packard Ave	4/9/2019	0,1,2	x 3 (replicates)
58	32439031	3955	E Snavely Ave	5/29/2019 10/21/19	0,1,2,3,4,5,6	x 3 (replicates)
59	32439036	3935	E. Snavely Ave	10/8/2019	0,1,2	x 3 (replicates)
60	32439037	3931	E. Snavely Ave	10/9/2019	0,1,2	x 3 (replicates)

Abbreviations and Notes:

* Samples had rejected data, however skeet was observed in surface and/or subsurface. No additional samples were collected.

-- Not applicable (open area)

APN - Assessor parcel number

Ave - Avenue

ISM - Incremental sampling method

TABLE 4-2
SUMMARY OF LABORATORY ANALYTICAL METHODS USED DURING CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

ANALYTICAL GROUP	MATRIX	SAMPLING TECHNIQUE	NUMBER OF SAMPLES	ANALYTICAL METHOD
Polycyclic Aromatic Hydrocarbons (PAHs)	Soil	ISM	Three ISM replicates per decision unit[1]	USEPA Method 8270C
Metals (Antimony, Copper, Lead, Zinc)	Soil	ISM	Three ISM replicates per decision unit[1]	USEPA Method 6010B

Abbreviations and Notes:

[1] Each replicate comprised of fifty (50) approximately 20-gram sub samples

ISM - incremental sampling method

RI - Remedial investigation

USEPA - United States Environmental Protection Agency

Table 4-3a
Potential Federal and StateAction-Specific ARARs

Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Resource Conservation and Recovery Act (42 U.S.C. §§6901–6991[i])*							
On-site waste generation	Requirements for analyzing waste for determining whether waste is hazardous.	Generator of waste	40 CFR, §264.13(a)	2			Potentially applicable for characterizing waste generated during the remedial action
Hazardous waste accumulation	On-site hazardous waste accumulation is allowed for up to 90 days as long as the waste is stored in containers in accordance with §66262.171–178 or in tanks, on drip pads, inside buildings, is labeled and dated, etc.	Accumulate hazardous waste.	40 CFR, §262.34	2			Potentially applicable for storing waste generated during the remedial action.
Container storage	Containers of RCRA hazardous waste must be: • maintained in good condition, • compatible with hazardous waste to be stored, and • closed during storage except to add or remove waste. inspect container storage areas weekly for deterioration.	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage elsewhere, in a container.	40 CFR, §264.171, 264.172, 264.173, and 264.174	2			Substantive requirements are potentially applicable for accumulation of waste for less than 90 days if the waste is hazardous waste and is stored on-site. Wastes will not be stored on-site for greater than 90 days.

Table 4-3a Potential Federal Action-Specific ARARs							
Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil							
Action	**Requirement**	**Prerequisite**	**Citation**	**ARAR Determination**			**Comments**
				A	**RA**	**TBC**	
Container Storage (cont'd.)	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system	Storage in a container of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage elsewhere.	40 CFR, §264.175		2		Potentially applicable if hazardous wastes are generated and stored on-site for less than 90 days
	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.		40 CFR, §264.177		2		Potentially applicable for temporary storage of incompatible materials.
	At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers and liners.		40 CFR, §264.178		2		Potentially applicable if RCRA hazardous wastes are generated and stored for less than 90 days.
Temporary Unit	Alternative requirements that are protective of human health or the environment may replace design, operating, or closure standards for temporary tanks and container storage areas.		40 CFR, §264.553		2		Potentially applicable for container storage if waste is a RCRA hazardous waste.
Staging pile	Allows generators to accumulate solid remediation waste in a U.S.EPA-designated pile for storage only, up to 2 years, during remedial operations without triggering LDRs.	Hazardous remediation waste temporarily stored in piles.	40 CRF§ 264.554(d)(1)(i–ii) and (d)(2), (e), (f), (h), (i), (j), and (k)		2		The substantive requirements are potentially relevant and appropriate for storage of excavated soil. The staging pile will be designed to prevent or minimize the releases of COPCs into the environment and minimize or adequately control cross-media transfer of pollutants.

Table 4-3a
Potential Federal Action-Specific ARARs

Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Closure of staging pile	At closure, owner shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste	Staging pile used to temporarily store or treat waste.	440 CFR, §264.258(a)		2		Potentially relevant and appropriate for staging waste soil
Site closure	Minimize the need for further maintenance controls and minimize or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to groundwater or surface water or to the atmosphere.	Hazardous waste management facility	40 CFR, § 264.111(a) and (b)		2		
Clean closure	During the partial and final closure periods, all contaminated equipment, structures and soils shall be properly disposed or decontaminated by removing all hazardous waste and residues.	Hazardous waste management facility.	40 CFR, § 264.114		2		

Table 4-3a Potential Federal Action-Specific ARARs							
Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil							
Action	**Requirement**	**Prerequisite**	**Citation**	**ARAR Determination**			**Comments**
				A	**RA**	**TBC**	
Excavation and soil disturbance	Owners and operators of construction activities must be in compliance with discharge standards, including substantive provisions of the general requirements for storm water plans and BMPs.	Discharge surface waters, including storm water	CWA Section 402 (33 U.S.C. ch. 26, § 1342) and 40 C.F.R. § 122.44(k)(2) and (4); 40 C.F.R. 450.21	2			Substantive provisions are potentially applicable for the excavation and soil disturbance. A storm water plan with BMPs will be implemented.
	All direct dischargers meet technology-based requirements including the best control technology (BCT) and the best available technology (BAT) economically achievable.		CWA Section 301(b) (33 U.S.C. ch. 26, § 1311)	2			Substantive provisions are potentially applicable for the excavation and soil disturbance. A storm water plan with BMPs that meet the BCT and BAT economically achievable.

Note:

* statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate acceptance of the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of specific citations are considered potential ARARs

Acronyms/Abbreviations:

A – applicable
ARAR – applicable or relevant and appropriate requirement
BAT – best available technology
BCT – best control technology
BMP – best management practice
CAA – Clean Air Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R. – Code of Federal Regulations
ch. – chapter
CWA – Clean Water Act
LDR– land disposal restriction
RA– Relevant and appropriate
TBC – to be considered
U.S.C – United States Code
U.S. EPA– United States Environmental Protection Agency

Table 4-3b Potential State Action-Specific ARARs							
Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil							
Action	**Requirement**	**Prerequisite**	**Citation**	**ARAR Determination**			**Comments**
				A	**RA**	**TBC**	
Arizona Administrative Code (AAC)*							
Declaration of Environmental Use restriction	The owner shall record in each county where the property is located, a restrictive covenant labeled "declaration of environmental use restriction" that contains the information required by A.R.S. §§49-152 or 49-158.	Owner elected to use an institutional control and/or an engineering control to reduce the potential for exposure to contaminants on the property or to leave contamination on the property that exceeds the applicable residential soil standard.	AAC Title 18, Chapter 7. R18-7-208 and AAC Title 18, Chapter 7. R18-7-602			2	
Arizona Revised Statutes (A.R.S)							
Restrictions on property use	The owner shall record in the county where the property is located an institutional control that consists of a restrictive covenant that is labeled "declaration of environmental use restriction" pertaining to the area of the property necessary to protect the public health and the environment. The use restriction shall limit the area of the property where the institutional control or engineering control shall be maintained, and the area of the property to be restricted in use, because contamination remains on the property. The use restriction shall include date remedial action was completed with a map and describe the environmental contaminants.	Owner elects to use engineering or institutional control to meet the standards.	A.R.S Title 49, Chapter 1, Article 4, §§49-152 and 49-158			2	

Table 4-3b Potential State Action-Specific ARARs							
Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil							
Action	**Requirement**	**Prerequisite**	**Citation**	**ARAR Determination**			**Comments**
				A	**RA**	**TBC**	
Stormwater Discharge	General Requires erosion and sediment control, pollution prevention, inspections, corrective action, a plan, and sampling.		AZG2020-001 CGP		2		CERCLA projects are subject to substantive permit requirements but are not required to obtain permits or to comply with procedural and administrative requirements of permits. Since this alternative could disturb one or more acres, the substantive provisions of the permit are ARARs.
Remedial action no further action criteria	A determination of no further action shall be made if the site or portion of the site does not present significant risk to the public health or welfare or the environment based on rules at §49-282.06.		ARS §49-287.01	2			
Remedial action criteria	Ensure protection of public health and welfare and the environment. Allow maximum beneficial use of the waters of the state. Be reasonable, necessary, cost-effective and technically feasible.		ARS §49-282.06	2			

Note:

* statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate acceptance of the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific actions are considered potential ARARs.

Acronyms/Abbreviations:

A – applicable
AAC– Arizona Administrative Code
ARAR – applicable or relevant and appropriate requirement
ARS– Arizona Revised Statutes
AZG -Arizona Department of Environmental Quality General Permit for Stormwater Discharges
CGP-Construction General Permit
RA – relevant and appropriate
TBC – to be considered

Table 4-3c Potential State Chemical-Specific ARARs							
Alternatives: 1: No action; 2: Excavation, Off-site Disposal, Backfill with Imported Soil							
Action	**Requirement**	**Prerequisite**	**Citation**	**ARAR Determination**			**Comments**
				A	**RA**	**TBC**	
Arizona Administrative Code (AAC)*							
Pre-determined Remediation Standards	A person who conducts remediation pursuant to this Article shall remediate to the residential SRL on any property where there is residential use at the time remediation is completed. Except as provided below, a person who elects to remediate to a residential SRL may utilize a 1 x 10-5 excess lifetime cancer risk for any carcinogen other than a known human carcinogen. If the current or currently intended future use of the contaminated site is a child care facility or school where children below the age of 18 are reasonably expected to be in frequent, repeated contact with the soil, the person conducting remediation shall remediate to a 1 x 10-6 excess lifetime cancer risk. For contaminants that exhibit both carcinogenic and non-carcinogenic effects, the numeric standard that is lower (more protective) shall apply.		AAC Title 18, Chapter 7. R18-7-205(B),(E),(F)	2			
Pre-determined Remediation Standards	A person may elect to remediate to a residential or a non-residential site-specific remediation level derived from a site-specific human health risk assessment. A person who conducts a remediation to a site-specific remediation level shall remediate to the residential site-specific remediation level on any property where there is residential use at the time remediation is completed.		AAC Title 18, Chapter 7. R18-7-206	2			

Note:
* Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate acceptance of the entire statutes or policies as potential ARARs; specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific actions are considered potential ARARs.

Acronyms/Abbreviations:
ARAR – applicable or relevant and appropriate requirement
A – applicable
RA – relevant and appropriate
TBC – to be considered

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
1	31021063*	--	E Thompson Ave	4/2/2019	MRS03-APN31021063-SS001	0	µg/kg	0.912 J	0.612 J	2.14 J	20.8 J	28.1 J	36.1 J	20.8 J	13.9 J	29.4 J	4.91 J	36.3 J	2.45 UJ	21.3 J	1.79 J	14.4 J	34.2 J
					MRS03-APN31021063-SS002	0	µg/kg	0.997 J	1.61 J	4.48 J	29.2 J	37.4 J	48.5 J	27.8 J	18.7 J	38.0 J	7.16 J	53.3 J	1.20 J	32.3 J	1.99 J	26.6 J	48.0 J
					MRS03-APN31021063-SS003	0	µg/kg	0.875 J	0.554 J	1.73 J	18.8 J	25.6 J	34.6 J	18.1 J	12.2 J	27.1 J	4.65 J	33.3 J	2.45 UJ	19.3 J	1.70 J	12.7 J	32.3 J
					MRS03-APN31021063-SS1001	1	µg/kg	1.05 J	0.995 U	4.04 U	7.85 J	10.4	13.6	7.41 J	5.06 J	10.8	6.22 U	13.7	2.49 U	8.25 J	1.57 J	6.31 J	13.2
					MRS03-APN31021063-SS1002	1	µg/kg	0.733 J	1.01 U	4.12 U	7.73 J	11.6	14.0	8.32 J	5.76 J	11.0	6.33 U	13.0	2.53 U	8.91 J	1.40 J	5.08 J	12.6
					MRS03-APN31021063-SS1003	1	µg/kg	0.922 J	0.943 U	3.83 U	5.29 J	7.99 J	9.34	5.90 J	4.03 J	7.22 J	5.89 U	7.73 J	2.36 U	6.19 J	1.43 J	3.33 J	7.73 J
					MRS03-APN31021063-SS2001	2	µg/kg	1.46 J	0.980 U	3.98 U	3.98 U	1.50 J	6.12 U	6.12 U	3.98 U	1.84 J	6.12 U	2.32 J	2.45 U	6.12 U	2.05 J	6.12 U	2.18 J
					MRS03-APN31021063-SS2002	2	µg/kg	1.03 J	0.976 U	3.68 J	18.9	16.5	23.8	11.4	8.57 J	20.1	2.46 J	38.9	2.44 U	12.2	1.59 J	24.9	30.8
					MRS03-APN31021063-SS2003	2	µg/kg	0.920 J	1.02 U	4.13 U	2.72 J	3.90 J	5.20 J	3.44 J	4.13 U	3.59 J	6.35 U	3.94 J	2.54 U	3.52 J	1.50 J	6.35 U	3.60 J
2	31021078	--	E Thompson Ave	3/28/2019	MRS03-APN31021078-SS001	0	µg/kg	4.04 J	0.904 J	2.81 J	21.9 J	22.3 J	35.9 J	17.4 J	13.4 J	30.7 J	4.00 J	33.9 J	2.52 UJ	17.2 J	4.35 J	20.0 J	29.5 J
					MRS03-APN31021078-SS002	0	µg/kg	1.24 J	1.13 J	2.34 J	23.5	28.0	39.0	20.0	15.0	33.8	4.64 J	35.7	2.63 U	22.9	2.06 J	18.8	33.1
					MRS03-APN31021078-SS003	0	µg/kg	0.843 J	0.822 J	2.02 J	19.90	24.70	34.10	17.90	14.00	28.70	4.26 J	29.2	2.48 U	19.7	1.66 J	14.9	26.9
					MRS03-APN31021078-SS1001	1	µg/kg	1.95 U	1.04 U	4.22 U	8.35 J	9.59 J	13.8 J	6.78 J	5.27 J	11.7 J	6.49 U	14.0 J	2.60 U	6.76 J	1.95 U	6.99 J	12.9 J
					MRS03-APN31021078-SS1002	1	µg/kg	1.93 U	1.03 U	4.19 U	3.72 J	4.19 J	6.87 J	3.41 J	2.39 J	5.80 J	6.45 U	6.23 J	2.58 U	3.65 J	1.39 J	3.21 J	5.95 J
					MRS03-APN31021078-SS1003	1	µg/kg	1.93 U	0.462 J	4.17 U	14.50	18.3 J	26.3 J	14.0 J	10.10	20.0 J	2.74 J	19.4 J	2.57 U	15.2 J	1.31 J	6.63 J	18.2 J
					MRS03-APN31021078-SS2001	2	µg/kg	1.99 U	1.06 U	4.30 U	4.30 U	4.30 U	6.62 U	6.62 U	4.30 U	4.30 U	6.62 U	4.30 U	2.65 U	6.62 U	1.83 J	6.62 U	6.62 U
					MRS03-APN31021078-SS2002	2	µg/kg	1.95 U	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	1.50 J	6.49 U	6.49 U
					MRS03-APN31021078-SS2003	2	µg/kg	2.00 U	1.06 U	4.32 U	4.32 U	4.32 U	6.65 U	6.65 U	4.32 U	4.32 U	6.65 U	4.32 U	2.66 U	6.65 U	1.81 J	6.65 U	6.65 U
3	31021080	--	E Thompson Ave	5/7/2019	MRS03-APN31021080-SS001	0	µg/kg	1.94 U	1.03 U	4.20 U	4.20 U	4.20 U	2.63 J	6.46 U	4.20 U	4.20 U	6.46 U	4.20 U	2.58 U	6.46 U	1.94 U	6.46 U	6.46 U
					MRS03-APN31021080-SS002	0	µg/kg	1.82 U	0.971 U	3.94 U	3.94 U	3.94 U	2.88 J	2.45 J	3.94 U	2.43 J	6.06 U	1.90 J	2.43 U	6.06 U	1.82 U	6.06 U	6.06 U
					MRS03-APN31021080-SS003	0	µg/kg	1.96 U	1.05 U	4.25 U	4.25 U	4.25 U	2.82 J	6.54 U	4.25 U	4.25 U	6.54 U	3.22 J	2.62 U	6.54 U	1.96 U	6.54 U	2.35 J
					MRS03-APN31021080-SS1001	1	µg/kg	1.81 U	0.966 U	3.92 U	3.92 U	3.92 U	6.04 U	6.04 U	3.92 U	3.92 U	6.04 U	3.92 U	2.42 U	6.04 U	1.81 U	6.04 U	6.04 U
					MRS03-APN31021080-SS1002	1	µg/kg	1.83 U	0.977 U	3.97 U	3.97 U	3.97 U	6.11 U	6.11 U	3.97 U	3.97 U	6.11 U	3.97 U	2.44 U	6.11 U	1.83 U	6.11 U	6.11 U
					MRS03-APN31021080-SS1003	1	µg/kg	1.83 U	0.978 U	3.97 U	1.75 J	1.86 J	4.06 J	3.03 J	3.97 U	3.18 J	6.11 U	3.78 J	2.44 U	6.11 U	1.83 U	2.16 J	3.29 J
					MRS03-APN31021080-SS2001	2	µg/kg	1.78 U	0.948 U	3.85 U	3.85 U	3.85 U	5.92 U	5.92 U	3.85 U	3.85 U	5.92 U	3.85 U	2.37 U	5.92 U	1.78 U	5.92 U	5.92 U
					MRS03-APN31021080-SS2002	2	µg/kg	1.79 U	0.954 U	3.88 U	3.88 U	3.88 U	5.96 U	5.96 U	3.88 U	3.88 U	5.96 U	3.88 U	2.39 U	5.96 U	1.79 U	5.96 U	5.96 U
					MRS03-APN31021080-SS2003	2	µg/kg	1.99 U	1.06 U	4.30 U	4.30 U	1.83 J	3.01 J	6.62 U	4.30 U	2.47 J	6.62 U	2.85 J	2.65 U	6.62 U	1.99 U	6.62 U	2.75 J
3	31021080A*	--	E Thompson Ave	5/22/2019	MRS03-APN31021080-SS001A	0	µg/kg	0.948 J	1.06 R	4.32 R	16.0 J	28.6 J	40.3 J	29.7 J	15.6 J	19.6 J	6.97 J	15.0 J	2.66 R	29.8 J	2.40 J	4.93 J	14.9 J
					MRS03-APN31021080-SS002A	0	µg/kg	0.758 J	1.06 R	4.31 R	13.3 J	26.1 J	46.7 J	46.6 J	18.1 J	22.4 J	10.0 J	12.2 J	2.65 R	44.7 J	1.67 J	5.22 J	10.9 J
					MRS03-APN31021080-SS003A	0	µg/kg	0.660 J	1.03 R	4.19 R	8.89 J	20.5 J	29.6 J	25.1 J	11.4 J	12.6 J	5.27 J	8.98 J	2.58 R	24.7 J	1.04 J	3.50 J	8.55 J
					MRS03-APN31021080-SS1001A	1	µg/kg	0.774 J	0.442 J	4.25 R	23.7 J	40.4 J	66.8 J	49.2 J	24.2 J	31.6 J	12.3 J	21.3 J	2.61 R	45.6 J	1.69 J	6.18 J	20.5 J
					MRS03-APN31021080-SS1002A	1	µg/kg	1.17 J	0.967 J	3.98 J	69.4 J	172 J	237 J	193 J	87.2 J	95.9 J	42.7 J	59.2 J	2.64 R	188 J	3.26 J	19.3 J	57.7 J
					MRS03-APN31021080-SS1003A	1	µg/kg	1.43 J	0.497 J	2.27 J	40.0 J	90.0 J	126 J	107 J	41.2 J	54.0 J	24.3 J	37.7 J	2.65 R	105 J	4.46 J	11.0 J	36.6 J
					MRS03-APN31021080-SS2001A	2	µg/kg	1.99 R	1.06 R	4.31 R	2.41 J	4.33 J	8.32 J	4.90 J	3.17 J	4.40 J	6.64 R	3.82 J	2.65 R	4.99 J	0.964 J	6.64 R	3.87 J
					MRS03-APN31021080-SS2002A	2	µg/kg	1.91 R	1.02 R	4.15 R	4.15 R	1.97 J	4.04 J	2.46 J	4.15 R	2.36 J	6.38 R	2.82 J	2.55 R	2.55 J	0.938 J	6.38 R	2.59 J
					MRS03-APN31021080-SS2003A	2	µg/kg	1.99 R	1.06 R	4.32 R	1.96 J	2.82 J	5.48 J	3.19 J	2.21 J	2.95 J	6.65 R	3.09 J	2.66 R	3.11 J	0.652 J	6.65 R	3.14 J
3	31021080B*	--	E Thompson Ave	5/23/2019	MRS03-APN31021080-SS001B	0	µg/kg	1.94 R	1.04 R	4.21 R	6.53 J	7.67 J	10.7 J	5.84 J	3.96 J	7.39 J	6.47 R	12.3 J	2.59 R	5.81 J	1.94 R	6.75 J	10.1 J
					MRS03-APN31021080-SS002B	0	µg/kg	1.99 R	1.06 R	4.31 R	2.11 J	4.70 J	6.61 J	5.61 J	4.31 R	2.90 J	6.64 R	2.09 J	2.65 R	4.88 J	1.99 R	6.64 R	6.64 R
					MRS03-APN31021080-SS003B	0	µg/kg	1.97 R	1.05 R	4.26 R	4.26 R	1.64 J	3.32 J	6.56 R	4.26 R	4.26 R	6.56 R	2.62 J	2.62 R	6.56 R	1.97 R	6.56 R	6.56 R
					MRS03-APN31021080-SS1001B	1	µg/kg	1.93 R	1.03 R	4.19 R	4.19 R	4.19 R	6.44 R	6.44 R	4.19 R	4.19 R	6.44 R	4.19 R	2.58 R	6.44 R	1.93 R	6.44 R	6.44 R
					MRS03-APN31021080-SS1002B	1	µg/kg	1.98 R	1.06 R	4.30 R	4.30 R	2.13 J	3.28 J	2.30 J	4.30 R	4.30 R	6.61 R	4.30 R	2.64 R	2.30 J	1.98 R	6.61 R	6.61 R
					MRS03-APN31021080-SS1003B	1	µg/kg	1.94 R	1.04 R	4.21 R	4.49 J	44.8 J	56.4 J	110 J	18.4 J	8.25 J	19.4 J	3.25 J	2.59 R	99.5 J	1.94 R	6.48 R	2.86 J
					MRS03-APN31021080-SS2001B	2	µg/kg	1.98 R	1.06 R	4.29 R	4.29 R	4.29 R	6.61 R	6.61 R	4.29 R	4.29 R	6.61 R	4.29 R	2.64 R	6.61 R	1.98 R	6.61 R	6.61 R
					MRS03-APN31021080-SS2002B	2	µg/kg	1.98 R	1.06 R	4.28 R	4.28 R	4.28 R	6.59 R	6.59 R	4.28 R	4.28 R	6.59 R	4.28 R	2.64 R	6.59 R	1.98 R	6.59 R	6.59 R
					MRS03-APN31021080-SS2003B	2	µg/kg	1.97 R	1.05 R	4.27 R	4.27 R	4.27 R	6.57 R	6.57 R	4.27 R	4.27 R	6.57 R	4.27 R	2.63 R	6.57 R	1.97 R	6.57 R	6.57 R

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
4	31038002	4015	E Thompson Ave	3/21/2019	MRS03-APN31038002-SS001	0	µg/kg	1.99 UJ	1.06 UJ	4.32 UJ	4.54 J	6.88 J	8.41 J	5.20 J	3.39 J	7.09 J	6.64 UJ	8.59 J	2.66 UJ	5.07 J	1.99 UJ	3.69 J	8.31 J
					MRS03-APN31038002-SS002	0	µg/kg	1.99 UJ	1.06 UJ	4.30 UJ	3.87 J	5.26 J	7.30 J	4.44 J	2.76 J	5.77 J	6.62 UJ	7.40 J	2.65 UJ	4.27 J	1.99 UJ	3.12 J	6.91 J
					MRS03-APN31038002-SS003	0	µg/kg	0.751 J	0.570 J	2.92 J	23.6 J	32.6 J	44.1 J	25.3 J	16.6 J	33.5 J	6.44 J	39.1 J	2.65 UJ	28.1 J	1.33 J	16.5 J	37.5 J
					MRS03-APN31038002-SS1001	1	µg/kg	0.824 J	1.05 UJ	4.27 UJ	7.62 J	11.0 J	13.8 J	8.84 J	5.46 J	11.2 J	6.57 UJ	12.2 J	2.63 UJ	9.36 J	1.23 J	5.11 J	12.1 J
					MRS03-APN31038002-SS1002	1	µg/kg	0.646 J	1.06 UJ	4.32 UJ	2.52 J	3.12 J	3.99 J	2.31 J	4.32 UJ	2.99 J	6.65 UJ	4.74 J	2.66 UJ	2.69 J	2.00 UJ	3.13 J	4.03 J
					MRS03-APN31038002-SS1003	1	µg/kg	0.750 J	1.01 U	4.09 U	3.28 J	3.36 J	9.05 J	3.91 J	3.77 J	5.80 J	6.29 U	3.60 J	2.52 U	4.89 J	1.19 J	6.29 U	2.89 J
					MRS03-APN31038002-SS2001	2	µg/kg	1.96 UJ	1.04 UJ	4.24 UJ	4.24 UJ	4.24 UJ	6.52 UJ	6.52 UJ	4.24 UJ	4.24 UJ	6.52 UJ	4.24 UJ	2.61 UJ	6.52 UJ	1.96 UJ	6.52 UJ	6.52 UJ
					MRS03-APN31038002-SS2002	2	µg/kg	1.95 UJ	1.04 UJ	4.21 UJ	4.21 UJ	4.21 UJ	6.49 UJ	6.49 UJ	4.21 UJ	4.21 UJ	6.49 UJ	4.21 UJ	2.59 UJ	6.49 UJ	1.95 UJ	6.49 UJ	6.49 UJ
					MRS03-APN31038002-SS2003	2	µg/kg	1.05 J	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.57 J	6.57 U	6.57 U
5	32404206A	3910	E. Devlin Avenue	4/4/2019	MRS03-APN32404206A-SS001	0	µg/kg	19.8	1.46 J	3.81 J	37.8	55.1	72.0	39.6	26.2	55.3	11.4	65.9	2.37 U	44.2	11.5	25.5	66.3
					MRS03-APN32404206A-SS002	0	µg/kg	1.64 J	1.86 J	7.54 J	57.8	76.1	99.1	57.1	42.4	76.2	17.2	99.1	1.02 J	62.5	3.41 J	43.3	93.1
					MRS03-APN32404206A-SS003	0	µg/kg	4.11 J	1.12 J	3.28 J	31.9	46.1	61.4	33.3	22.6	45.3	9.06 J	51.9	2.58 U	37.1	4.02 J	18.5	52.8
					MRS03-APN32404206A-SS1001	1	µg/kg	0.835 J	0.574 J	4.23 U	14.1	19.8	24.6	13.9	10.0	20.0	4.01 J	21.5 J	2.60 U	15.4	1.89 J	8.35 J	22.3 J
					MRS03-APN32404206A-SS1002	1	µg/kg	0.752 J	1.02 U	4.15 U	15.5	18.9	26.2	11.9	9.53 J	19.1	3.62 J	17.0 J	2.56 U	14.2	1.39 J	4.18 J	17.1 J
					MRS03-APN32404206A-SS1003	1	µg/kg	1.02 J	0.959 UJ	3.89 UJ	7.50 J	11.3 J	14.0 J	7.72 J	5.28 J	11.2 J	5.99 UJ	11.9 J	2.40 UJ	8.60 J	1.78 J	4.80 J	12.6 J
					MRS03-APN32404206A-SS2001	2	µg/kg	0.785 J	0.977 U	3.97 U	3.97 U	2.12 J	2.57 J	6.11 U	3.97 U	2.08 J	6.11 U	2.17 J	2.44 U	6.11 U	1.53 J	6.11 U	2.34 J
					MRS03-APN32404206A-SS2002	2	µg/kg	0.770 J	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	1.95 U	6.49 U	6.49 U
					MRS03-APN32404206A-SS2003	2	µg/kg	0.848 J	0.990 U	4.02 U	4.02 U	4.02 U	6.19 U	6.19 U	4.02 U	4.02 U	6.19 U	4.02 U	2.48 U	6.19 U	1.42 J	6.19 U	6.19 U
6	32404208A	3900	E. Devlin Avenue	3/7/2019	MRS03-APN32404208A-SS001	0	µg/kg	3.30 J	1.04 U	2.81 J	26.2	41.0 J	54.6 J	33.6 J	21.6 J	35.0	8.84 J	34.9 J	1.58 J	35.8 J	4.67 J	14.8 J	35.3 J
					MRS03-APN32404208A-SS002	0	µg/kg	2.57 J	1.04 UJ	1.89 J	16.6 J	22.0 J	30.0 J	17.4 J	11.0 J	24.5 J	6.52 UJ	27.4 J	2.61 UJ	18.0 J	3.55 J	12.6 J	26.7 J
					MRS03-APN32404208A-SS003	0	µg/kg	2.71 J	5.53 J	6.68 J	24.1	28.1 J	39.8 J	22.8 J	14.1 J	34.0	5.50 J	46.3 J	5.02 J	22.9 J	4.04 J	36.5 J	44.9 J
					MRS03-APN32404208A-SS1001	1	µg/kg	1.36 J	0.462 J	4.17 U	13.1	17.6	24.5	13.7	9.08 J	17.5	3.61 J	17.9	2.56 U	14.9	2.42 J	6.87 J	18.2
					MRS03-APN32404208A-SS1002	1	µg/kg	3.75 J	5.77 J	7.83 J	63.3 J	82.1 J	88.6 J	48.8 J	39.4 J	88.4 J	14.8 J	84.8 J	2.43 J	56.6 J	7.44 J	39.2 J	100 J
					MRS03-APN32404208A-SS1003	1	µg/kg	1.14 J	0.411 J	1.58 J	11.2	14.8	19.9	10.7	7.25 J	14.7	6.39 U	20.0	2.55 U	11.9	2.30 J	8.89 J	19.1
					MRS03-APN32404208A-SS2001	2	µg/kg	1.15 J	1.02 U	4.15 U	4.15 U	4.15 U	6.38 U	6.38 U	4.15 U	4.15 U	6.38 U	4.15 U	2.55 U	6.38 U	2.73 J	6.38 U	6.38 U
					MRS03-APN32404208A-SS2002	2	µg/kg	0.961 J	1.01 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	2.02 J	6.33 U	6.33 U
					MRS03-APN32404208A-SS2003	2	µg/kg	0.872 J	1.02 UJ	4.16 UJ	4.16 UJ	4.16 UJ	6.39 UJ	6.39 UJ	4.16 UJ	4.16 UJ	6.39 UJ	4.16 UJ	2.56 UJ	6.39 UJ	1.71 J	6.39 UJ	6.39 UJ
7	32404211C	3879	E. Shaeffer Ave	10/22/2019	MRS03-APN32404211C-SS001	0	µg/kg	3.07 J	1.60 J	4.63 J	28.2	37.7	57.4	33.2	23.2	47.5	8.84 J	50.4	1.63 J	34.3	5.01 J	19.2	61.7
					MRS03-APN32404211C-SS002	0	µg/kg	1.92 U	1.02 U	4.16 U	2.20 J	2.65 J	4.23 J	2.38 J	4.16 U	3.23 J	6.40 U	3.19 J	2.56 U	2.58 J	0.979 J	6.40 U	3.28 J
					MRS03-APN32404211C-SS003	0	µg/kg	1.83 J	1.17 J	3.55 J	29.4	39.8	56.3	32.1	21.9	44.2	8.18 J	50.0	0.940 J	33.6	3.49 J	19.4	50.3
					MRS03-APN32404211C-SS1001	1	µg/kg	0.791 J	0.645 J	2.24 J	15.8 J	20.5 J	30.6 J	17.5 J	12.0 J	23.4 J	6.15 J	26.9 J	2.60 U	18.0 J	1.57 J	10.1 J	26.5 J
					MRS03-APN32404211C-SS1002	1	µg/kg	7.77 U	4.15 U	16.8 U	11.9 J	15.9 J	22.2 J	13.1 J	8.11 J	18.5 J	25.9 U	18.5 J	10.4 U	13.0 J	3.09 J	25.9 U	19.8 J
					MRS03-APN32404211C-SS1003	1	µg/kg	2.32 J	0.789 J	1.41 J	13.3 J	19.2 J	26.4 J	13.6 J	10.3 J	21.2 J	3.81 J	23.0 J	2.60 U	15.4 J	3.62 J	8.36 J	24.2 J
					MRS03-APN32404211C-SS2001	2	µg/kg	2.12 J	0.373 J	4.10 U	3.53 J	4.60 J	6.61 J	3.89 J	2.59 J	5.42 J	6.31 U	5.73 J	2.52 U	3.80 J	3.55 J	2.70 J	5.60 J
					MRS03-APN32404211C-SS2002	2	µg/kg	2.94 J	1.14 J	3.25 J	20.2	26.4	41.2	23.2	15.3	32.9	5.82 J	35.9	2.43 U	24.1	4.32 J	14.2	40.2
					MRS03-APN32404211C-S2003	2	µg/kg	2.33 J	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	2.89 J	6.63 U	6.63 U
8	32404213	3887	E Shaeffer Ave	5/15/2019	MRS03-APN32404213-SS001	0	µg/kg	1.87 J	1.82 J	2.80 J	14.9 J	23.7 J	31.7 J	17.5 J	11.2 J	23.8 J	4.17 J	29.4 J	2.37 J	16.8 J	2.70 J	12.3 J	30.1 J
					MRS03-APN32404213-SS002	0	µg/kg	3.25 J	0.876 J	1.59 J	12.6 J	20.2 J	29.5 J	16.1 J	9.93 J	21.4 J	3.79 J	25.4 J	2.58 J	15.3 J	4.29 J	9.69 J	24.9 J
					MRS03-APN32404213-SS003	0	µg/kg	3.06 J	1.06 UJ	3.23 J	13.4 J	23.4 J	33.2 J	18.5 J	10.9 J	23.7 J	3.95 J	28.6 J	2.65 UJ	17.1 J	3.34 J	12.1 J	33.0 J

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
9	32404241	3846	E Devlin Ave	2/6/2019	MRS03-APN32404241-SS001	0	µg/kg	1.36 J	1.03 UJ	4.18 UJ	5.11 J	7.44 J	13.1 J	7.16 J	5.36 J	9.70 J	6.43 UJ	11.4 J	2.57 UJ	7.75 J	2.04 J	5.87 J	10.5 J
					MRS03-APN32404241-SS002	0	µg/kg	2.05 J	0.480 J	4.15 U	5.44 J	7.92 J	13.1	7.58 J	4.74 J	9.37 J	6.39 U	11.2	2.55 U	8.65 J	3.59 J	4.91 J	10.9
					MRS03-APN32404241-SS003	0	µg/kg	1.86 J	1.05 U	4.26 U	6.09 J	8.83 J	14.8	8.70 J	5.72 J	10.4	6.55 U	12.8	2.62 U	9.35 J	2.47 J	5.26 J	11.9
					MRS03-APN32404241-SS1001	1	µg/kg	1.07 J	1.05 U	4.25 U	2.10 J	3.39 J	4.64 J	3.09 J	4.25 U	3.24 J	6.54 U	3.48 J	2.61 U	3.08 J	1.75 J	6.54 U	3.41 J
					MRS03-APN32404241-SS1002	1	µg/kg	1.57 J	1.02 U	4.13 U	2.35 J	3.80 J	5.15 J	3.29 J	1.93 J	3.50 J	6.35 U	4.21 J	2.54 U	3.43 J	2.61 J	6.35 U	4.26 J
					MRS03-APN32404241-SS1003	1	µg/kg	0.933 J	1.01 U	4.09 U	1.79 J	2.39 J	3.60 J	6.29 U	4.09 U	2.74 J	6.29 U	3.33 J	2.52 U	2.17 J	1.46 J	6.29 U	3.25 J
					MRS03-APN32404241-SS2001	2	µg/kg	1.16 J	0.373 J	4.29 U	4.29 U	4.29 U	6.60 U	6.60 U	4.29 U	4.29 U	6.60 U	4.29 U	2.64 U	6.60 U	1.91 J	6.60 U	6.60 U
					MRS03-APN32404241-SS2002	2	µg/kg	1.23 J	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.89 J	6.57 U	6.57 U
					MRS03-APN32404241-SS2003	2	µg/kg	0.946 J	1.04 U	4.24 U	4.24 U	4.24 U	6.53 U	6.53 U	4.24 U	4.24 U	6.53 U	4.24 U	2.61 U	6.53 U	1.58 J	6.53 U	6.53 U
10	32404242*	3842	E Devlin Ave	2/5/2019	MRS03-APN32404242-SS001	0	µg/kg	8.25 J	0.574 J	4.28 J	11.3	15.1	25.4	11.7	9.03 J	21.1	2.59 J	25.8	1.16 J	13.8	17.8	22.2	23.8
					MRS03-APN32404242-SS002	0	µg/kg	7.22 J	0.413 J	2.50 J	7.63 J	8.30 J	18.3	6.95 J	5.90 J	15.3	6.19 U	16.8	2.48 U	8.86 J	15.0	13.4	15.2
					MRS03-APN32404242-SS003	0	µg/kg	4.85 J	1.04 U	2.89 J	8.63 J	10.1	21.8	9.24 J	6.37 J	16.9	6.53 U	19.9	2.61 U	11.1	12.7	15.4	18.0
					MRS03-APN32404242-SS1001	1	µg/kg	1.75 J	1.03 U	4.17 U	4.17 U	1.76 J	2.98 J	6.41 U	4.17 U	2.31 J	6.41 U	2.60 J	2.56 U	6.41 U	3.14 J	6.41 U	2.46 J
					MRS03-APN32404242-SS1002	1	µg/kg	1.54 J	2.44 J	4.25 U	4.25 U	1.71 J	2.94 J	6.53 U	4.25 U	2.34 J	6.53 U	2.82 J	2.61 U	6.53 U	3.75 J	2.32 J	2.77 J
					MRS03-APN32404242-SS1003	1	µg/kg	1.21 J	1.01 UJ	4.09 UJ	4.09 UJ	4.09 UJ	2.72 J	6.30 UJ	4.09 UJ	2.01 J	6.30 UJ	2.22 J	2.52 UJ	6.30 UJ	2.42 J	6.30 UJ	6.30 UJ
					MRS03-APN32404242-SS2001	2	µg/kg	1.41 J	1.04 U	4.22 U	4.22 U	4.22 U	6.49 U	6.49 U	4.22 U	4.22 U	6.49 U	4.22 U	2.60 U	6.49 U	2.60 J	6.49 U	6.49 U
					MRS03-APN32404242-SS2002	2	µg/kg	1.97 J	0.968 U	3.93 U	3.93 U	3.93 U	6.05 U	6.05 U	3.93 U	3.93 U	6.05 U	3.93 U	2.42 U	6.05 U	2.41 J	6.05 U	6.05 U
					MRS03-APN32404242-SS2003	2	µg/kg	2.56 J	0.951 U	3.86 U	3.86 U	1.39 J	5.94 U	5.94 U	3.86 U	3.86 U	5.94 U	1.83 J	2.38 U	5.94 U	3.54 J	5.94 U	5.94 U
11	32404277A	3825	E. Shaeffer Ave	10/17/2019	MRS03-APN32404277A-SS001	0	µg/kg	4.80 J	1.24 J	4.57 J	30.6	41.9	58.9	33.7	22.8	45.2	8.13 J	56.1	1.07 J	35.8	6.81 J	23.9	53.0
					MRS03-APN32404277A-SS002	0	µg/kg	1.80 J	1.34 J	6.16 J	59.4	76.9	101	56.1	43.1	82.3	15.5	102	1.35 J	62.1	3.95 J	33.5	99.5
					MRS03-APN32404277A-SS003	0	µg/kg	2.45 J	1.79 J	10.0	58.1	75.0	98.1	74.9	40.9	68.4	17.0	79.3	2.29 J	68.0	5.35 J	31.8	87.9
12	32404279	3841	E Shaeffer Ave	2/26/2019	MRS03-APN32404279-SS001	0	µg/kg	0.579 J	0.989 UJ	4.02 UJ	5.22 J	6.75 J	10.7 J	6.06 J	4.28 J	10.7 J	6.18 UJ	9.85 J	2.47 UJ	5.95 J	1.98 J	4.44 J	9.10 J
					MRS03-APN32404279-SS002	0	µg/kg	1.30 J	0.383 J	4.25 U	5.69 J	6.96 J	11.2	6.28 J	4.47 J	10.6	6.53 U	10.8	2.61 U	6.21 J	2.71 J	5.08 J	10.1
					MRS03-APN32404279-SS003	0	µg/kg	1.03 J	0.984 U	4.00 U	5.71 J	6.79 J	9.99	6.40 J	4.19 J	10.4	6.15 U	10.8	2.46 U	6.37 J	2.45 J	5.28 J	9.79
13	32404280	3845	E Shaeffer Ave	2/27/2019	MRS03-APN32404280-SS001	0	µg/kg	1.55 J	0.447 J	3.99 U	6.10 J	7.53 J	12.4 J	7.79 J	9.21 U	11.6 J	6.14 U	12.5 J	2.46 U	7.37 J	3.38 J	5.92 J	11.3 J
					MRS03-APN32404280-SS002	0	µg/kg	0.937 J	1.04 UJ	4.21 UJ	3.89 J	4.79 J	7.93 J	9.72 UJ	9.72 UJ	7.71 J	6.48 UJ	7.41 J	2.59 UJ	5.06 J	2.51 J	3.60 J	6.91 J
					MRS03-APN32404280-SS003	0	µg/kg	1.68 J	0.463 J	4.04 UJ	4.75 J	6.95 J	10.3 J	7.02 J	9.32 UJ	9.38 J	6.21 UJ	8.96 J	2.48 UJ	6.60 J	3.02 J	4.87 J	8.54 J
					MRS03-APN32404280-SS1001	1	µg/kg	1.44 J	0.315 J	4.20 U	2.21 J	9.68 U	3.96 J	9.68 U	4.20 U	3.86 J	6.46 U	3.94 J	2.58 U	2.52 J	2.77 J	6.46 U	3.64 J
					MRS03-APN32404280-SS1002	1	µg/kg	1.22 J	1.02 U	4.13 U	4.13 U	4.13 U	6.35 U	6.35 U	4.13 U	1.93 J	6.35 U	2.35 J	2.54 U	6.35 U	2.28 J	6.35 U	6.35 U
					MRS03-APN32404280-SS1003	1	µg/kg	1.33 J	0.988 U	4.01 U	4.01 U	9.26 U	2.67 J	6.17 U	4.01 U	2.57 J	6.17 U	2.48 J	2.47 U	6.17 U	2.32 J	6.17 U	2.21 J
					MRS03-APN32404280-SS2001	2	µg/kg	1.18 J	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.60 U	6.51 U	2.35 J	6.51 U	6.51 U
					MRS03-APN32404280-SS2002	2	µg/kg	0.809 J	0.980 U	3.98 U	3.98 U	3.98 U	6.12 U	6.12 U	3.98 U	3.98 U	6.12 U	3.98 U	2.45 U	6.12 U	1.63 J	6.12 U	6.12 U
					MRS03-APN32404280-SS2003	2	µg/kg	1.18 J	0.975 U	3.96 U	3.96 U	3.96 U	6.09 U	6.09 U	3.96 U	3.96 U	6.09 U	3.96 U	2.44 U	6.09 U	2.49 J	6.09 U	6.09 U
14	32404487	3846	E Hearne Ave	3/6/2019	MRS03-APN32404487-SS001	0	µg/kg	1.97 UJ	1.05 UJ	4.27 UJ	11.5 J	14.8 J	23.1 J	28.7 J	8.56 J	18.3 J	3.67 J	18.4 J	2.63 UJ	17.8 J	0.745 J	7.52 J	19.1 J
					MRS03-APN32404487-SS002	0	µg/kg	1.14 J	1.26 J	5.77 J	45.3	65.8	106	171	44.2	71.4	16.9	76.2 J	2.66 U	83.8	2.16 J	28.8 J	82.6 J
					MRS03-APN32404487-SS003	0	µg/kg	0.888 J	0.944 U	6.27 J	43.7	65.4	102	113	37.8	66.8	13.9	81.4 J	2.36 U	72.8	1.74 J	33.1 J	82.1 J
15	32404526	3845	E Devlin Ave	2/8/2019	MRS03-APN32404526-SS001	0	µg/kg	4.55 J	2.48 J	9.30 J	85.4 J	145 J	171 J	99.8	69.0 J	111 J	26.8	134 J	1.79 J	117	5.81 J	52.5 J	136 J
					MRS03-APN32404526-SS002	0	µg/kg	3.66 J	2.10 J	6.63 J	61.4 J	107 J	128 J	73.1	54.2 J	81.0 J	20.0	100 J	1.95 J	90.3	6.15 J	40.3 J	101 J
					MRS03-APN32404526-SS003	0	µg/kg	2.31 J	2.60 J	12.9 J	94.5 J	151 J	181 J	104	76.3 J	115 J	27.3	159 J	1.83 J	125	3.75 J	65.8 J	153 J
					MRS03-APN32404526-SS1001	1	µg/kg	1.36 J	0.796 J	4.14 J	29.3	39.0	50.3	26.9	22.2	35.6	7.23 J	52.1	2.66 U	33.6	3.11 J	23.9	49.1
					MRS03-APN32404526-SS1002	1	µg/kg	1.41 J	0.612 J	1.81 J	16.5	26.1	32.6	19.4	12.4	21.8	5.14 J	28.2	2.62 U	23.7	2.96 J	11.5	27.6
					MRS03-APN32404526-SS1003	1	µg/kg	3.44 J	9.52 J	97.1	427	421	617	291	293	457	99.0	862	4.08 J	361	8.77 J	420	729
					MRS03-APN32404526-SS2001	2	µg/kg	0.684 J	1.03 U	4.16 U	4.16 U	4.16 U	6.41 U	6.41 U	4.16 U	4.16 U	6.41 U	4.16 U	2.56 U	6.41 U	1.51 J	6.41 U	6.41 U
					MRS03-APN32404526-SS2002	2	µg/kg	1.95 J	1.04 U	4.22 U	4.22 U	4.22 U	6.50 U	6.50 U	4.22 U	4.22 U	6.50 U	4.22 U	2.60 U	6.50 U	4.13 J	6.50 U	6.50 U
					MRS03-APN32404526-SS2003	2	µg/kg	0.748 J	1.05 U	4.26 U	4.26 U	4.26 U	6.55 U	6.55 U	4.26 U	4.26 U	6.55 U	4.26 U	2.62 U	6.55 U	1.58 J	6.55 U	6.55 U

TABLE 6-4

SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	μg/kg															
16	32404527	3849	E Devlin Ave	2/19/2019	MRS03-APN32404527-SS001	0	μg/kg	3.37 J	6.83 J	14.2 J	110 J	144 J	174 J	112 J	75.8 J	165 J	28.7 J	168 J	2.56 J	117 J	6.25 J	78.5 J	179 J
					MRS03-APN32404527-SS002	0	μg/kg	2.18 J	2.54 J	6.50 J	55.4 J	73.5 J	98.2 J	64.7 J	42.1 J	84.1 J	15.2 J	94.9 J	1.36 J	65.0 J	3.38 J	43.2 J	96.3 J
					MRS03-APN32404527-SS003	0	μg/kg	4.61 J	3.41 J	8.68 J	66.0 J	91.4 J	116 J	75.7 J	49.3 J	100 J	17.9 J	114 J	1.96 J	77.4 J	5.64 J	52.5 J	115 J
					MRS03-APN32404527-SS1001	1	μg/kg	3.97 J	8.56 J	30.2 J	164 J	204 J	249 J	157 J	101 J	221 J	37.7 J	282 J	4.99 J	160 J	8.57 J	145 J	274 J
					MRS03-APN32404527-SS1002	1	μg/kg	1.74 J	1.22 J	3.50 J	37.2 J	46.7 J	65.9 J	40.0 J	26.7 J	61.9 J	9.62 J	63.9 J	2.61 UJ	41.1 J	3.33 J	27.0 J	67.0 J
					MRS03-APN32404527-SS1003	1	μg/kg	2.18 J	2.23 J	8.15 J	67.7 J	89.4 J	111 J	70.8 J	49.6 J	103 J	16.7 J	112 J	1.14 J	71.7 J	3.90 J	49.0 J	110 J
					MRS03-APN32404527-SS2001	2	μg/kg	1.46 J	1.02 UJ	4.12 UJ	3.78 J	4.01 J	6.07 J	3.27 J	2.43 J	5.50 J	6.35 UJ	7.38 J	2.54 UJ	3.43 J	2.23 J	3.79 J	6.48 J
					MRS03-APN32404527-SS2002	2	μg/kg	1.32 J	1.01 UJ	4.11 UJ	4.11 UJ	1.66 J	2.67 J	6.32 UJ	4.11 UJ	2.57 J	6.32 UJ	2.77 J	2.53 UJ	6.32 UJ	2.22 J	6.32 UJ	2.73 J
					MRS03-APN32404527-SS2003	2	μg/kg	3.78 J	0.997 UJ	4.05 UJ	4.05 UJ	1.52 J	2.48 J	6.23 UJ	4.05 UJ	2.32 J	6.23 UJ	2.67 J	2.49 UJ	6.23 UJ	4.05 J	6.23 UJ	2.31 J
17	32404550*	3960	E Hearne Ave	2/19/2019	MRS03-APN32404550-SS001	0	μg/kg	6.30 J	9.43 J	21.9 J	152 J	195 J	230 J	138 J	110 J	221 J	35.3 J	250 J	4.69 J	145 J	8.73 J	113 J	273 J
					MRS03-APN32404550-SS002	0	μg/kg	5.54 J	4.62 J	22.0 J	110 J	149 J	189 J	116 J	76.4 J	151 J	27.8 J	201 J	3.94 J	120 J	6.72 J	101 J	194 J
					MRS03-APN32404550-SS003	0	μg/kg	19.7 UJ	10.7 J	23.3 J	409 J	681 J	853 J	548 J	373 J	599 J	138 J	400 J	26.3 UJ	573 J	19.7 UJ	111 J	447 J
					MRS03-APN32404550-SS1001	1	μg/kg	7.73 U	7.61 J	24.1 J	305 J	345 J	418 J	219 J	172 J	338 J	60.5 J	362 J	4.24 J	247 J	9.26 J	94.5 J	381 J
					MRS03-APN32404550-SS1002	1	μg/kg	6.07 J	7.92 J	24.2	153 J	196 J	235 J	153 J	95.0 J	216 J	36.5 J	237 J	4.35 J	153 J	7.68 J	115 J	247 J
					MRS03-APN32404550-SS1003	1	μg/kg	5.03 J	2.97 J	12.0	71.1 J	86.6 J	112 J	70.7 J	44.8 J	98.1 J	16.7 J	129 J	2.25 J	72.7 J	5.92 J	61.0 J	126 J
					MRS03-APN32404550-SS2001	2	μg/kg	2.60 J	1.01 U	4.12 U	8.64 J	8.04 J	14.2	5.66 J	5.21 J	12.4	6.34 U	8.89 J	2.54 U	6.65 J	2.97 J	2.80 J	8.25 J
					MRS03-APN32404550-SS2002	2	μg/kg	3.24 J	0.979 U	3.98 U	3.98 U	3.98 U	6.12 U	6.12 U	3.98 U	3.98 U	6.12 U	3.98 U	2.45 U	6.12 U	3.27 J	6.12 U	6.12 U
					MRS03-APN32404550-SS2003	2	μg/kg	3.02 J	1.04 U	4.21 U	4.21 U	4.21 U	6.49 U	6.49 U	4.21 U	4.21 U	6.49 U	2.11 J	2.59 U	6.49 U	3.21 J	6.49 U	6.49 U
18	32404552A	3950	E Hearne Ave	2/7/2019	MRS03-APN32404552A-SS001	0	μg/kg	2.12 J	0.922 J	2.88 J	21.0 J	30.6 J	42.8 J	22.6 J	16.7 J	28.1 J	6.29 J	33.9 J	1.96 J	27.4 J	3.23 J	14.3 J	32.6 J
					MRS03-APN32404552A-SS002	0	μg/kg	2.23 J	0.978 J	2.76 J	21.3 J	30.7 J	43.0 J	21.5 J	20.6 J	28.3 J	5.61 J	36.6 J	2.18 J	26.3 J	3.02 J	14.7 J	35.8 J
					MRS03-APN32404552A-SS003	0	μg/kg	3.59 J	1.07 J	3.89 J	23.9 J	36.7 J	48.5 J	24.0 J	22.7 J	31.4 J	6.87 J	40.0 J	2.64 J	29.1 J	4.58 J	16.2 J	38.6 J
					MRS03-APN32404552A-SS1001	1	μg/kg	1.34 J	1.06 U	4.29 U	2.43 J	3.63 J	4.84 J	2.18 J	4.29 U	3.27 J	6.60 U	4.25 J	2.64 U	2.59 J	2.64 J	6.60 U	4.19 J
					MRS03-APN32404552A-SS1002	1	μg/kg	1.22 J	1.04 UJ	4.21 UJ	8.58 J	11.4 J	15.1 J	7.11 J	6.23 J	11.1 J	6.48 UJ	14.0 J	2.59 UJ	9.71 J	2.28 J	5.43 J	14.2 J
					MRS03-APN32404552A-SS1003	1	μg/kg	1.02 J	1.03 U	4.18 U	7.85 J	9.94	13.7	7.79 J	5.16 J	10.1	6.43 U	14.4	2.57 U	8.64 J	1.81 J	6.90 J	12.9
					MRS03-APN32404552A-SS2001	2	μg/kg	1.26 J	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	2.53 J	6.54 U	6.54 U
					MRS03-APN32404552A-SS2002	2	μg/kg	1.58 J	0.978 U	3.97 U	3.97 U	3.97 U	6.11 U	6.11 U	3.97 U	3.97 U	6.11 U	3.97 U	2.45 U	6.11 U	3.39 J	6.11 U	6.11 U
					MRS03-APN32404552A-SS2003	2	μg/kg	1.41 J	0.979 U	3.98 U	3.98 U	3.98 U	6.12 U	6.12 U	3.98 U	3.98 U	6.12 U	3.98 U	2.45 U	6.12 U	2.95 J	6.12 U	6.12 U
19	32404553	3946	E. Hearne Ave	1/31/2019	MRS03-APN32404553-SS001	0	μg/kg	4.49 J	0.807 J	2.65 J	29.3 J	37.0 J	51.2 J	22.5 J	24.8 J	41.2 J	6.51 J	39.6 J	1.17 J	28.6 J	5.13 J	13.9 J	40.0 J
					MRS03-APN32404553-SS002	0	μg/kg	4.16 J	1.56 J	11.2 J	65.9 J	79.2 J	107 J	54.3 J	50.0 J	77.9 J	15.3 J	101 J	2.22 J	65.8 J	4.55 J	46.3 J	90.6 J
					MRS03-APN32404553-SS003	0	μg/kg	2.91 J	1.31 J	6.16 J	43.2 J	52.7 J	73.9 J	37.8 J	35.6 J	55.2 J	10.4 J	70.1 J	1.36 J	46.5 J	3.65 J	29.1 J	65.9 J
					MRS03-APN32404553-SS1001	1	μg/kg	4.29 J	0.561 J	2.04 J	11.2	12.5 J	18.2 J	10.0 J	6.76 J	13.0 J	6.60 U	23.7 J	1.11 J	11.1	6.17 J	14.3	20.0 J
					MRS03-APN32404553-SS1002	1	μg/kg	4.97 J	2.29 J	1.77 J	29.5 J	33.1 J	41.1 J	19.1 J	17.1 J	34.4 J	5.99 J	32.1 J	1.26 J	24.4 J	6.27 J	9.37 J	34.5 J
					MRS03-APN32404553-SS1003	1	μg/kg	4.70 J	0.461 J	1.76 J	16.5 J	17.1 J	23.2 J	12.3 J	11.2 J	18.9 J	3.44 J	25.9 J	2.53 U	13.5 J	6.50 J	10.6 J	24.7 J
					MRS03-APN32404553-SS2001	2	μg/kg	4.16 J	1.04 UJ	4.23 UJ	4.23 UJ	4.23 UJ	6.50 UJ	6.50 UJ	4.23 UJ	4.23 UJ	6.50 UJ	4.23 UJ	2.60 UJ	6.50 UJ	5.88 J	6.50 UJ	6.50 UJ
					MRS03-APN32404553-SS2002	2	μg/kg	4.90 J	0.573 J	4.31 U	9.92 J	8.89 J	11.8 J	9.95 U	9.95 U	10.5	6.63 U	12.3	1.06 J	6.38 J	6.84 J	4.52 J	12.9
					MRS03-APN32404553-SS2003	2	μg/kg	3.20 J	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.61 U	6.54 U	4.64 J	6.54 U	6.54 U
20	32404556A	3922	E. Hearne Ave	1/24/2019	MRS03-APN32404556A-SS001	0	μg/kg	4.21 J	4.25 U	6.70 J	39.3 J	52.2	90.4	47.4	32.3 J	73.6	26.5 U	81.1	10.6 U	48.9	8.29 J	33.1 J	74.7
					MRS03-APN32404556A-SS002	0	μg/kg	4.04 J	4.25 UJ	7.15 J	39.6 J	53.3 J	94.0 J	46.4 J	33.8 J	73.7 J	26.5 UJ	77.5 J	10.6 UJ	52.8 J	7.14 J	32.5 J	70.6 J
					MRS03-APN32404556A-SS003	0	μg/kg	5.75 J	3.06 J	18.5 J	93.8	112	173	79.4	71.5	139	20.2 J	176	10.5 U	92.7	12.2 J	86.3	157
21	32404578	3925	E. Devlin Avenue	10/25/2019	MRS03-APN32404578-SS001	0	μg/kg	7.85 J	0.962 U	22.3 J	143 J	276 J	310	168 J	170 J	280 J	52.3 J	74.9 J	5.44 J	183 J	12.7 J	15.9 J	98.5 J
					MRS03-APN32404578-SS002	0	μg/kg	7.27 J	2.77 J	11.4 J	46.8 J	80.1 J	130 J	64.5 J	48.7 J	90.4 J	17.9 J	83.7 J	3.02 J	70.6 J	9.69 J	30.5 J	81.7 J
					MRS03-APN32404578-SS003	0	μg/kg	4.04 J	1.05 U	4.26 U	4.26 U	2.55 J	6.55 U	6.55 U	2.37 J	4.26 U	6.55 U	4.26 U	2.62 U	6.55 U	6.32 J	6.55 U	6.55 U

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
22	32404582	3945	E. Devlin Avenue	10/23/2019	MRS03-APN32404582-SS001	0	µg/kg	25.1 J	52.2 J	87.0 J	458	557	619	345	268	671	103	669	16.2 J	391	59.7 J	367	776
					MRS03-APN32404582-SS002	0	µg/kg	4.66 J	0.971 U	2.53 J	12.7	15.6	26.8	15.2	9.03 J	20.7	3.68 J	23.4	0.936 J	14.3	5.48 J	10.0	22.8
					MRS03-APN32404582-SS003	0	µg/kg	11.0	1.70 J	4.23 J	24.3	29.1	47.3	38.8	17.8	34.9	7.19 J	41.0	1.60 J	30.2	6.49 J	19.0	41.8
					MRS03-APN32404582-SS1001	1	µg/kg	2.19 J	1.03 J	2.52 J	14.8	19.4	25.5	54.6	11.5	21.2	6.71 J	23.3	2.40 U	25.1	3.09 J	10.0	23.5
					MRS03-APN32404582-SS1002	1	µg/kg	2.82 J	3.07 J	30.6	145	161	227	151	88.9	160	34.3	288	1.74 J	155	5.26 J	133	237
					MRS03-APN32404582-SS1003	1	µg/kg	1.05 J	0.756 J	1.63 J	11.8	16.3	22.0	21.8	8.17 J	16.1	4.10 J	20.1	2.40 U	16.7	1.68 J	7.96 J	21.0
					MRS03-APN32404582-SS2001	2	µg/kg	1.27 J	0.623 J	3.90 U	3.90 U	1.38 J	6.00 U	3.22 J	3.90 U	3.90 U	6.00 U	3.90 U	2.40 U	6.00 U	1.65 J	6.00 U	6.00 U
					MRS03-APN32404582-SS2002	2	µg/kg	1.38 J	0.362 J	3.95 U	3.95 U	1.92 J	2.68 J	3.66 J	3.95 U	2.18 J	6.08 U	2.03 J	2.43 U	2.19 J	2.19 J	6.08 U	2.15 J
					MRS03-APN32404582-SS2003	2	µg/kg	1.38 J	0.974 U	3.95 U	3.95 U	1.61 J	2.48 J	6.08 U	3.95 U	1.84 J	6.08 U	1.90 J	2.43 U	6.08 U	2.17 J	6.08 U	6.08 U
23	32404624	3996	E Ryan Ave	4/16/2019	MRS03-APN32404624-SS001R	0	µg/kg	1.83 UJ	0.978 UJ	3.97 UJ	11.6 J	15.1 J	24.3 J	11.3 J	8.46 J	17.8 J	3.12 J	17.4 J	2.45 UJ	13.4 J	1.83 UJ	4.46 J	16.8 J
					MRS03-APN32404624-SS002R	0	µg/kg	1.78 UJ	0.952 UJ	3.87 UJ	13.2 J	15.8 J	24.6 J	11.2 J	9.85 J	20.0 J	3.14 J	21.3 J	2.38 UJ	12.8 J	1.07 J	5.38 J	20.8 J
					MRS03-APN32404624-SS003R	0	µg/kg	1.83 U	0.975 U	3.96 U	11.6	16.1	24.8	11.8	8.82 J	17.8	3.13 J	17.2	2.44 U	14.5	1.83 U	4.42 J	16.2
					MRS03-APN32404624-SS1001R	1	µg/kg	1.92 U	1.03 U	4.17 U	4.17 U	4.17 U	6.41 U	6.41 U	4.17 U	4.17 U	6.41 U	4.17 U	2.57 U	6.41 U	1.92 U	6.41 U	6.41 U
					MRS03-APN32404624-SS1002R	1	µg/kg	1.91 U	1.02 U	4.14 U	4.14 U	1.81 J	4.53 J	2.79 J	2.58 J	2.70 J	6.37 U	4.14 U	2.55 U	3.97 J	1.91 U	6.37 U	6.37 U
					MRS03-APN32404624-SS1003R	1	µg/kg	1.90 U	1.01 U	4.12 U	3.14 J	3.40 J	5.62 J	2.90 J	2.70 J	4.85 J	6.33 U	4.87 J	2.53 U	3.36 J	1.90 U	6.33 U	4.45 J
					MRS03-APN32404624-SS2001R	2	µg/kg	1.95 UJ	1.04 UJ	4.23 UJ	4.23 UJ	4.23 UJ	6.50 UJ	6.50 UJ	4.23 UJ	4.23 UJ	6.50 UJ	4.23 UJ	2.60 UJ	6.50 UJ	1.95 UJ	6.50 UJ	6.50 UJ
					MRS03-APN32404624-SS2002R	2	µg/kg	1.83 UJ	0.977 UJ	3.97 UJ	3.97 UJ	3.97 UJ	6.10 UJ	6.10 UJ	3.97 UJ	3.97 UJ	6.10 UJ	3.97 UJ	2.44 UJ	6.10 UJ	1.83 UJ	6.10 UJ	6.10 UJ
					MRS03-APN32404624-SS2003R	2	µg/kg	1.91 U	1.02 U	4.13 U	4.13 U	4.13 U	6.35 U	6.35 U	4.13 U	4.13 U	6.35 U	4.13 U	2.54 U	6.35 U	1.91 U	6.35 U	6.35 U
24	32404625	3990	E. Ryan Ave	4/16/2019	MRS03-APN32404625-SS001R	0	µg/kg	0.601 J	0.950 UJ	3.86 UJ	8.74 J	10.9 J	15.9 J	8.51 J	6.45 J	14.1 J	2.41 J	15.4 J	2.37 UJ	8.90 J	1.31 J	4.89 J	15.4 J
					MRS03-APN32404625-SS002R	0	µg/kg	1.79 UJ	0.955 UJ	3.88 UJ	8.38 J	9.81 J	15.8 J	7.71 J	5.64 J	13.7 J	5.97 UJ	15.5 J	2.39 UJ	8.21 J	1.79 UJ	4.47 J	15.0 J
					MRS03-APN32404625-SS003R	0	µg/kg	1.83 UJ	0.977 UJ	3.97 UJ	10.6 J	12.2 J	18.6 J	9.23 J	7.47 J	16.0 J	2.50 J	18.2 J	2.44 UJ	10.2 J	1.83 UJ	5.38 J	17.0 J
					MRS03-APN32404625-SS1001R	1	µg/kg	1.91 UJ	1.02 UJ	4.14 UJ	4.14 UJ	1.55 J	6.37 UJ	6.37 UJ	4.14 UJ	2.06 J	6.37 UJ	2.42 J	2.55 UJ	6.37 UJ	1.91 UJ	6.37 UJ	2.32 J
					MRS03-APN32404625-SS1002R	1	µg/kg	1.99 UJ	1.06 UJ	4.31 UJ	4.31 UJ	1.82 J	2.71 J	6.63 UJ	4.31 UJ	2.24 J	6.63 UJ	2.89 J	2.65 UJ	6.63 UJ	1.99 UJ	6.63 UJ	2.72 J
					MRS03-APN32404625-SS1003R	1	µg/kg	1.95 UJ	1.04 UJ	4.21 UJ	3.56 J	4.22 J	7.20 J	5.46 J	4.10 J	6.10 J	3.32 J	4.42 J	2.59 UJ	5.50 J	1.95 UJ	6.49 UJ	4.13 J
					MRS03-APN32404625-SS2001R	2	µg/kg	1.86 UJ	0.993 UJ	4.03 UJ	4.03 UJ	4.03 UJ	6.20 UJ	6.20 UJ	4.03 UJ	4.03 UJ	6.20 UJ	4.03 UJ	2.48 UJ	6.20 UJ	1.86 UJ	6.20 UJ	6.20 UJ
					MRS03-APN32404625-SS2002R	2	µg/kg	1.91 UJ	1.02 UJ	4.15 UJ	4.15 UJ	4.15 UJ	6.38 UJ	6.38 UJ	4.15 UJ	4.15 UJ	6.38 UJ	4.15 UJ	2.55 UJ	6.38 UJ	1.91 UJ	6.38 UJ	6.38 UJ
					MRS03-APN32404625-SS2003R	2	µg/kg	1.86 U	0.990 U	4.02 U	4.02 U	4.02 U	6.18 U	6.18 U	4.02 U	4.02 U	6.18 U	4.02 U	2.47 U	6.18 U	1.86 U	6.18 U	6.18 U
25	32404629A	3966	E. Ryan Ave	3/26/2019	MRS03-APN32404629A-SS001	0	µg/kg	1.70 J	0.784 J	3.48 J	78.3	106	164	82.3	62.2	123	22.4	80.8	1.01 J	86.4	2.42 J	17.0	76.3
					MRS03-APN32404629A-SS002	0	µg/kg	2.11 J	0.484 J	1.59 J	19.6	27.3	39.0	28.8	15.9	32.9	7.75 J	25.6	2.57 U	22.4	2.66 J	8.46 J	24.1
					MRS03-APN32404629A-SS003	0	µg/kg	1.88 J	0.453 J	1.59 J	25.4	34.6	52.9	39.0	18.0	41.1	7.83 J	28.2	2.58 U	30.1	2.56 J	8.54 J	28.0
					MRS03-APN32404629A-SS1001	1	µg/kg	0.984 J	0.799 J	3.94 U	12.2	19.5	26.3	16.3	10.0	22.4	4.70 J	13.8	2.43 U	14.1	2.22 J	5.16 J	15.0
					MRS03-APN32404629A-SS1002	1	µg/kg	0.660 J	1.04 U	4.22 U	4.17 J	6.31 J	8.99 J	4.79 J	3.61 J	6.96 J	6.50 U	7.07 J	2.60 U	5.10 J	1.22 J	3.19 J	6.61 J
					MRS03-APN32404629A-SS1003	1	µg/kg	1.54 J	0.598 J	4.20 U	10.3	14.3	19.9	13.5	6.64 J	17.1	2.83 J	16.2	2.59 U	11.2	1.80 J	5.88 J	17.2
					MRS03-APN32404629A-SS2001	2	µg/kg	0.604 J	1.03 U	4.17 U	2.01 J	3.16 J	4.96 J	2.61 J	4.17 U	3.78 J	6.42 U	2.32 J	2.57 U	2.59 J	1.12 J	6.42 U	2.29 J
					MRS03-APN32404629A-SS2002	2	µg/kg	1.85 U	0.984 U	4.00 U	4.00 U	4.00 U	6.15 U	6.15 U	4.00 U	4.00 U	6.15 U	4.00 U	2.46 U	6.15 U	1.04 J	6.15 U	6.15 U
					MRS03-APN32404629A-SS2003	2	µg/kg	1.83 U	0.977 U	3.97 U	3.97 U	3.97 U	6.11 U	6.11 U	3.97 U	3.97 U	6.11 U	3.97 U	2.44 U	6.11 U	0.899 J	6.11 U	6.11 U
26	32404631B	3960	E. Ryan Ave	5/30/2019	MRS03-APN32404631B-SS001	0	µg/kg	1.33 J	0.968 U	1.84 J	13.9	18.8	31.8	12.6	10.8	20.7	6.05 U	22.4	1.29 J	14.9	2.16 J	10.0	20.8
					MRS03-APN32404631B-SS002	0	µg/kg	1.78 J	0.995 U	2.53 J	16.6	24.9	38.7	15.0	4.04 U	23.1	6.22 U	27.2	1.47 J	19.9	2.89 J	14.0	25.0
					MRS03-APN32404631B-SS003	0	µg/kg	1.27 J	1.04 U	1.69 J	11.8	4.23 U	6.51 U	10.3	4.23 U	15.7	6.51 U	16.7	2.61 U	6.51 U	1.80 J	7.90 J	15.3

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	μg/kg																		
27	32404638	3920	E. Ryan Ave	2/28/2019	MRS03-APN32404638-SS001	0	μg/kg	7.58 J	2.85 J	13.1 J	58.0 J	82.0 J	125 J	71.0 J	49.0 J	106 J	16.4 J	137 J	2.55 J	69.1 J	28.1	70.9 J	140 J
					MRS03-APN32404638-SS002	0	μg/kg	8.57 J	8.03 J	17.9 J	70.9 J	90.9 J	149 J	75.5 J	53.2 J	140 J	18.4 J	252 J	7.86 J	76.7 J	21.4	153 J	236 J
					MRS03-APN32404638-SS003	0	μg/kg	8.68 J	5.33 J	24.8 J	108 J	133 J	195 J	105 J	78.2 J	157 J	26.5 J	214 J	4.43 J	109 J	30.8	115 J	211 J
				3/1/2019	MRS03-APN32404638-SS1001	1	μg/kg	2.91 J	1.92 J	4.96 J	30.9	35.7	47.5	25.7	20.3	43.7	7.04 J	51.8	1.57 J	28.2	4.74 J	23.8	53.3
					MRS03-APN32404638-SS1002	1	μg/kg	1.10 J	0.524 J	3.92 U	11.8	16.3	24.3	13.9	9.06	17.7	2.98 J	17.6	2.41 U	15.1	2.12 J	6.97 J	18.1
					MRS03-APN32404638-SS1003	1	μg/kg	1.26 J	0.755 J	2.08 J	18.3	23.1	28.5	16.5	11.9	29.0	4.45 J	31.4	2.51 U	16.6	2.58 J	13.5	34.9
					MRS03-APN32404638-SS2001	2	μg/kg	1.85 U	0.987 U	4.01 U	4.01 U	4.01 U	6.17 U	6.17 U	4.01 U	4.01 U	6.17 U	4.01 U	2.47 U	6.17 U	2.04 J	6.17 U	6.17 U
					MRS03-APN32404638-SS2002	2	μg/kg	0.839 J	1.00 U	4.07 U	4.07 U	4.07 U	6.26 U	6.26 U	4.07 U	4.07 U	6.26 U	4.07 U	2.51 U	6.26 U	3.06 J	6.26 U	6.26 U
					MRS03-APN32404638-SS2003	2	μg/kg	1.22 J	1.01 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	1.76 J	6.33 U	6.33 U
					MRS03-APN32404639-SS001[1]	0	μg/kg	6.5	14	47	420	290	560	300	240	450	79	710	7.9	290	15	300	740
28	32404639	3916	E. Ryan Ave	4/4/2019	MRS03-APN32404639-SS1001	1	μg/kg	0.782 J	1.24 J	7.07 J	42.0	54.9	72.2	40.0	24.5	50.5	10.2	79.1	2.59 U	43.8	1.95 J	34.6	72.5
					MRS03-APN32404639-SS1002	1	μg/kg	0.803 J	1.12 J	6.91 J	41.8	51.4	66.9	35.1	23.9	52.2	9.41	74.3	2.43 U	38.9	1.47 J	36.1	67.5
					MRS03-APN32404639-SS1003	1	μg/kg	1.15 J	1.13 J	3.54 J	36.1	48.8	65.1	35.3	26.3	50.0	9.61	57.3	2.44 U	39.5	2.12 J	22.5	55.3
					MRS03-APN32404639-SS2001	2	μg/kg	1.95 U	1.04 U	4.23 U	4.23 U	1.80 J	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	2.14 J	2.60 U	6.51 U	1.95 U	6.51 U	6.51 U
					MRS03-APN32404639-SS2002	2	μg/kg	0.783 J	1.01 U	4.08 U	4.08 U	4.08 U	6.28 U	6.28 U	4.08 U	4.08 U	6.28 U	4.08 U	2.51 U	6.28 U	1.88 U	6.28 U	6.28 U
					MRS03-APN32404639-SS2003	2	μg/kg	1.93 U	1.03 U	4.19 U	4.44 J	6.64 J	8.41 J	4.62 J	3.12 J	6.69 J	6.45 U	7.79 J	2.58 U	5.00 J	1.93 U	3.34 J	7.99 J
29	32404640	3910	E. Ryan Ave	4/6/2015	MRS03-APN32404640-SS001[1]	0	μg/kg	160	550	1,200	8,000	5,700	1,600	6,000	4,200	11,000	1,600	14,000	270	5,100	460	6,200	16,000
				3/29/2019	MRS03-APN32404640-SS1001	1	μg/kg	9.33 J	28.7	85.2	571	726	896	456	339	834	137	1,000	10.1	538	31.1	404	1,060
					MRS03-APN32404640-SS1002	1	μg/kg	2.87 J	9.43	47.6	283	274 J	344 J	209	157	289 J	55.9	409 J	6.26 J	231	6.82 J	224	382 J
				4/1/2019	MRS03-APN32404640-SS1003	1	μg/kg	2.17 J	5.82 J	19.8	179	215	255	150	109	243	40.6	267	1.65 J	166	6.55 J	106	284
				3/29/2019	MRS03-APN32404640-SS2001	2	μg/kg	1.05 J	2.32 J	9.63	75.9 J	82.1 J	103 J	57.2	40.8 J	98.2 J	14.8	131 J	2.40 U	61.7	2.72 J	53.9 J	129
					MRS03-APN32404640-SS2002	2	μg/kg	1.56 J	3.32 J	5.97 J	34.7 J	39.5 J	41.9 J	21.0	17.8 J	49.9 J	6.52 J	51.6 J	1.34 J	23.2	4.17 J	25.8 J	60.4
				4/1/2019	MRS03-APN32404640-SS2003	2	μg/kg	1.99 U	1.06 U	4.30 U	7.25 J	9.31 J	11.5 J	5.90 J	4.72 J	10.6 J	6.62 U	12.5 J	2.65 U	6.61 J	1.99 U	4.90 J	13.8
				3/29/2019	MRS03-APN32404640-SS3001	3	μg/kg	1.88 U	1.00 U	4.07 U	10.1	12.7 J	15.9	8.30 J	6.30 J	14.9	6.27 U	17.8	2.51 U	9.11 J	1.88 U	6.66 J	19.5
					MRS03-APN32404640-SS3002	3	μg/kg	1.91 U	1.02 U	4.14 U	9.25 J	11.7 J	14.5	7.89 J	5.63 J	12.2	6.37 U	15.4	2.55 U	8.88 J	1.91 U	6.27 J	15.4
				4/1/2019	MRS03-APN32404640-SS3003	3	μg/kg	2.97 J	7.24 J	9.15 J	45.5	60.3	63.5	31.2	27.6	67.2	9.17 J	70.4	2.64 J	34.7	8.16 J	40.6	86.0
				3/29/2019	MRS03-APN32404640-SS4001	4	μg/kg	1.89 U	1.01 U	4.09 U	5.73 J	7.32 J	10.6	6.10 J	4.30 J	8.04 J	6.29 U	9.04 J	2.51 U	6.72 J	1.89 U	3.75 J	8.42 J
					MRS03-APN32404640-SS4002	4	μg/kg	1.91 U	1.02 U	4.15 U	4.15 U	1.47 J	6.38 U	6.38 U	4.15 U	4.15 U	6.38 U	2.19 J	2.55 U	6.38 U	1.91 U	6.38 U	6.38 U
				4/1/2019	MRS03-APN32404640-SS4003	4	μg/kg	1.33 J	3.67 J	5.31 J	30.3	37.3	40.5	21.4	17.5	44.4	6.38 J	48.5	1.19 J	24.1	3.07 J	25.5	57.8
30	32404656	3915	E. Hearne Ave	1/24/2019	MRS03-APN32404656-SS001	0	μg/kg	5.57 J	3.64 J	7.34 J	57.3 J	79.1 J	105 J	57.7 J	45.1 J	84.1 J	15.2 J	117 J	10.0 U	70.9 J	8.21 J	71.9	115 J
					MRS03-APN32404656-SS002	0	μg/kg	5.28 J	2.17 J	12.6 J	81.4 J	95.9 J	138 J	78.8 J	53.8 J	98.7 J	18.5 J	147 J	10.6 U	91.0 J	7.80 J	70.4	132 J
					MRS03-APN32404656-SS003	0	μg/kg	3.85 J	2.00 J	5.93 J	66.0 J	109 J	139 J	85.1 J	55.5 J	89.6 J	22.8 J	91.5 J	10.6 UJ	100 J	5.16 J	35.9 J	90.7 J
31	32404658	3925	E. Hearne Ave	1/29/2019	MRS03-APN32404658-SS001	0	μg/kg	7.33 U	1.30 J	15.9 U	46.7	63.8 J	87.1	50.2	35.3 J	67.9	9.77 J	76.6	9.78 U	58.7	7.33 U	31.6 J	76.2
					MRS03-APN32404658-SS002	0	μg/kg	2.51 J	1.72 J	6.20 J	61.2	91.7 J	121	68.0	44.0	87.1	15.9 J	96.9	10.5 U	80.2	7.85 U	39.6	95.3
					MRS03-APN32404658-SS003	0	μg/kg	7.50 UJ	1.39 J	16.2 UJ	44.7 J	60.9 J	85.3 J	48.1 J	34.2 J	64.4 J	11.2 J	72.9 J	10.0 UJ	55.4 J	7.50 UJ	30.3 J	74.6 J
					MRS03-APN32404658-SS1001	1	μg/kg	1.11 J	0.737 J	2.97 J	26.1 J	37.7 J	46.1 J	24.7 J	18.7 J	33.5 J	4.95 J	39.4 J	2.60 U	29.9 J	2.47 J	17.4 J	38.0 J
					MRS03-APN32404658-SS1002	1	μg/kg	0.736 J	0.482 J	4.00 UJ	12.7 J	17.5 J	23.6 J	13.9 J	11.4 J	18.1 J	5.10 J	19.0 J	2.46 U	17.4 J	1.17 J	7.45 J	19.9 J
					MRS03-APN32404658-SS1003	1	μg/kg	1.32 J	0.423 J	4.25 UJ	13.3 J	21.1 J	30.9 J	23.2 J	11.6 J	19.7 J	3.71 J	21.5 J	2.62 UJ	22.8 J	1.38 J	8.13 J	22.1 J
					MRS03-APN32404658-SS2001	2	μg/kg	0.648 J	0.998 UJ	4.05 UJ	2.03 J	1.96 J	3.14 J	6.24 UJ	4.05 UJ	2.36 J	6.24 UJ	3.03 J	2.50 UJ	6.24 UJ	1.87 UJ	6.24 UJ	2.78 J
					MRS03-APN32404658-SS2002	2	μg/kg	0.710 J	0.986 U	4.00 UJ	4.00 UJ	4.00 UJ	6.16 UJ	6.16 U	4.00 UJ	4.00 UJ	6.16 U	4.00 UJ	2.46 U	6.16 U	0.972 J	6.16 UJ	6.16 U
					MRS03-APN32404658-SS2003	2	μg/kg	1.05 J	8.68 J	4.00 UJ	4.00 UJ	4.00 UJ	6.16 UJ	6.16 U	4.00 UJ	4.00 UJ	6.16 U	4.00 UJ	2.46 U	6.16 U	5.22 J	6.16 UJ	6.16 U

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	μg/kg																	
32	32404659	3929	E. Hearne Ave	2/1/2019	MRS03-APN32404659-SS001	0	μg/kg	4.89 J	4.19 UJ	17.0 UJ	32.0 J	47.5 J	64.4 J	40.7 J	26.0 J	48.4 J	26.2 UJ	50.8 J	10.5 UJ	40.2 J	7.86 UJ	20.3 J	51.3 J
					MRS03-APN32404659-SS002	0	μg/kg	10.6 J	2.56 J	7.88 J	64.4	98.4	125	79.5	48.9	91.6	18.7 J	108	10.4 U	88.8	11.9 J	47.4	106
					MRS03-APN32404659-SS003	0	μg/kg	5.95 J	2.08 J	6.62 J	51.8 J	77.5 J	95.4 J	58.7 J	36.6 J	72.2 J	11.7 J	85.3 J	10.4 UJ	67.1 J	6.83 J	37.9 J	86.1 J
					MRS03-APN32404659-SS1001	1	μg/kg	5.93 J	0.839 J	1.61 J	15.6	23.9	29.1	17.1	12.8	22.6	4.75 J	25.6	2.67 U	21.1	8.73 J	11.0	26.5
					MRS03-APN32404659-SS1002	1	μg/kg	7.58 J	0.637 J	4.31 UJ	9.82 J	12.9 J	17.3 J	9.59 J	7.70 J	14.7 J	2.80 J	16.6 J	1.37 J	10.9 J	10.9 J	7.46 J	17.0 J
					MRS03-APN32404659-SS1003	1	μg/kg	8.49 J	1.48 J	2.74 J	24.7	36.1	41.6	22.9	16.8	35.5	6.07 J	35.7	1.54 J	27.3	12.2	16.8	39.5
					MRS03-APN32404659-SS2001	2	μg/kg	6.25 J	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	9.45 J	6.54 U	6.54 U
					MRS03-APN32404659-SS2002	2	μg/kg	12.2	0.346 J	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	1.68 J	6.54 U	17.0	6.54 U	6.54 U
					MRS03-APN32404659-SS2003	2	μg/kg	11.1	0.323 J	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	1.43 J	6.48 U	15.7	6.48 U	6.48 U
33	32404664	3955	E. Hearne Ave	10/16/2019	MRS03-APN32404664-SS001	0	μg/kg	0.821 J	0.748 J	1.86 J	17.4	24	36.1	19.3	13.7	23.7	5.37 J	27.0	1.18 J	20.1	1.60 J	10.0	27.5
					MRS03-APN32404664-SS002	0	μg/kg	0.692 J	0.849 J	2.46 J	18.3	23.3	32.9	16.9	12.3	23.9	4.51 J	30.1	2.61 U	17.8	1.33 J	12.5	30.7
					MRS03-APN32404664-SS003	0	μg/kg	1.95 U	0.664 J	1.93 J	17.1	24.8	33.5	17.8	12.3	22.8	4.97 J	27.1	2.60 U	19.2	1.08 J	10.1	27.7
34	32404665	3959	E. Hearne Ave	1/30/2019	MRS03-APN32404665-SS001	0	μg/kg	0.789 J	0.598 J	2.33 J	16.9	21.5 J	29.5	16.2	11.7	22.8	4.47 J	29.7	2.36 U	19.0	1.19 J	14.9	29.3
					MRS03-APN32404665-SS002	0	μg/kg	6.82 J	1.24 J	9.21 J	46.1	54.0 J	76.7	43.0	31.2	52.7	11.1	94.3	2.52 U	50.2	8.60 J	47.5	80.1
					MRS03-APN32404665-SS003	0	μg/kg	1.49 J	0.541 J	4.07 U	10.3	17.0 J	21.9	13.2	8.82 J	15.2	3.26 J	18.2	2.51 U	15.4	1.78 J	7.93 J	17.5
					MRS03-APN32404665-SS1001	1	μg/kg	0.789 J	1.04 UJ	4.23 UJ	4.07 J	5.23 J	7.70 J	5.10 J	4.01 J	5.50 J	6.50 UJ	5.30 J	2.60 UJ	5.45 J	1.04 J	2.49 J	5.10 J
					MRS03-APN32404665-SS1002	1	μg/kg	2.00 UJ	1.06 UJ	4.32 UJ	4.65 J	6.17 J	8.38 J	4.80 J	3.32 J	6.26 J	6.65 UJ	7.50 J	2.66 UJ	5.56 J	2.00 UJ	3.21 J	7.34 J
					MRS03-APN32404665-SS1003	1	μg/kg	0.858 J	1.02 U	4.14 U	5.29 J	7.23 J	10.4	5.89 J	4.11 J	7.51 J	6.37 U	8.08 J	2.55 U	6.59 J	1.15 J	3.36 J	8.13 J
					MRS03-APN32404665-SS2001	2	μg/kg	4.07 J	0.995 U	4.04 U	4.04 U	1.80 J	6.22 U	6.22 U	4.04 U	4.04 U	6.22 U	2.12 J	2.49 U	6.22 U	7.68 J	6.22 U	2.14 J
					MRS03-APN32404665-SS2002	2	μg/kg	1.92 UJ	1.03 Uj	4.16 UJ	3.67 J	4.47 J	5.83 J	4.57 J	4.62 J	4.87 J	3.44 J	2.91 J	2.56 UJ	5.38 J	1.92 UJ	6.41 UJ	2.94 J
					MRS03-APN32404665-SS2003	2	μg/kg	0.907 J	1.06 U	4.30 U	4.30 U	4.30 UJ	6.61 U	6.61 U	4.30 U	4.30 U	6.61 U	4.30 U	2.64 U	6.61 U	1.98 U	6.61 U	6.61 U
35	32404666	3971	E. Hearne Ave	2/28/2019	MRS03-APN32404666-SS001	0	μg/kg	2.22 J	1.23 J	2.95 J	18.9	25.7	38.1	24.6	17.1	32.8	5.71 J	36.9	1.44 J	24.1	5.05 J	17.4	37.7
					MRS03-APN32404666-SS002	0	μg/kg	3.16 J	2.07 J	20.6	105	121	172	103	71.3	133	24.4	218	1.87 J	103	8.75 J	110	190
					MRS03-APN32404666-SS003	0	μg/kg	2.40 J	1.30 J	5.78 J	39.0	51.7	69.1	42.1	32.1	56.7	9.73	73.0	1.38 J	42.4	6.26 J	32.6	73.9
					MRS03-APN32404666-SS1001	1	μg/kg	1.35 J	0.614 J	4.26 U	11.0	12.8	6.55 U	9.95	18.1	15.8	6.55 U	19.0	2.62 U	10.4	2.43 J	8.55 J	18.1
					MRS03-APN32404666-SS1002	1	μg/kg	1.03 J	0.544 J	4.24 U	12.9	16.3	25.3	16.4	11.3	18.8	4.15 J	19.6	2.61 U	17.3	2.43 J	8.51 J	18.7
					MRS03-APN32404666-SS1003	1	μg/kg	0.841 J	0.299 J	3.95 U	4.13 J	4.98 J	7.86 J	4.49 J	2.84 J	6.58 J	6.07 U	7.49 J	2.43 U	4.76 J	2.11 J	3.54 J	6.80 J
					MRS03-APN32404666-SS2001	2	μg/kg	1.88 U	1.00 U	4.08 U	4.08 U	4.08 U	6.27 U	6.27 U	4.08 U	4.08 U	6.27 U	2.14 J	2.51 U	6.27 U	1.34 J	2.23 J	6.27 U
					MRS03-APN32404666-SS2002	2	μg/kg	1.86 U	0.992 U	4.03 U	4.03 U	4.03 U	6.20 U	6.20 U	4.03 U	4.03 U	6.20 U	4.03 U	2.48 U	6.20 U	0.965 J	6.20 U	6.20 U
					MRS03-APN32404666-SS2003	2	μg/kg	1.01 J	0.999 J	1.89 J	13.9	15.5	18.0	10.2	7.98 J	21.9	2.96 J	20.9	2.41 U	11.5	2.40 J	11.1	24.6
36	32404688	3860	E. Ryan Ave	3/7/2019	MRS03-APN32404688-SS001	0	μg/kg	1.45 J	2.38 J	9.45 J	94.8 J	117 J	156 J	79.5 J	59.8 J	132 J	20.6 J	166 J	2.61 UJ	86.8 J	3.02 J	61.7 J	163 J
					MRS03-APN32404688-SS002	0	μg/kg	1.87 J	2.87 J	10.6	100	135	177	98.1	66.9	150	25.5	176	0.978 J	107	3.68 J	70.7	177
					MRS03-APN32404688-SS003	0	μg/kg	2.00 J	3.76 J	13.8	139	172	221	127	85.2	185	33.4	236	1.31 J	136	3.93 J	96.2	224
				3/8/2019	MRS03-APN32404688-SS1001	1	μg/kg	1.04 J	0.682 J	1.89 J	20.4 J	26.7 J	33.9 J	20.0 J	12.9 J	28.4 J	5.28 J	34.1 J	2.60 U	21.6 J	2.17 J	14.0 J	34.1 J
					MRS03-APN32404688-SS1002	1	μg/kg	0.935 J	0.458 J	1.64 J	14.7 J	19.8 J	26.3 J	15.9 J	10.5 J	20.0 J	3.98 J	25.2 J	2.54 U	16.4 J	1.84 J	12.1 J	23.3 J
					MRS03-APN32404688-SS1003	1	μg/kg	2.00 J	6.42 J	58.8 J	279 J	278 J	388 J	185 J	137 J	288 J	47.4 J	633 J	5.15 J	204 J	5.16 J	270 J	533 J
					MRS03-APN32404688-SS2001	2	μg/kg	0.948 J	1.04 U	4.22 U	14.9 U	9.74 U	22.1 U	2.15 J	4.22 U	19.9 U	6.49 U	23.0 U	2.60 U	2.38 J	1.97 J	6.49 U	17.9 U
					MRS03-APN32404688-SS2002	2	μg/kg	0.837 J	1.02 U	4.16 U	4.16 U	4.16 U	6.39 U	6.39 U	4.16 U	4.16 U	6.39 U	4.16 U	2.56 U	6.39 U	1.47 J	6.39 U	6.39 U
					MRS03-APN32404688-SS2003	2	μg/kg	1.03 J	1.03 U	4.19 U	4.19 U	4.19 U	6.44 U	6.44 U	4.19 U	4.19 U	6.44 U	4.19 U	2.58 U	6.44 U	2.04 J	6.44 U	6.44 U
37	32404727	3831	E. Hearne Avenue	10/29/2019	MRS03-APN32404727-SS001	0	μg/kg	17.9 U	9.53 U	38.7 U	29.7 J	38.7 J	60.5 J	40.0 J	24.8 J	47.1 J	59.5 U	52.8 J	23.8 U	39.2 J	17.9 U	21.1 J	52.1 J
					MRS03-APN32404727-SS002	0	μg/kg	6.07 J	10.1 U	41.0 U	30.3 J	42.5 J	60.4 J	43.3 J	23.9 J	46.5 J	63.1 U	48.1 J	25.2 U	41.8 J	18.9 U	63.1 U	49.2 J
					MRS03-APN32404727-SS003	0	μg/kg	17.7 U	9.46 U	38.4 U	22.1 J	27.4 J	44.1 J	28.1 J	18.0 J	35.7 J	59.1 U	39.2 J	23.7 U	26.5 J	17.7 U	59.1 U	42.5 J
38	32404730	3845	E. Hearne Ave	3/27/2019	MRS03-APN32404730-SS001	0	μg/kg	1.10 J	0.718 J	2.01 J	15.0	20.3	27.0	14.8	11.0 J	22.7	3.98 J	26.4 J	2.46 U	15.9	1.76 J	11.2	25.5
					MRS03-APN32404730-SS002	0	μg/kg	1.16 J	0.869 J	2.27 J	17.3	23.1	31.2	16.3	11.4 J	27.0	4.56 J	31.3 J	1.04 J	17.5	1.92 J	13.1	31.5
					MRS03-APN32404730-SS003	0	μg/kg	1.70 J	0.915 J	2.51 J	19.2	27.1	37.7	21.9	12.2 J	29.7	5.43 J	33.9 J	1.03 J	22.2	3.06 J	14.1	33.0

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	μg/kg															
39	32405168	4010	E. Lum Ave	3/5/2019	MRS03-APN32405168-SS001	0	μg/kg	1.79 J	1.05 U	4.28 U	6.51 J	8.83 J	15.9	10.2	7.84 J	13.6	6.59 U	12.9	2.64 U	8.31 J	2.97 J	5.94 J	12.0
					MRS03-APN32405168-SS002	0	μg/kg	4.54 J	0.330 J	4.30 U	7.25 J	9.95	18.5	12.0	10.2	4.30 U	6.61 U	17.1	2.65 U	9.76 J	5.83 J	7.62 J	15.6
					MRS03-APN32405168-SS003	0	μg/kg	3.25 J	1.04 UJ	1.67 J	9.65 J	13.0 J	20.1 J	10.9 J	7.48 J	16.9 J	2.55 J	20.4 J	1.15 J	9.66 J	3.29 J	8.77 J	18.5 J
40	32405169	4004	E. Lum Ave	4/11/2019	MRS03-APN32405169-SS001R	0	μg/kg	0.770 J	1.01 U	4.09 U	11.3	15.7	27.0	13.0	9.57	22.6	3.29 J	22.6	2.52 U	14.0	1.52 J	8.46 J	19.7
					MRS03-APN32405169-SS002R	0	μg/kg	0.716 J	1.04 U	1.56 J	9.53 J	13.3	22.7	10.5	9.09 J	20.3	2.85 J	19.5	1.50 J	11.4	1.28 J	7.34 J	18.9
					MRS03-APN32405169-SS003R	0	μg/kg	2.27 J	0.970 U	2.59 J	6.90 J	9.39	16.6	7.41 J	5.94 J	16.7	6.06 U	17.5	4.52 J	7.93 J	1.27 J	26.7	23.5
				4/12/2019	MRS03-APN32405169-SS1001R	1	μg/kg	1.80 U	0.962 U	3.91 U	3.91 U	2.02 J	3.11 J	6.01 U	3.91 U	2.47 J	6.01 U	2.58 J	2.40 U	6.01 U	1.80 U	6.01 U	2.81 J
					MRS03-APN32405169-SS1002R	1	μg/kg	1.93 U	1.03 U	4.17 U	2.73 J	3.18 J	5.19 J	2.36 J	1.97 J	4.48 J	6.42 U	5.35 J	2.57 U	2.63 J	1.93 U	6.42 U	4.82 J
					MRS03-APN32405169-SS1003R	1	μg/kg	1.84 U	0.980 U	3.98 U	1.71 J	2.34 J	3.71 J	6.12 U	3.98 U	3.02 J	6.12 U	3.36 J	2.45 U	2.03 J	1.84 U	6.12 U	3.07 J
					MRS03-APN32405169-SS2001R	2	μg/kg	1.89 U	1.01 U	4.10 U	4.10 U	4.10 U	6.31 U	6.31 U	4.10 U	4.10 U	6.31 U	4.10 U	2.52 U	6.31 U	1.89 U	6.31 U	6.31 U
					MRS03-APN32405169-SS2002R	2	μg/kg	1.86 U	0.993 U	4.03 U	4.03 U	4.03 U	6.20 U	6.20 U	4.03 U	4.03 U	6.20 U	4.03 U	2.48 U	6.20 U	1.86 U	6.20 U	6.20 U
					MRS03-APN32405169-SS2003R	2	μg/kg	1.90 U	1.01 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	1.90 U	6.33 U	6.33 U
41	32405172*	3990	E. Lum Ave	1/22/2019	MRS03-APN32405172-SS001	0	μg/kg	5.01 J	7.01 J	29.1 J	178	201	258	123	107	219	35.3 J	317	10.4 U	150	39.1 U	143	309
					MRS03-APN32405172-SS002	0	μg/kg	7.92 UJ	1.70 J	6.71 J	57.9 J	70.7 J	95.2 J	44.4 J	39.7 J	77.8 J	39.6 UJ	94.2 J	10.6 UJ	49.6 J	39.6 UJ	32.7 J	99.7 J
					MRS03-APN32405172-SS003	0	μg/kg	4.19 J	4.05 J	14.0 J	101 J	121 J	164 J	77.8 J	64.9 J	144 J	22.6 J	169 J	10.7 UJ	94.2 J	40.0 UJ	62.5 J	177 J
					MRS03-APN32405172-SS1001	1	μg/kg	1.81 J	1.53 J	6.13 J	48.0 J	66.1 J	78.5 J	41.2 J	30.7 j	64.3 J	9.47 J	77.3 J	2.59 U	50.0 J	9.70 U	32.8 J	76.9 J
					MRS03-APN32405172-SS1002	1	μg/kg	1.92 J	0.650 J	2.79 J	24.2 J	32.9 J	42.6 J	21.7 J	17.9 J	31.0 J	6.28 J	36.3 J	2.54 U	26.8 J	9.52 U	14.7 J	36.8 J
					MRS03-APN32405172-SS1003	1	μg/kg	4.82 J	7.55 J	42.6 J	259 J	328 J	269 J	207 J	154 J	295 J	56.1 J	409 J	3.03 j	244 J	17.1 J	204 J	380 J
					MRS03-APN32405172-SS2001	2	μg/kg	2.27 J	1.06 U	4.32 U	5.74 J	8.20 J	10.5 J	9.97 U	9.97 U	7.95 J	6.64 U	8.10 J	2.66 U	9.97 U	9.97 U	3.71 J	8.82 J
					MRS03-APN32405172-SS2002	2	μg/kg	3.49 J	3.32 J	4.38 J	28.5	40.7	44.6	23.3	19.4 J	40.3	7.09 J	40.4	1.59 J	29.0	11.6 J	19.6	48.8
					MRS03-APN32405172-SS2003	2	μg/kg	1.78 J	1.06 U	4.30 U	4.30 U	9.92 U	9.92 U	6.61 U	4.30 U	9.92 U	6.61 U	9.92 U	2.65 U	6.61 U	9.92 U	6.61 U	2.70 J
42	32405174	3974	E. Lum Ave	5/9/2019	MRS03-APN32405174-SS001	0	μg/kg	1.72 J	0.978 J	2.38 J	20.0	28.5	40.2	21.3	15.7	34.6	5.33 J	44.9	2.42 U	24.3	3.37 J	14.1	43.6
					MRS03-APN32405174-SS002	0	μg/kg	2.31 J	0.955 J	2.11 J	19.8	31.2	42.7	22.8	15.3	31.5	5.83 J	34.9	2.46 U	26.7	4.02 J	13.1	33.8
					MRS03-APN32405174-SS003	0	μg/kg	1.31 J	0.826 J	1.94 J	19.1	26.2	38.0	20.0	14.0	30.6	4.88 J	35.5	2.47 U	21.6	2.19 J	12.2	34.7
					MRS03-APN32405174-SS1001	1	μg/kg	1.96 U	1.05 U	4.25 U	8.90 J	10.6	13.9	8.31 J	7.73 J	12.8	4.25 J	12.3	2.62 U	9.01 J	1.96 U	3.87 J	12.6
				5/10/2019	MRS03-APN32405174-SS1002	1	μg/kg	1.86 U	0.992 U	4.03 U	5.72 J	8.21 J	10.8	6.19 J	4.00 J	8.51 J	6.20 U	10.1	2.48 U	6.19 J	1.86 U	4.09 J	9.62
					MRS03-APN32405174-SS1003	1	μg/kg	1.88 U	1.00 U	4.07 U	5.54 J	8.11 J	11.7	6.70 J	4.98 J	9.04 J	6.26 U	10.8	2.50 U	7.31 J	1.88 U	3.95 J	10.0
				5/9/2019	MRS03-APN32405174-SS2001	2	μg/kg	1.87 U	0.998 U	4.05 U	4.05 U	4.05 U	6.23 U	6.23 U	4.05 U	4.05 U	6.23 U	4.05 U	2.49 U	6.23 U	1.87 U	6.23 U	6.23 U
				5/10/2019	MRS03-APN32405174-SS2002	2	μg/kg	2.05 J	3.71 J	9.75	202	272	320	160	134	213	32.6	218	2.58 U	208	8.15 J	45.0	220
					MRS03-APN32405174-SS2003	2	μg/kg	1.97 U	1.05 U	4.26 U	3.43 J	3.36 J	5.80 J	3.14 J	4.26 U	3.92 J	6.56 U	6.58 J	2.63 U	3.19 J	1.97 U	3.13 J	5.41 J
				10/24/2019	MRS03-APN32405174-SS3001	3	μg/kg	5.71 J	0.997 U	4.05 U	4.05 U	2.26 J	2.95 J	6.23 U	4.05 U	9.35 U	6.23 U	4.05 U	2.49 U	6.23 U	7.47 J	6.23 U	6.23 U
					MRS03-APN32405174-SS3002	3	μg/kg	4.26 J	1.02 U	4.14 U	4.14 U	4.14 U	6.37 U	6.37 U	4.14 U	4.14 U	6.37 U	4.14 U	2.55 U	6.37 U	6.19 J	6.37 U	6.37 U
					MRS03-APN32405174-SS3003	3	μg/kg	5.66 J	1.02 U	4.16 U	4.16 U	4.16 U	6.39 U	6.39 U	4.16 U	4.16 U	6.39 U	4.16 U	2.56 U	6.39 U	7.56 J	6.39 U	6.39 U
					MRS03-APN32405174-SS4001	4	μg/kg	4.18 J	1.03 U	4.18 U	9.65 U	1.74 J	6.43 U	6.43 U	4.18 U	9.65 U	6.43 U	4.18 U	2.57 U	6.43 U	6.69 J	6.43 U	6.43 U
					MRS03-APN32405174-SS4002	4	μg/kg	3.89 J	1.65 J	4.06 U	4.06 U	4.06 U	6.25 U	6.25 U	4.06 U	4.06 U	6.25 U	4.06 U	1.72 J	6.25 U	4.95 J	6.25 U	6.25 U
					MRS03-APN32405174-SS4003	4	μg/kg	5.74 J	2.08 J	9.46 J	70.4	105	170	73.9	62.0	127	20.5	66.6	2.77 J	85.6	9.65 J	21.0	70.9
43	32405176	3966	E. Lum Ave	1/18/2019	MRS03-APN32405176-SS001	0	μg/kg	1.62 J	0.839 J	4.11 J	26.8	35.9	46.3	25.5	20.2	34.5	6.86 J	48.2	0.924 J	29.5	2.13 J	21.0	45.3
					MRS03-APN32405176-SS002	0	μg/kg	1.42 J	0.587 J	2.56 J	18.8 J	26.1 J	33.5 J	17.7 J	15.0 J	24.6 J	4.78 J	32.2 J	2.57 UJ	21.0 J	1.59 J	13.2 J	31.7 J
					MRS03-APN32405176-SS003	0	μg/kg	4.39 J	9.22 J	38.9	231	294	265 J	178	149	267	50.3	334 J	7.84 J	213	5.35 J	175	334 J
					MRS03-APN32405176-SS1001	1	μg/kg	1.26 J	0.391 J	4.21 U	7.77 J	10.6	13.7	8.05 J	5.46 J	10.3	6.48 U	12.0	2.59 U	8.61 J	2.32 J	5.02 J	12.5
					MRS03-APN32405176-SS1002	1	μg/kg	1.74 J	1.57 J	2.73 J	21.4	30.0	34.4	18.5	14.2	30.0	5.54 J	31.1	2.63 U	20.7	5.18 J	14.9	36.3
					MRS03-APN32405176-SS1003	1	μg/kg	0.770 J	1.05 U	4.27 U	5.11 J	6.70 J	9.22 J	5.55 J	3.99 J	7.01 J	6.57 U	9.28 J	2.63 U	5.56 J	1.23 J	4.05 J	9.04 J
					MRS03-APN32405176-SS2001	2	μg/kg	0.712 J	1.06 U	4.31 U	4.31 U	4.31 U	6.63 U	6.63 U	4.31 U	4.31 U	6.63 U	4.31 U	2.65 U	6.63 U	1.23 J	6.63 U	6.63 U
					MRS03-APN32405176-SS2002	2	μg/kg	0.754 J	1.06 U	4.30 U	4.30 U	4.30 U	6.61 U	6.61 U	4.30 U	4.30 U	6.61 U	4.30 U	2.64 U	6.61 U	1.21 J	6.61 U	6.61 U
					MRS03-APN32405176-SS2003	2	μg/kg	0.879 J	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.60 U	6.51 U	1.62 J	6.51 U	6.51 U

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
44	32405177	3960	E. Lum Ave	1/16/2019	MRS03-APN32405177-SS001	0	µg/kg	9.85 U	0.583 J	2.48 J	17.5	22.9	31.1	16.4	15.0	26.3	4.11 J	40.8	2.63 U	19.0	23.2 U	19.0	37.7
					MRS03-APN32405177-SS002	0	µg/kg	9.73 U	0.837 J	3.21 J	25.2	33.9	42.4	23.1	18.4	33.1	6.59 J	45.0	2.60 U	28.2	23.0 U	21.9	43.3
					MRS03-APN32405177-SS003	0	µg/kg	9.55 U	0.725 J	1.85 J	16.0	22.4	27.7	14.5	11.9	22.2	3.97 J	26.1	2.55 U	16.2	22.5 U	10.7	27.1
					MRS03-APN32405177-SS1001	1	µg/kg	9.66 U	0.380 J	2.19 J	13.2	16.3	20.0	10.3	7.89 J	14.9 J	2.62 J	23.4 J	2.58 U	12.8	22.8 U	11.4	21.7
					MRS03-APN32405177-SS1002	1	µg/kg	1.96 U	1.05 U	4.25 U	6.00 J	8.35 J	10.2	6.05 J	4.83 J	7.89 J	6.53 U	9.80 J	2.61 U	6.67 J	23.1 U	4.62 J	9.45 J
					MRS03-APN32405177-SS1003	1	µg/kg	9.71 U	1.04 U	4.21 U	10.4	13.0	15.0	9.84	8.20 J	12.2 J	4.94 J	12.9 J	2.59 U	11.0	22.9 U	5.29 J	13.0
					MRS03-APN32405177-SS2001	2	µg/kg	9.76 U	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.60 U	6.51 U	23.0 U	6.51 U	6.51 U
					MRS03-APN32405177-SS2002	2	µg/kg	9.86 UJ	1.05 UJ	4.27 UJ	4.27 UJ	2.07 J	2.84 J	6.57 UJ	4.27 UJ	2.15 J	6.57 UJ	3.22 J	2.63 UJ	6.57 UJ	23.3 UJ	6.57 UJ	2.86 J
					MRS03-APN32405177-SS2003	2	µg/kg	1.86 UJ	0.993 UJ	4.03 UJ	4.03 UJ	1.56 J	6.21 UJ	6.21 UJ	4.03 UJ	4.03 UJ	6.21 UJ	1.93 J	2.48 UJ	6.21 UJ	22.0 UJ	6.21 UJ	6.21 UJ
45	32405178	3956	E. Lum Ave	1/16/2019	MRS03-APN32405178-SS001	0	µg/kg	9.58 U	3.51 J	24.2	215	287	292	185	160	272	46.5	422	3.72 J	221	22.6 U	165	408
					MRS03-APN32405178-SS002	0	µg/kg	9.45 U	7.02 J	54.1	376	394	552	289	264	502	77.5	881	8.07 J	314	22.3 U	439	827
					MRS03-APN32405178-SS003	0	µg/kg	9.52 U	1.73 J	11.9	131	176	211	110	101	168	28.5	264	2.00 J	135	22.5 U	104	250
					MRS03-APN32405178-SS1001	1	µg/kg	1.99 U	0.418 J	2.21 J	22.6	29.1	36.4	19.0	16.4	27.9	5.66 J	40.5	2.65 U	24.4	23.4 U	16.1	39.1
					MRS03-APN32405178-SS1002	1	µg/kg	9.56 U	0.350 J	4.14 U	9.78	14.1	18.4	9.85	6.95 J	13.4	2.65 J	19.3	2.55 U	11.5	22.6 U	9.10 J	18.5
					MRS03-APN32405178-SS1003	1	µg/kg	1.92 U	1.03 U	4.17 U	6.96 J	9.50 J	12.9	7.65 J	5.54 J	10.7	6.41 U	14.1	2.56 U	8.09 J	22.7 U	5.53 J	13.7
					MRS03-APN32405178-SS2001	2	µg/kg	9.75 U	1.04 U	4.22 U	3.73 J	4.20 J	6.02 J	3.31 J	2.43 J	5.11 J	6.50 U	7.28 J	2.60 U	3.61 J	23.0 U	2.61 J	7.01 J
					MRS03-APN32405178-SS2002	2	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	2.19 J	3.07 J	6.57 U	4.27 U	2.47 J	6.57 U	3.27 J	2.63 U	6.57 U	23.3 U	6.57 U	3.20 J
					MRS03-APN32405178-SS2003	2	µg/kg	9.98 U	1.06 U	4.32 U	4.32 U	1.69 J	2.44 J	6.65 U	4.32 U	4.32 U	6.65 U	2.41 J	2.66 U	6.65 U	23.5 U	6.65 U	2.45 J
46	32405206A	3929	E. Ryan Ave	4/4/2019	MRS03-APN32405206A-SS001	0	µg/kg	9.67 U	2.31 J	9.07 J	78.3 J	102 J	136 J	86.4 J	52.2 J	106 J	19.9 J	121 J	1.55 J	82.1 J	9.67 U	45.8 J	121 J
					MRS03-APN32405206A-SS002	0	µg/kg	9.52 U	2.98 J	8.68 J	79.2 J	115 J	145 J	89.5 J	58.6 J	109 J	21.8 J	118 J	1.53 J	91.8 J	9.52 U	46.3 J	120 J
					MRS03-APN32405206A-SS003	0	µg/kg	9.97 U	2.82 J	10.5 J	93.4 J	125 J	168 J	108 J	62.7 J	125 J	25.1 J	149 J	1.39 J	107 J	9.97 U	57.1 J	147 J
					MRS03-APN32405206A-SS1001	1	µg/kg	9.73 U	1.08 J	3.76 J	34.9	47.6	60.4	34.2	22.8	47.2	8.45 J	52.5	2.60 U	35.6	9.73 U	21.7	51.7
					MRS03-APN32405206A-SS1002	1	µg/kg	8.94 U	3.18 J	6.84 J	168	332	411	267	152	223	70.1	141	1.09 J	292	8.94 U	34.6	154
					MRS03-APN32405206A-SS1003	1	µg/kg	9.93 U	18.4	28.4	252	318 J	339 J	238	169	355 J	71.4	338 J	4.82 J	278	35.2	137	404 J
					MRS03-APN32405206A-SS2001	2	µg/kg	1.78 UJ	0.950 UJ	3.86 UJ	1.64 J	2.55 J	3.25 J	1.99 J	3.86 UJ	2.32 J	5.94 UJ	2.48 J	2.37 UJ	2.11 J	1.78 UJ	5.94 UJ	2.49 J
					MRS03-APN32405206A-SS2002	2	µg/kg	9.29 U	0.992 U	4.03 U	2.71 J	3.91 J	5.33 J	3.23 J	1.87 J	3.74 J	6.20 U	4.32 J	2.48 U	3.43 J	1.86 U	2.04 J	4.42 J
					MRS03-APN32405206A-SS2003	2	µg/kg	9.27 U	0.989 U	4.02 U	4.02 U	1.56 J	6.18 U	6.18 U	4.02 U	4.02 U	6.18 U	2.03 J	2.47 U	6.18 U	1.85 U	6.18 U	6.18 U
47	32405212*	3959	E. Ryan Ave	3/21/2019	MRS03-APN32405212-SS001	0	µg/kg	0.869 J	0.591 J	2.27 J	18.8	28.2	37.5	22	14.4	29	5.77 J	31.2	2.63 U	22.8	1.42 J	12.3	30.9
					MRS03-APN32405212-SS002	0	µg/kg	1.36 J	0.746 J	2.47 J	22.1	34.1	46	26.4	17.9	34.3	6.82 J	37.2	2.65 U	27.6	2.09 J	13.7	37.2
					MRS03-APN32405212-SS003	0	µg/kg	0.791 J	0.982 U	3.99 U	5.13 J	7.23 J	10.2	6.01 J	4.26 J	8.29 J	6.14 U	10.4	2.45 U	6.00 J	8.14 J	4.14 J	9.79
				3/22/2019	MRS03-APN32405212-SS1001	1	µg/kg	0.679 J	1.00 U	4.07 U	4.07 U	1.73 J	6.26 U	6.26 U	4.07 U	4.07 U	6.26 U	4.07 U	2.50 U	6.26 U	1.88 U	6.26 U	6.26 U
					MRS03-APN32405212-SS1002	1	µg/kg	0.630 J	1.06 U	4.28 U	5.53 J	8.63 J	11.2	6.60 J	4.42 J	8.34 J	6.59 U	9.45 J	2.64 U	7.30 J	1.12 J	3.90 J	9.33 J
					MRS03-APN32405212-SS1003	1	µg/kg	0.743 J	1.06 U	4.29 U	6.51 J	7.59 J	11.9	5.49 J	4.30 J	11.3	6.60 U	19.6	2.64 U	5.82 J	1.09 J	13.3	16.4
					MRS03-APN32405212-SS2001	2	µg/kg	0.774 J	1.05 U	4.25 U	4.25 U	4.25 U	6.54 U	6.54 U	4.25 U	4.25 U	6.54 U	4.25 U	2.62 U	6.54 U	1.11 J	6.54 U	6.54 U
					MRS03-APN32405212-SS2002	2	µg/kg	0.861 J	1.04 U	4.24 U	4.24 U	4.24 U	6.52 U	6.52 U	4.24 U	4.24 U	6.52 U	4.24 U	2.61 U	6.52 U	1.93 J	6.52 U	6.52 U
					MRS03-APN32405212-SS2003	2	µg/kg	1.92 U	1.03 U	4.17 U	4.17 U	4.17 U	6.41 U	6.41 U	4.17 U	4.17 U	6.41 U	4.17 U	2.57 U	6.41 U	1.92 U	6.41 U	6.41 U
48	32405218A	3991	E. Ryan Ave	5/30/2019	MRS03-APN32405218A-SS001	0	µg/kg	1.29 J	0.795 J	2.14 J	10.6	11.5	22.6	8.72 J	6.66 J	21.2	6.12 U	22.2	1.08 J	8.88 J	2.24 J	9.52	20.4
					MRS03-APN32405218A-SS002	0	µg/kg	1.07 J	1.01 U	3.47 J	12.6	14.3	24.9	10.2	8.04 J	22.6	6.30 U	27.7	1.64 J	11.0	1.95 J	13.9	25.1
					MRS03-APN32405218A-SS003	0	µg/kg	0.966 J	0.731 J	3.28 J	15.5	17.4	29.8	11.8	8.69 J	24.4	6.27 U	29.6	1.12 J	13.0	1.72 J	13.2	27.2

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
49	32405269	3986	E. Thompson Ave	10/18/2019	MRS03-APN32405269-SS001	0	µg/kg	0.960 J	0.997 U	4.05 U	1.76 J	2.69 J	4.12 J	2.50 J	4.05 U	3.47 J	6.23 U	3.69 J	2.49 U	2.18 J	2.04 J	6.23 U	3.61 J
					MRS03-APN32405269-SS002	0	µg/kg	1.36 J	0.293 J	3.92 U	2.04 J	3.24 J	5.23 J	2.96 J	2.00 J	3.99 J	6.03 U	5.48 J	2.41 U	2.93 J	2.86 J	3.08 J	4.75 J
					MRS03-APN32405269-SS003	0	µg/kg	0.857 J	1.00 U	4.07 U	3.25 J	4.89 J	7.80 J	4.53 J	2.56 J	5.09 J	6.26 U	6.60 J	2.51 U	4.63 J	1.83 J	2.50 J	5.87 J
					MRS03-APN32405269-S1001	1	µg/kg	1.21 J	1.07 U	4.33 U	4.33 U	2.32 J	3.96 J	2.28 J	4.33 U	2.88 J	6.66 U	2.96 J	2.66 U	2.21 J	3.51 J	6.66 U	2.93 J
					MRS03-APN32405269-SS1002	1	µg/kg	0.801 J	0.994 U	4.04 U	4.04 U	2.04 J	2.96 J	6.21 U	4.04 U	2.61 J	6.21 U	2.68 J	2.48 U	6.21 U	1.36 J	6.21 U	2.56 J
					MRS03-APN32405269-SS1003	1	µg/kg	0.662 J	0.972 U	3.95 U	3.95 U	3.95 U	6.07 U	6.07 U	3.95 U	3.95 U	6.07 U	3.95 U	2.43 U	6.07 U	1.20 J	6.07 U	6.07 U
					MRS03-APN32405269-SS2001	2	µg/kg	1.85 U	0.987 U	4.01 U	4.01 U	4.01 U	6.17 U	6.17 U	4.01 U	4.01 U	6.17 U	4.01 U	2.47 U	6.17 U	1.12 J	6.17 U	6.17 U
					MRS03-APN32405269-SS2002	2	µg/kg	0.766 J	0.448 J	3.92 U	3.92 U	3.92 U	6.03 U	6.03 U	3.92 U	3.92 U	6.03 U	3.92 U	2.41 U	6.03 U	1.31 J	6.03 U	6.03 U
					MRS03-APN32405269-SS2003	2	µg/kg	29.8	3.83 J	2.92 J	4.08 U	4.08 U	6.28 U	6.28 U	4.08 U	4.08 U	6.28 U	4.08 U	5.08 J	6.28 U	2.99 J	9.57	2.78 J
50	32405289	3886	E. Thompson Ave	3/19/2019	MRS03-APN32405289-SS001	0	µg/kg	3.46 J	1.02 J	4.28 J	29.6	39.6	62.8	37.5	22.4	49.7	8.15 J	55.9	2.59 U	34.6	4.12 J	21.6	52.7
					MRS03-APN32405289-SS002	0	µg/kg	5.43 J	1.17 J	4.32 J	26.1	37.1	56.7	40.3	21.4	44.3	7.81 J	51.4	2.44 U	33.1	6.54 J	19.6	51.5
					MRS03-APN32405289-SS003	0	µg/kg	4.29 J	1.04 J	4.69 J	20.0	27.8	45.5	25.9	16.1	34.6	6.00 J	51.9	2.45 U	24.8	4.38 J	20.1	50.2
					MRS03-APN32405289-SS1001	1	µg/kg	1.12 J	0.503 J	4.04 UJ	8.78 J	12.5 J	16.4 J	10.5 J	6.19 J	13.3 J	2.50 J	14.8 J	2.48 UJ	9.82 J	1.37 J	6.24 J	15.1 J
					MRS03-APN32405289-SS1002	1	µg/kg	3.37 J	0.565 J	2.07 J	12.3	17.1	28.6	24.4	10.3	21.0	3.69 J	24.0	2.59 U	15.1	3.23 J	9.88	23.0
					MRS03-APN32405289-SS1003	1	µg/kg	1.98 J	1.50 J	2.81 J	25.8	35.6	42.3	21.9	16.9	37.4	6.82 J	37.5	2.44 U	25.4	2.97 J	14.2	42.2
					MRS03-APN32405289-SS2001	2	µg/kg	0.980 J	1.06 U	4.28 U	4.28 U	4.28 U	6.59 U	6.59 U	4.28 U	4.28 U	6.59 U	4.28 U	2.64 U	6.59 U	1.22 J	6.59 U	6.59 U
					MRS03-APN32405289-SS2002	2	µg/kg	0.653 J	1.02 U	4.14 U	4.14 U	2.28 J	3.05 J	6.37 U	4.14 U	2.33 J	6.37 U	2.89 J	2.55 U	6.37 U	1.91 U	2.11 J	2.60 J
					MRS03-APN32405289-SS2003	2	µg/kg	0.616 J	1.04 U	4.23 U	4.23 U	4.23 U	6.51 U	6.51 U	4.23 U	4.23 U	6.51 U	4.23 U	2.60 U	6.51 U	0.963 J	6.51 U	6.51 U
51	32405290	3880	E. Thompson Ave	3/20/2019	MRS03-APN32405290-SS001	0	µg/kg	4.28 J	2.91 J	12.0	47.8	62.9	112	50.2	41.5	121	12.3	216	1.58 J	51.8	5.48 J	121	174
					MRS03-APN32405290-SS002	0	µg/kg	3.35 J	1.68 J	11.7	47.4	62.8	109	45.9	42.0	118	11.7	201	1.13 J	51.1	4.45 J	90.7	166
					MRS03-APN32405290-SS003	0	µg/kg	4.04 J	2.02 J	10.6	44.1	62.9	102	45.4	40.1	102	12.7	180	1.31 J	50.6	6.08 J	87.3	155
52	32436008*	3930	E. Lass Avenue	10/28/2019	MRS03-APN32436008-SS001	0	µg/kg	1.37 J	1.10 J	3.48 J	32.1 J	40.6 J	52.1 J	31.7 J	24.2 J	45.7 J	8.56 J	53.2 J	2.60 UJ	33.4 J	2.22 J	21.0 J	53.9 J
					MRS03-APN32436008-SS002	0	µg/kg	1.06 J	1.08 J	3.81 J	33.5 J	44.7 J	59.9 J	37.8 J	25.7 J	45.0 J	8.98 J	55.0 J	2.63 UJ	38.9 J	1.78 J	22.2 J	53.5 J
					MRS03-APN32436008-SS003	0	µg/kg	1.59 J	0.994 J	3.21 J	25.2 J	31.4 J	44.3 J	27.9 J	19.6 J	35.1 J	6.94 J	43.9 J	2.48 UJ	29.8 J	2.79 J	18.4 J	43.2 J
					MRS03-APN32436008-SS1001	1	µg/kg	2.12 J	2.46 J	11.3 J	65.7 J	79.1 J	106 J	66.9 J	44.9 J	84.8 J	16.0 J	127 J	1.51 J	69.7 J	5.81 J	57.2 J	117 J
					MRS03-APN32436008-SS1002	1	µg/kg	2.38 J	1.71 J	4.68 J	81.6 J	159 J	211 J	148 J	80.5 J	112 J	37.8 J	83.4 J	2.53 UJ	155 J	4.75 J	24.0 J	87.0 J
					MRS03-APN32436008-SS1003	1	µg/kg	1.30 J	0.437 J	4.05 UJ	10.4 J	14.5 J	21.1 J	14.1 J	8.42 J	15.5 J	3.32 J	18.1 J	2.50 UJ	14.5 J	2.04 J	6.75 J	18.1 J
					MRS03-APN32436008-SS2001	2	µg/kg	1.62 J	1.01 UJ	4.09 UJ	4.09 UJ	2.29 J	3.35 J	6.30 UJ	4.09 UJ	2.47 J	6.30 UJ	2.94 J	2.52 UJ	2.19 J	2.53 J	6.30 UJ	3.10 J
					MRS03-APN32436008-SS2002	2	µg/kg	1.14 J	1.06 UJ	4.31 UJ	4.31 UJ	1.88 J	2.55 J	6.64 UJ	4.31 UJ	2.19 J	6.64 UJ	2.20 J	2.65 UJ	6.64 UJ	1.91 J	6.64 UJ	2.38 J
					MRS03-APN32436008-SS2003	2	µg/kg	1.53 J	1.07 UJ	4.33 UJ	4.33 UJ	4.33 UJ	6.66 UJ	6.66 UJ	4.33 UJ	4.33 UJ	6.66 UJ	4.33 UJ	2.67 UJ	6.66 UJ	2.38 J	6.66 UJ	6.66 UJ
53	32436011	3942	E. Lass Ave	5/14/2019	MRS03-APN32436011-SS001	0	µg/kg	1.12 J	2.40 J	8.29 J	76.5 J	96.3 J	134 J	72.6 J	50.0 J	99.8 J	17.0 J	124 J	0.936 J	80.3 J	2.46 J	48.0 J	120 J
					MRS03-APN32436011-SS002	0	µg/kg	1.01 J	2.50 J	9.15 J	87.3 J	110 J	158 J	85.0 J	57.9 J	114 J	19.7 J	138 J	0.985 J	95.8 J	2.26 J	53.1 J	135 J
					MRS03-APN32436011-SS003	0	µg/kg	1.06 J	2.57 J	10.5 J	89.9 J	110 J	160 J	87.6 J	57.3 J	114 J	20.8 J	149 J	1.08 J	99.1 J	2.43 J	58.9 J	141 J
					MRS03-APN32436011-SS1001	1	µg/kg	1.77 UJ	0.947 J	3.00 J	30.3 J	41.2 J	59.2 J	33.5 J	21.9 J	41.9 J	7.93 J	50.6 J	2.35 UJ	38.1 J	0.983 J	18.3 J	50.6 J
					MRS03-APN32436011-SS1002	1	µg/kg	1.91 UJ	0.983 J	3.87 J	34.1 J	45.6 J	65.7 J	36.4 J	23.4 J	45.1 J	8.62 J	59.2 J	2.55 UJ	38.6 J	1.01 J	22.6 J	56.5 J
					MRS03-APN32436011-SS1003	1	µg/kg	1.78 UJ	0.986 J	3.83 J	32.0 J	40.6 J	59.7 J	32.0 J	20.6 J	40.8 J	7.87 J	55.7 J	2.37 UJ	34.4 J	1.05 J	22.1 J	53.2 J
					MRS03-APN32436011-SS2001	2	µg/kg	1.96 UJ	1.05 UJ	4.26 UJ	4.26 UJ	2.85 J	3.38 J	6.55 UJ	4.26 UJ	2.17 J	6.55 UJ	3.59 J	2.62 UJ	6.55 UJ	1.96 UJ	6.55 UJ	3.45 J
					MRS03-APN32436011-SS2002	2	µg/kg	1.90 UJ	1.01 UJ	4.11 UJ	4.11 UJ	1.49 J	6.33 UJ	6.33 UJ	4.11 UJ	4.11 UJ	6.33 UJ	2.16 J	2.53 UJ	6.33 UJ	1.90 UJ	6.33 UJ	2.11 J
					MRS03-APN32436011-SS2003	2	µg/kg	1.85 UJ	0.989 UJ	4.02 UJ	4.38 J	6.93 J	9.09 J	5.22 J	3.40 J	6.32 J	6.18 UJ	8.40 J	2.47 UJ	5.41 J	1.85 UJ	3.19 J	8.53 J

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	μg/kg															
54	32436012*	3946	E. Lass Ave	5/21/2019	MRS03-APN32436012-SS001	0	μg/kg	1.73 J	4.21 J	16.9 J	121 J	168 J	210 J	118 J	93.0 J	143 J	32.0 J	188 J	2.26 J	138 J	4.18 J	81.1 J	180 J
					MRS03-APN32436012-SS002	0	μg/kg	1.45 J	2.39 J	11.5 J	80.5 J	111 J	147 J	83.2 J	56.7 J	104 J	21.2 J	150 J	1.71 J	94.0 J	2.92 J	62.8 J	139 J
					MRS03-APN32436012-SS003	0	μg/kg	1.52 J	2.28 J	8.19 J	71.6 J	105 J	139 J	82.6 J	54.5 J	97.1 J	20.5 J	128 J	1.53 J	92.2 J	3.15 J	51.4 J	125 J
					MRS03-APN32436012-SS1001	1	μg/kg	1.37 J	3.18 J	14.2 J	109 J	143 J	196 J	107 J	74.1 J	138 J	28.1 J	197 J	1.30 J	117 J	3.31 J	82.2 J	184 J
					MRS03-APN32436012-SS1002	1	μg/kg	0.881 J	1.96 J	6.04 J	56.1 J	79.7 J	106 J	56.5 J	39.3 J	77.3 J	13.7 J	97.5 J	2.60 R	64.0 J	2.16 J	37.2 J	95.9 J
					MRS03-APN32436012-SS1003	1	μg/kg	1.54 J	4.24 J	20.5 J	145 J	185 J	257 J	137 J	94.8 J	188 J	34.6 J	286 J	1.41 J	155 J	3.91 J	118 J	264 J
					MRS03-APN32436012-SS2001	2	μg/kg	2.48 J	1.44 J	3.76 J	40.2 J	61.9 J	85.1 J	46.7 J	31.0 J	60.1 J	11.8 J	74.9 J	2.60 R	52.6 J	3.29 J	26.4 J	76.7 J
					MRS03-APN32436012-SS2002	2	μg/kg	2.24 J	1.02 R	4.15 R	3.91 J	5.05 J	7.80 J	4.25 J	2.48 J	5.59 J	6.39 R	7.00 J	2.55 R	4.64 J	2.76 J	3.09 J	7.26 J
					MRS03-APN32436012-SS2003	2	μg/kg	8.20 J	16.8 J	27.3 J	179 J	250 J	300 J	173 J	119 J	256 J	47.7 J	283 J	5.44 J	183 J	30.2 J	128 J	314 J
				10/15/2019	MRS03-APN32436012-SS3001	3	μg/kg	1.96 U	1.05 U	4.25 U	2.30 J	2.96 J	4.42 J	2.33 J	4.25 U	3.34 J	6.54 U	2.94 J	2.62 U	2.48 J	1.96 U	6.54 U	3.14 J
					MRS03-APN32436012-SS3002	3	μg/kg	1.96 U	1.05 U	4.25 U	2.00 J	2.23 J	3.62 J	6.54 U	4.25 U	2.66 J	6.54 U	2.48 J	2.62 U	2.19 J	1.96 U	6.54 U	2.37 J
					MRS03-APN32436012-SS3003	3	μg/kg	1.87 U	0.995 U	4.04 U	4.04 U	4.04 U	6.22 U	6.22 U	4.04 U	4.04 U	6.22 U	4.04 U	2.49 U	6.22 U	1.87 U	6.22 U	6.22 U
					MRS03-APN32436012-SS4001	4	μg/kg	1.97 U	1.05 U	4.28 U	4.28 U	4.28 U	2.77 J	6.58 U	4.28 U	4.28 U	6.58 U	2.60 J	2.63 U	6.58 U	1.97 U	6.58 U	6.58 U
					MRS03-APN32436012-SS4002	4	μg/kg	1.90 U	1.01 U	4.11 U	4.11 U	4.11 U	6.33 U	6.33 U	4.11 U	4.11 U	6.33 U	4.11 U	2.53 U	6.33 U	1.90 U	6.33 U	6.33 U
					MRS03-APN32436012-SS4003	4	μg/kg	1.88 U	1.01 U	4.08 U	4.08 U	4.08 U	6.28 U	6.28 U	4.08 U	4.08 U	6.28 U	4.08 U	2.51 U	6.28 U	1.88 U	6.28 U	6.28 U
55	32436019	3974	E. Lass Ave	4/10/2019	MRS03-APN32436019-SS001	0	μg/kg	15.5 J	52.0 J	275 J	1,440 J	1,710 J	2,100 J	1110 J	867 J	1710 J	254 J	2920 J	30.3 J	1,310 J	51.0 J	1390 J	2700 J
					MRS03-APN32436019-SS002	0	μg/kg	6.63 J	20.2 J	113 J	552 J	625 J	818 J	426 J	295 J	694 J	106 J	1150 J	9.33 J	504 J	21.0 J	559 J	1050 J
					MRS03-APN32436019-SS003	0	μg/kg	4.58 J	15.8 J	130 J	730 J	795 J	1050 J	534 J	410 J	860 J	122 J	1530 J	8.93 J	630 J	15.0 J	673 J	1340 J
					MRS03-APN32436019-SS1001	1	μg/kg	18.4	74.8	423	1,590	1,760	2,290	1,200	941	2,010	309 J	3,520	53.1	1,380	55.6	1,750	3,180
					MRS03-APN32436019-SS1002	1	μg/kg	6.05 J	16.5	95.6	481	533	725	380	276	614	91.4	965	6.99 J	446	19.0	491	861
					MRS03-APN32436019-SS1003	1	μg/kg	21.1	59.0	245	1,060	1,200	1,560	852	607	1,450	209	2,150	31.0	971	70.3	1,160	1,960
					MRS03-APN32436019-SS2001	2	μg/kg	1.05 J	2.97 J	16.1 J	85.2 J	90.2 J	122 J	58.7 J	46.3 J	109 J	15.7 J	172 J	2.04 J	66.8 J	2.62 J	81.6 J	153 J
					MRS03-APN32436019-SS2002	2	μg/kg	1.89 UJ	1.01 UJ	4.09 UJ	8.12 J	10.4 J	13.1 J	7.68 J	5.20 J	10.8 J	6.29 UJ	13.6 J	2.52 UJ	8.45 J	1.89 UJ	6.91 J	12.8 J
					MRS03-APN32436019-SS2003	2	μg/kg	0.714 J	1.37 J	12.0	64.4	62.2	86.9	40.9	33.2	78.6	10.9	135	2.65 U	46.1	1.48 J	63.3	116
					MRS03-APN32436019-SS3001	3	μg/kg	1.93 U	1.03 U	4.19 U	5.45 J	6.43 J	8.43 J	4.61 J	3.28 J	7.22 J	6.44 U	10.9	2.58 U	5.17 J	1.93 U	5.74 J	9.38 J
					MRS03-APN32436019-SS3002	3	μg/kg	6.44 J	14.4 J	23.2 J	147 J	206 J	225 J	121 J	95.7 J	232 J	35.8 J	210 J	4.68 J	137 J	22.6 J	103 J	257 J
					MRS03-APN32436019-SS3003	3	μg/kg	1.98 U	1.06 U	2.72 J	15.6	15.8	21.0	10.9	8.24 J	17.9	3.27 J	29.1	2.64 U	11.9	1.98 U	14.1	25.2
					MRS03-APN32436019-SS4001	4	μg/kg	1.79 UJ	0.884 J	2.47 J	23.2 J	25.7 J	30.9 J	14.6 J	13.2 J	33.6 J	4.29 J	38.5 J	2.38 UJ	17.5 J	1.79 UJ	14.7 J	42.0 J
					MRS03-APN32436019-SS4002	4	μg/kg	1.91 U	1.02 U	4.13 U	4.13	1.64 J	6.36	6.36	4.13	1.95 J	6.36 U	2.62 J	2.54 U	6.36	1.91 U	6.36 U	2.32 J
					MRS03-APN32436019-SS4003	4	μg/kg	0.742 J	1.24 J	1.78 J	11.4	13.7	15.9	8.09 J	6.12 J	16.4	6.28 U	18.3	2.51 U	9.09 J	2.48 J	9.31 J	20.2
56	32436020*	3978	E. Lass Ave	5/8/2019	MRS03-APN32436020-SS001	0	μg/kg	3.86 J	11.8 J	65.3 J	313 J	289 J	433 J	259 J	182 J	371 J	40.5 J	591 J	8.39 J	298 J	11.6 J	310 J	508 J
					MRS03-APN32436020-SS002	0	μg/kg	30.4 J	97.2 J	210 J	903 J	955 J	1,260 J	682 J	485 J	1170 J	155 J	1560 J	50.6 J	738 J	103 J	837 J	1500 J
					MRS03-APN32436020-SS003	0	μg/kg	4.45 J	9.35 J	61.5 J	314 J	286 J	451 J	287 J	189 J	352 J	53.7 J	551 J	4.13 J	232 J	10.3 J	298 J	469 J
					MRS03-APN32436020-SS1001	1	μg/kg	6.33 J	26.6 J	48.5 J	416 J	428 J	619 J	310 J	274 J	494 J	82.0 J	603 J	8.75 J	351 J	26.7 J	218 J	562 J
					MRS03-APN32436020-SS1002	1	μg/kg	2.01 J	7.10 J	51.6	257	271	340	161	139	292	33.8	440	4.47 J	198	5.51 J	257	374
				5/9/2019	MRS03-APN32436020-SS1003	1	μg/kg	20.4	72.6	114	531	545	679	360	288	730	99.8	782	28.6	358	54.8	429	871
				5/8/2019	MRS03-APN32436020-SS2001	2	μg/kg	1.78 U	0.950 U	3.86 U	2.66 J	2.62 J	4.44 J	2.05 J	3.86 U	3.56 J	5.94 U	5.18 J	2.38 U	5.94 U	1.78 U	2.25 J	4.97 J
					MRS03-APN32436020-SS2002	2	μg/kg	1.92 U	1.02 U	4.15 U	2.19 J	2.01 J	3.36 J	2.19 J	4.15 U	2.86 J	6.39 U	4.15 J	2.56 U	6.39 U	1.92 U	2.51 J	3.74 J
				5/9/2019	MRS03-APN32436020-SS2003	2	μg/kg	1.90 U	1.02 U	4.13 U	2.59 J	2.50 J	4.21 J	2.63 J	4.13 U	3.39 J	6.35 U	4.57 J	2.54 U	2.29 J	1.90 U	2.46 J	4.12 J
				5/8/2019	MRS03-APN32436020-SS3001	3	μg/kg	1.82 U	0.969 U	3.94 U	3.94 U	3.94 U	6.06 U	6.06 U	3.94 U	3.94 U	6.06 U	1.96 J	2.42 U	6.06 U	1.82 U	6.06 U	6.06 U
					MRS03-APN32436020-SS3002	3	μg/kg	1.86 U	0.992 U	4.03 U	2.30 J	1.86 J	3.54 J	6.20 U	4.03 U	2.73 J	6.20 U	4.52 J	2.48 U	6.20 U	1.86 U	2.28 J	4.07 J
				5/9/2019	MRS03-APN32436020-SS3003	3	μg/kg	1.92 U	1.02 U	4.16 U	2.09 J	1.48 J	3.11 J	6.40 U	4.16 U	2.48 J	6.40 U	4.10 J	2.56 U	6.40 U	1.92 U	2.11 J	3.43 J
				5/8/2019	MRS03-APN32436020-SS4001	4	μg/kg	1.86 U	0.992 U	4.03 U	1.85 J	4.03 U	3.00 J	2.27 J	2.59 J	2.75 J	6.20 U	1.90 J	2.48 U	2.23 J	1.86 U	6.20 U	6.20 U
					MRS03-APN32436020-SS4002	4	μg/kg	1.90 U	1.01 U	4.11 U	3.37 J	1.85 J	5.40 J	3.07 J	2.01 J	4.43 J	6.33 U	7.77 J	2.53 U	2.73 J	1.90 U	4.60 J	6.01 J
				5/9/2019	MRS03-APN32436020-SS4003	4	μg/kg	1.94 U	1.04 U	4.21 U	4.21 U	4.21 U	6.48 U	6.48 U	4.21 U	4.21 U	6.48 U	4.21 U	2.59 U	6.48 U	1.94 U	6.48 U	6.48 U

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
57	32437016	3964	E. Packard Ave	4/9/2019	MRS03-APN32437016-SS001	0	µg/kg	1.91 UJ	1.02 UJ	4.14 UJ	6.77 J	9.01 J	12.0 J	6.91 J	4.35 J	11.0 J	6.37 UJ	12.2 J	2.55 UJ	7.68 J	1.91 UJ	5.47 J	12.4 J
					MRS03-APN32437016-SS002	0	µg/kg	1.89 UJ	1.01 UJ	4.09 UJ	6.87 J	9.29 J	12.6 J	7.16 J	4.37 J	10.6 J	6.30 UJ	12.2 J	2.52 UJ	7.43 J	1.89 UJ	5.38 J	12.1 J
					MRS03-APN32437016-SS003	0	µg/kg	1.98 UJ	1.06 UJ	4.29 UJ	6.18 J	8.35 J	10.6 J	6.63 J	4.52 J	8.91 J	6.60 UJ	10.0 J	2.64 UJ	7.32 J	1.98 UJ	4.59 J	9.99 J
					MRS03-APN32437016-SS1001	1	µg/kg	1.97 U	1.05 U	4.26 U	3.68 J	4.20 J	6.00 J	3.49 J	2.29 J	4.83 J	6.56 U	5.89 J	2.62 U	3.99 J	1.97 U	2.89 J	5.49 J
					MRS03-APN32437016-SS1002	1	µg/kg	1.79 U	0.956 U	3.88 U	3.01 J	3.82 J	5.07 J	2.80 J	2.05 J	4.98 J	5.97 U	6.05 J	2.39 U	2.93 J	1.79 U	2.61 J	5.91 J
					MRS03-APN32437016-SS1003	1	µg/kg	1.83 U	0.975 U	3.96 U	3.37 J	4.25 J	5.80 J	3.28 J	2.37 J	5.47 J	6.09 U	6.39 J	2.44 U	3.42 J	1.83 U	2.62 J	6.21 J
					MRS03-APN32437016-SS2001	2	µg/kg	1.91 U	1.02 U	4.13 U	4.13 U	4.13 U	6.35 U	6.35 U	4.13 U	4.13 U	6.35 U	4.13 U	2.54 U	6.35 U	1.91 U	6.35 U	6.35 U
					MRS03-APN32437016-SS2002	2	µg/kg	1.98 U	1.06 U	4.29 U	4.29 U	4.29 U	6.60 U	6.60 U	4.29 U	4.29 U	6.60 U	4.29 U	2.64 U	6.60 U	1.98 U	6.60 U	6.60 U
					MRS03-APN32437016-SS2003	2	µg/kg	1.97 U	1.05 U	4.27 U	4.27 U	4.27 U	6.57 U	6.57 U	4.27 U	4.27 U	6.57 U	4.27 U	2.63 U	6.57 U	1.97 U	6.57 U	6.57 U
58	32439031	3955	E. Snavely Lane	5/29/2019	MRS03-APN32439031-SS001	0	µg/kg	74.1	216	372	2,310	2,960	3,590	1,890	1,590	3,380	462	3,840	88.6	2,090	262	1,670	4,260
					MRS03-APN32439031-SS002	0	µg/kg	55.5	167	532 J	3,150	4,100	5,560	2,950	2,180	4,380	658 J	5,610	83.3	2,810	195	2,780	5,320
					MRS03-APN32439031-SS003	0	µg/kg	14.4	41.8	129	844	1,040	1,330	698	553	1,210	189	1,480	14.6	753	41.3	632	1,560
					MRS03-APN32439031-SS1001	1	µg/kg	24.7	56.2	147	913	1,070	1,300	646	605	1,290	213	1,570	19.6	732	78.7	669	1,670
					MRS03-APN32439031-SS1002	1	µg/kg	43.0	146	595	2,950	4,010	5,220	2,740	2,040	4,090	624	5,390	84.9	2,980	148	2,630	5,320
					MRS03-APN32439031-SS1003	1	µg/kg	23.3	64.1	128	730	969	1,210	639	521	1,120	180	1,350	28.9	652	86.0	574	1,430
					MRS03-APN32439031-SS2001	2	µg/kg	9.69	25.9	93.4	486	548	788	389	283	723	126	962	10.7	437	29.6	435	950
					MRS03-APN32439031-SS2002	2	µg/kg	10.7 J	42.1	376	1,600	1,450	2,060	756	676	1,820	200	3,750	27.8 J	878	31.1 J	2,270	3,100
					MRS03-APN32439031-SS2003	2	µg/kg	33.5 J	76.6	153	1,170	1,130	1,420	898	722	1,310	243	1,560	22.4 J	1,050	115	749	1,670
				10/10/2019	MRS03-APN32439031-SS3001	3	µg/kg	6.52 J	30.6	94.3	594 J	704	874	474	339	809	147	952 J	15.2	556 J	11.7	414	1060
					MRS03-APN32439031-SS3002	3	µg/kg	9.10 J	30.0	64.1	345 J	415	543	279	268	485	98.4	567 J	11.5	333 J	31.9	288	624
					MRS03-APN32439031-SS3003	3	µg/kg	8.69 J	32.9	135 J	625 J	665 J	962	501	377	799	175 J	1170 J	16.6	582	23.2 J	570	1130
					MRS03-APN32439031-SS4001	4	µg/kg	1.95 U	0.695 J	1.68 J	13.3 J	18.3	22.6	12.5	8.97 J	17.1	3.64 J	20.2 J	2.60 U	13.4 J	0.999 J	8.79 J	21.9
					MRS03-APN32439031-SS4002	4	µg/kg	1.83 U	0.509 J	3.96 U	8.33 J	11.9	14.5	8.30 J	6.31 J	11.6	6.09 U	13.0 J	2.43 U	9.38 J	0.931 J	5.51 J	14.0
				10/11/2019	MRS03-APN32439031-SS4003	4	µg/kg	34.3	127	212	1,450 J	1,790	2170	1120	835	2050	288	2200 J	32.3	1340 J	91.4	894	2750
				10/31/2019	MRS03-APN32439031-SS5001	5	µg/kg	17.9	44.0	51.0	330	265	281	266	204	372	78.5	335	14.9	295	50.3	202	407
					MRS03-APN32439031-SS5002	5	µg/kg	3.44 J	12.9 J	20.5 J	174 J	234 J	232 J	148 J	112 J	243 J	40.4 J	243 J	4.00 J	163 J	4.06 J	94.0 J	285 J
					MRS03-APN32439031-SS5003	5	µg/kg	1.91 J	1.87 J	3.89 J	32.0	44.8	56.2	40.2	23.4	46.5	8.89 J	48.2	1.13 J	41.7	3.53 J	20.0	49.7
					MRS03-APN32439031-SS6001	6	µg/kg	1.18 J	0.672 J	4.25 U	12.4	15.8	19.1	12.9	8.92 J	18.2	3.26 J	19.0	2.62 U	13.8	2.06 J	8.28 J	20.5
					MRS03-APN32439031-SS6002	6	µg/kg	1.27 J	0.838 J	2.56 J	16.0	20.6	26.4	18.3	11.4	22.2	4.34 J	25.8	2.60 U	18.8	2.38 J	12.1	25.6
					MRS03-APN32439031-SS6003	6	µg/kg	0.926 J	1.05 U	4.26 U	2.92 J	3.39 J	4.66 J	3.09 J	4.26 U	4.31 J	6.56 U	4.78 J	2.62 U	3.23 J	1.61 J	2.39 J	4.72 J
59	32439036	3935	E. Snavely Lane	10/8/2019	MRS03-APN32439036-SS001	0	µg/kg	2.16 J	4.30 J	11.1	97.3	110	145	77.5	58.8	134	20.3	137	1.90 J	78.1	5.02 J	67.0	132
					MRS03-APN32439036-SS002	0	µg/kg	2.88 J	3.11 J	9.57 J	81.7 J	82.6 J	114 J	54.4 J	44.1 J	108 J	15.1 J	116 J	1.77 J	54.2 J	4.71 J	52.7 J	113 J
					MRS03-APN32439036-SS003	0	µg/kg	2.36 J	7.50 J	25.1	196	181	246	116	101	254	32.5	295	3.76 J	122	5.60 J	135	295
					MRS03-APN32439036-SS1001	1	µg/kg	7.94 J	26.0 J	38.4 J	317 J	431 J	515 J	283 J	215 J	486 J	74.3 J	457 J	9.97 J	273 J	1.98 UJ	207 J	549 J
					MRS03-APN32439036-SS1002	1	µg/kg	6.65 J	13.2 J	29.4 J	210 J	220 J	286 J	129 J	115 J	306 J	35.8 J	322 J	6.45 J	131 J	24.6 J	150 J	299 J
					MRS03-APN32439036-SS1003	1	µg/kg	4.12 J	20.9 J	159 J	738	820	1050	568	408	870	103 J	1590	14.9 J	626	9.64 J	802	1380
					MRS03-APN32439036-SS2001	1	µg/kg	3.95 J	6.24 J	9.11 J	76.7	85.5	111	48.9	43.6	108	14.2	113	2.81 J	51.9	12.4	50.3	126
					MRS03-APN32439036-SS2002	2	µg/kg	7.28 J	22.4 J	57.7 J	293 J	314 J	412 J	179 J	168 J	360 J	48.9 J	517 J	12.0 J	184 J	24.2 J	265 J	530 J
					MRS03-APN32439036-SS2003	2	µg/kg	3.20 J	8.08 J	14.2	137	156	197	87.5	81.4	204	25.5	192	3.50 J	93.4	8.25 J	80.1	222

TABLE 6-4
SUMMARY OF PAHs ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes	2-METHYLNAPHTHALENE	ACENAPHTHENE	ANTHRACENE	BENZ(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE
							Units	µg/kg															
60	32439037	3931	E. Snavely Lane	10/9/2019	MRS03-APN32439037-SS001	0	µg/kg	1.89 J	1.98 J	6.10 J	45.6	59.1	75.4	42.5	32.3	59.9	11.1	73.8	1.24 J	48.7	3.93 J	32.4	76.5
					MRS03-APN32439037-SS002	0	µg/kg	7.45 U	2.00 J	16.1 U	44.7	60.6	82.4	47.9	32.8 J	60.9	10.9 J	60.7	9.94 U	54.2	4.07 J	24.4 J	66.8
					MRS03-APN32439037-SS003	0	µg/kg	2.13 J	2.96 J	6.77 J	61.8	80.5	97.2	54.8	37.2	83.1	14.8	84.1	1.06 J	57.7	4.24 J	36.9	92.6
					MRS03-APN32439037-SS1001	1	µg/kg	1.67 J	2.12 J	5.65 J	71.4	112	146	95.9	57.9	95.2	22.3	92.7	2.57 U	105	4.27 J	33.6	99.4
					MRS03-APN32439037-SS1002	1	µg/kg	4.98 J	20.0 J	186	642	640	854	442	336	672	110	1390	18.3 J	506	12.0 J	799	1100
					MRS03-APN32439037-SS1003	1	µg/kg	50.7	157	235	1,690	2,140	2,560	1,280	1,140	2420	457	2350	64.2	1,490	146	967	2770
					MRS03-APN32439037-SS2001	1	µg/kg	2.65 J	6.30 J	14.1 J	160 J	208 J	243 J	146 J	110 J	220 J	44.4 J	223 J	1.90 J	170 J	4.08 J	81.1 J	261 J
					MRS03-APN32439037-SS2002	2	µg/kg	1.54 J	0.475 J	2.44 J	16.4	19.3	26.9	15.4	10.5	19.7	3.75 J	30.2	2.60 U	17.5	2.82 J	14.3	28.1
					MRS03-APN32439037-SS2003	2	µg/kg	2.05 J	2.27 J	21.9	100	107	147	80.5	58.5	110	21.1	192	1.42 J	85.8	4.06 J	112	164

Abbreviations and Notes:
-- Not applicable (open area)
* Samples had rejected data, however skeet was observed in surface and/or subsurface. No additional samples were collected.
µg/kg - micrograms per kilogram
J - estimated value; the analyte was positively identified
R- values rejected by lab, parcels had observed skeet, samples are used for reporting purposes
U - not detected above the limit of detection
UJ - estimated non-detect
1 surface sample MRS03-APN32404639-SS001 and MRS03-APN32404640-SS001collected and analyzed by previous contractor, Eco and Associates, Inc. 4/6/2015
The 15 Skeet Ranges site was previously identified in USACE records as part of Munitions Response Site (MRS) 03. This designation was later changed, following the Site Inspection (Parsons 2011) to include the Site as part of MRS01. References to MRS03 are retained in portions of the RI report, including sample identifiers, for legacy reasons.

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
1	APN 31021063*	Surface (SS00)	95% UCL	7.69	14.4	30.2	49.5	1.08	2.42	6.52	36.8	46.0	58.9	34.8	23.4	46.0	9.05	68.1	1.25	41.9	2.20	37.0	59.7
		0' to 1' BGS (SS100)	95% UCL	3.83	18.6	102.0	61.2	1.30	0.536	2.19	10.6	14.6	18.8	10.3	7.14	15.0	3.36	19.7	1.34	11.4	1.70	8.68	18.7
		1' to 2' BGS (SS200)	95% UCL	3.78	16.7	12.5	58.9	1.86	0.527	4.98	31.9	27.6	39.4	17.8	13.7	33.9	3.87	67.1	1.31	19.2	2.46	42.0	52.8
2	APN 31021078	Surface (SS00)	95% UCL	3.53	11.8	97.8	66.0	6.43	1.35	3.39	26.3	32.2	42.6	21.9	16.2	37.5	5.11	41.4	1.37	27.1	6.34	24.6	37.7
		0' to 1' BGS (SS100)	95% UCL	3.94	13.1	56.4	70.7	0.983	0.580	2.13	22.5	28.6	40.4	21.7	15.7	30.5	3.79	29.9	1.31	23.6	1.78	10.9	27.8
		1' to 2' BGS (SS200)	95% UCL	3.88	12.9	16.1	74.3	1.02	0.541	2.21	2.21	2.21	3.40	3.40	2.21	2.21	3.40	2.21	1.36	3.40	2.18	3.40	3.40
3	APN 31021080	Surface (SS00)	95% UCL	0.741	4.48	7.49	28.3	1.05	0.560	2.27	2.28	2.27	3.11	4.15	2.27	2.68	3.50	4.20	1.40	3.50	1.05	3.50	4.03
		0' to 1' BGS (SS100)	95% UCL	0.783	10.4	21.2	34.7	0.926	0.495	2.06	2.22	2.10	4.87	3.08	2.01	4.13	3.09	5.20	1.23	3.09	0.926	4.02	3.49
		1' to 2' BGS (SS200)	95% UCL	0.764	11.0	10.8	36.4	1.08	0.573	2.32	2.32	2.05	3.05	3.58	2.32	2.89	3.58	3.57	1.43	3.58	1.08	3.58	3.22
	APN 31021080A*	Surface (SS00)	95% UCL	0.763	311	234	374	1.16	1.09	4.46	21.8	35.5	60.6	62.3	23.6	30.9	13.4	19.6	2.74	59.2	3.42	6.87	19.5
		0' to 1' BGS (SS100)	95% UCL	0.764	376	152	420	1.96	1.36	6.20	103	268	361	299	133	143	65.0	87.2	2.69	293	6.63	28.9	85.2
		1' to 2' BGS (SS200)	95% UCL	0.760	35.9	62.6	65.6	2.08	1.11	4.50	5.75	6.05	11.4	6.67	5.62	5.88	6.94	4.55	2.77	6.77	1.29	6.94	4.82
	APN 31021080B*	Surface (SS00)	95% UCL	0.781	51.6	37.6	49.4	2.03	1.08	4.39	9.86	12.3	16.2	7.25	4.65	10.6	6.77	20.1	2.70	7.87	2.03	6.89	12.9
		0' to 1' BGS (SS100)	95% UCL	0.787	20.4	13.9	49.3	2.02	1.08	4.38	4.71	77.6	97.0	193	29.5	11.4	29.5	5.37	2.68	174	2.02	6.73	10.6
		1' to 2' BGS (SS200)	95% UCL	0.743	11.8	8.7	44.7	1.99	1.07	4.31	4.31	4.31	6.64	6.64	4.31	4.31	6.64	4.31	2.65	6.64	1.99	6.64	6.64

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
4	APN 31038002	Surface (SS00)	95% UCL	0.742	12.8	77.9	64.5	1.27	0.601	3.52	38.9	53.5	72.6	41.4	27.3	54.8	8.90	63.6	1.33	46.5	1.59	26.8	61.0
		0' to 1' BGS (SS100)	95% UCL	5.79	16.7	43.9	61.0	0.965	0.553	2.27	11.4	17.1	21.3	13.6	7.95	17.2	3.49	18.6	1.39	14.2	1.45	6.66	19.0
		1' to 2' BGS (SS200)	95% UCL	0.749	17.1	11.6	53.2	1.11	0.529	2.16	2.16	2.16	3.31	3.31	2.16	2.16	3.31	2.16	1.33	3.31	2.04	3.31	3.31
5	APN 32404206A	Surface (SS00)	95% UCL	3.95	14.0	114	76.4	33.3	2.41	10.7	76.7	97.8	126	74.4	56.9	98.6	23.1	133	1.51	80.9	17.7	61.3	122
		0' to 1' BGS (SS100)	95% UCL	4.09	15.7	91.6	56.5	1.21	0.643	2.27	23.1	28.4	38.3	19.1	14.8	29.0	4.83	28.9	1.39	21.9	2.35	11.4	29.6
		1' to 2' BGS (SS200)	95% UCL	4.39	16.1	15.7	54.4	0.905	0.543	2.20	2.20	2.23	3.86	3.38	2.20	2.20	3.38	2.30	1.36	3.38	2.05	3.38	4.11
6	APN 32404208A	Surface (SS00)	95% UCL	0.733	218	31.9	81.6	3.84	9.47	10.2	35.0	54.8	72.6	45.4	29.3	45.8	12.9	60.2	7.84	48.7	5.50	54.5	58.6
		0' to 1' BGS (SS100)	95% UCL	1.14	25.7	66.4	62.2	5.73	9.96	12.6	104	134	141	77.7	64.0	145	23.8	137	3.34	90.7	11.4	63.9	164
		1' to 2' BGS (SS200)	95% UCL	0.722	16.3	15.2	53.1	1.35	0.516	2.10	2.10	2.10	3.22	3.22	2.10	2.10	3.22	2.10	1.29	3.22	3.47	3.22	3.22
7	APN 32404211C	Surface (SS00)	95% UCL	0.781	21.0	125	101	4.62	2.48	6.64	58.6	79.2	116	66.6	45.5	93.7	14.5	103	2.15	69.1	8.28	37.3	116
		0' to 1' BGS (SS100)	95% UCL	0.774	18.0	131	62.9	6.23	3.15	13.6	18.6	24.5	37.0	20.8	15.0	27.2	19.6	33.4	8.27	21.8	5.44	16.3	32.1
		1' to 2' BGS (SS200)	95% UCL	0.760	18.5	42.7	81.0	3.54	1.70	4.16	33.9	44.6	69.9	38.6	25.5	56.0	7.86	61.3	1.41	40.3	5.39	23.0	68.4
8	APN 32404213	Surface (SS00)	95% UCL	0.786	26.0	50.7	96.1	4.61	2.76	4.68	16.6	27.3	36.2	20.4	12.4	26.4	4.45	33.1	3.78	18.8	5.46	15.0	39.7
9	APN 32404241	Surface (SS00)	95% UCL	3.77	10.3	15.3	78.5	2.65	0.566	2.17	6.80	9.84	16.1	9.82	6.52	11.2	3.33	14.0	1.34	10.6	4.71	6.57	12.9
		0' to 1' BGS (SS100)	95% UCL	6.81	11.3	9.75	39.5	2.04	0.540	2.18	2.79	5.02	6.45	3.44	2.28	4.13	3.36	4.86	1.34	4.53	3.45	3.36	5.01
		1' to 2' BGS (SS200)	95% UCL	0.765	10.4	8.28	36.8	1.48	0.69	2.17	2.17	2.17	3.33	3.33	2.17	2.17	3.33	2.17	1.33	3.33	2.26	3.33	3.33

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
10	APN 32404242*	Surface (SS00)	95% UCL	0.774	46.8	85.1	75.9	11.2	0.706	5.58	13.4	19.9	30.5	15.8	11.4	25.4	3.88	32.5	1.43	17.8	21.7	28.6	30.5
		0' to 1' BGS (SS100)	95% UCL	1.55	19.4	9.94	41.5	2.19	3.96	2.19	2.19	2.3	3.23	3.36	2.19	2.68	3.36	3.31	1.35	3.36	4.78	4.15	3.66
		1' to 2' BGS (SS200)	95% UCL	0.762	9.69	8.41	36.5	3.43	0.551	2.24	2.24	5.77	3.45	3.45	2.24	2.24	3.45	2.32	1.38	3.45	4.37	3.45	3.45
11	APN 32404277A	Surface (SS00)	95% UCL	0.764	28.0	97.8	78.2	6.99	2.19	13.9	90.3	114	145	107	63.6	113	25.5	137	3.18	98.4	8.97	42.6	141
12	APN 32404279	Surface (SS00)	95% UCL	0.773	10.5	13.5	43.7	1.89	0.617	2.22	6.24	7.11	12.2	6.68	4.67	11.0	3.41	11.9	1.35	6.71	3.31	6.04	11.0
13	APN 32404280	Surface (SS00)	95% UCL	0.765	11.0	13.1	47.0	2.39	0.573	2.19	7.72	10.1	15.8	10.4	5.05	14.5	3.36	16.2	1.34	9.30	4.07	7.72	14.5
		0' to 1' BGS (SS100)	95% UCL	0.763	11.6	12.1	43.2	1.61	0.712	2.18	2.36	7.73	4.90	6.19	2.18	5.26	3.35	5.15	1.34	3.82	3.14	3.35	4.84
		1' to 2' BGS (SS200)	95% UCL	0.772	11.5	8.35	41.7	1.60	0.545	2.22	2.22	2.22	3.42	3.42	2.22	2.22	3.42	2.22	1.36	3.42	3.32	3.42	3.42
14	APN 32404487	Surface (SS00)	95% UCL	0.743	49.3	14.2	102	1.32	1.86	10.4	81.5	123	195	284	78.0	126	29.0	147	1.48	147	3.38	57.6	153
15	APN 32404526	Surface (SS00)	95% UCL	3.79	12.7	18.7	70.3	6.35	3.05	17.5	124	194	231	135	94.8	149	35.0	206	2.07	157	8.51	85.0	197
		0' to 1' BGS (SS100)	95% UCL	3.79	12.7	5.73	46.7	5.06	16.5	171	745	727	1070	502	510	794	172	1510	6.25	623	13.3	737	1270
		1' to 2' BGS (SS200)	95% UCL	3.93	13.1	5.45	49.4	2.92	0.533	2.17	2.17	2.17	3.33	3.33	2.17	2.17	3.33	2.17	1.34	3.33	6.16	3.33	3.33
16	APN 32404527	Surface (SS00)	95% UCL	0.813	15.9	13.0	54.2	6.45	9.97	19.8	150	195	229	146	100	224	38.6	221	3.47	155	8.90	104	239
		0' to 1' BGS (SS100)	95% UCL	0.753	11.5	12.9	42.1	5.60	14.0	49.9	256	318	382	242	155	337	58.1	441	7.96	246	12.5	232	425
		1' to 2' BGS (SS200)	95% UCL	0.785	14.5	9.96	46.3	5.66	0.519	2.09	5.15	5.92	8.82	3.38	738	7.91	3.23	11.1	1.29	3.66	5.49	4.31	9.62

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
17	APN 32404550*	Surface (SS00)	95% UCL	0.789	17.3	27.7	99.5	13.0	16.3	24.4	631	1,080	1,360	880	595	930	222	545	20.1	920	12.4	125	630
		0' to 1' BGS (SS100)	95% UCL	1.51	14.8	19.6	53.8	7.76	13.1	37.8	475	536	643	335	265	519	93.1	536	6.59	377	11.8	159	572
		1' to 2' BGS (SS200)	95% UCL	0.713	15.9	10.6	47.9	3.77	0.543	2.20	13.8	12.8	22.9	7.64	7.70	20.5	3.39	14.3	1.35	9.41	3.55	3.60	12.3
18	APN 32404552A	Surface (SS00)	95% UCL	3.91	13.1	37.5	96.1	4.71	1.18	26.1	41.5	41.5	52.9	25.9	27.7	33.9	7.84	44.5	3.13	31.2	5.74	17.6	43.2
		0' to 1' BGS (SS100)	95% UCL	3.80	12.7	18.8	66.3	1.60	0.541	14.7	18.7	18.7	25.2	13.4	9.84	18.9	3.36	25.5	1.35	16.6	3.29	9.77	24.1
		1' to 2' BGS (SS200)	95% UCL	3.89	13.0	14.9	68.7	1.82	0.533	2.23	2.23	2.23	3.44	3.44	2.23	2.23	3.44	2.23	1.38	3.44	4.04	3.44	3.44
19	APN 32404553	Surface (SS00)	95% UCL	0.746	11.4	32.3	90.3	5.95	2.19	17.5	92.6	110	148	78.2	68.6	105	21.8	147	11.5	93.8	6.32	70.6	129
		0' to 1' BGS (SS100)	95% UCL	0.770	10.5	17.7	45.4	5.52	3.69	2.26	42.8	48.1	62.7	25.7	24.7	49.9	8.05	38.2	1.43	34.2	6.74	17.9	45.0
		1' to 2' BGS (SS200)	95% UCL	0.760	10.7	9.39	39.6	6.23	0.613	2.18	16.1	14.2	18.5	6.32	7.22	17.1	3.36	20.3	1.57	8.83	8.56	5.51	20.5
20	APN 32404556A	Surface (SS00)	95% UCL	0.775	327	44.4	108	7.01	3.79	27.9	137	159	237	105	102	190	25.7	252	5.36	126	15.9	128	223
21	APN 32404578	Surface (SS00)	95% UCL	0.782	20.3	59.9	139	11.6	4.55	37.4	245	474	536	288	292	482	87.8	166	8.48	314	17.6	50.9	189
22	22. APN 32404582	Surface (SS00)	95% UCL	0.726	17.8	22.2	120	39.9	92.4	153	804	978	1080	596	468	1180	180	1170	28.0	681	102	644	1360
		0' to 1' BGS (SS100)	95% UCL	0.743	52.2	21.0	69.6	4.28	4.80	53.0	249	274	387	245	151	271	57.2	497	2.17	261	7.88	231	406
		1' to 2' BGS (SS200)	95% UCL	0.746	24.5	11.9	57.0	1.50	0.819	2.00	2.00	2.32	3.38	4.11	2.00	2.43	3.09	2.13	1.23	3.95	2.77	3.09	4.00
23	APN 32404624	Surface (SS00)	95% UCL	0.770	30.3	14.9	73.5	0.943	0.502	2.04	14.5	17.0	25.2	12.2	10.9	21.7	3.16	24.5	1.26	15.7	1.19	6.12	24.2
		0' to 1' BGS (SS100)	95% UCL	0.771	17.6	11.7	60.6	0.968	0.523	2.10	3.98	4.57	7.50	3.51	3.28	6.87	3.24	7.07	1.30	4.53	0.968	3.24	5.44
		1' to 2' BGS (SS200)	95% UCL	0.764	17.4	11.8	59.8	1.03	0.547	2.22	2.22	2.22	3.41	3.41	2.22	2.22	3.41	2.22	1.37	3.41	1.03	3.41	3.41

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
24	APN 32404625	Surface (SS00)	95% UCL	1.20	18.9	88.4	51.8	1.25	0.498	2.03	12.2	14.0	20.8	10.4	8.83	17.7	3.41	20.4	1.25	11.7	1.63	6.06	18.5
		0' to 1' BGS (SS100)	95% UCL	0.771	17.6	13.8	56.9	1.03	0.545	2.22	4.70	6.23	10.6	7.20	5.67	9.21	3.47	5.88	1.36	7.27	1.03	3.41	5.45
		1' to 2' BGS (SS200)	95% UCL	0.768	16.7	10.9	55.4	0.975	0.521	2.12	2.12	2.12	3.27	3.27	2.12	2.12	3.27	2.12	1.31	3.27	0.975	3.27	3.27
25	APN 32404629A	Surface (SS00)	95% UCL	1.35	21.0	482	130	2.41	1.03	4.97	123	165	258	122	97.8	191	33.9	123	1.6	134	2.85	23.7	116
		0' to 1' BGS (SS100)	95% UCL	0.797	16.1	58.2	95.7	2.18	1.00	2.26	19.5	30.1	40.4	26.6	14.8	35.2	6.06	24.3	1.39	21.7	3.01	8.25	27.0
		1' to 2' BGS (SS200)	95% UCL	0.778	12.3	18.4	49.5	1.27	0.535	2.16	2.03	4.08	6.45	3.58	2.16	5.19	3.33	2.58	1.33	3.60	1.30	3.33	3.93
26	APN 32404631B	Surface (SS00)	95% UCL	0.751	17.0	26.7	84.2	2.16	0.546	3.15	20.2	45.0	71.9	18.6	17.7	29.3	3.42	35.3	1.61	34.2	3.68	18.4	32.6
27	APN 32404638	Surface (SS00)	95% UCL	0.753	90.9	49.8	154	9.80	11.9	33.4	144	171	246	130	99.9	200	33.9	349	11.7	138	39.0	216	321
		0' to 1' BGS (SS100)	95% UCL	0.752	15.5	37.2	55.4	4.28	2.95	7.27	44.8	49.8	64.5	34.3	28.5	62.9	10.0	76.9	1.84	38.0	6.67	36.1	79.7
		1' to 2' BGS (SS200)	95% UCL	0.763	15.0	10.1	48.6	1.50	0.514	2.10	2.10	2.10	3.23	3.23	2.10	2.10	3.23	2.10	1.29	3.23	4.01	3.23	3.23
28	APN 32404639	0' to 1' BGS (SS100)	95% UCL	0.772	14.8	30.7	49.7	1.43	1.33	10.9	48.4	59.4	77.4	43.8	28	53.8	10.8	99.1	1.36	47.5	2.70	49.8	87.4
		1' to 2' BGS (SS200)	95% UCL	0.748	14.4	12.6	49.6	1.18	0.533	2.18	6.30	10.4	12.5	5.74	3.94	10.3	3.36	12.3	1.34	6.42	1.01	3.50	11.8
29	APN 32404640	0' to 1' BGS (SS100)	95% UCL	3.57	11.9	32.0	72.2	14.7	45.6	134	855	1,110	1,370	680	507	1280	208	1540	16.7	812	50.3	622	1640
		1' to 2' BGS (SS200)	95% UCL	3.71	12.4	12.8	65.5	1.99	5.61	15.3	126	136	169	94.4	67.1	163	23.1	217	1.48	102	6.63	90.1	214
		2' to 3' BGS (SS300)	95% UCL	3.66	12.2	9.48	39.8	4.56	12.5	14.7	73.7	98.1	102	49.4	44.6	110	13.9	113	3.72	54.9	13.8	67.4	140
		3' to 4' BGS (SS400)	95% UCL	3.96	8.04	7.61	31.5	1.63	6.16	7.87	51.3	63.7	67.8	34.9	28.9	75.8	8.91	82.8	1.35	39.5	4.74	42.8	99

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
30	APN 32404656	Surface (SS00)	95% UCL	0.714	15.7	16.6	97.9	7.22	20.3	8.87	99.0	132	176	110	65.5	109	28.4	188	5.63	125	11.2	111	165
31	APN 32404658	Surface (SS00)	95% UCL	3.70	23.6	107	113	6.46	2.03	23.0	73.5	115	148	83	51.3	104	204	115	5.51	98.7	4.11	46.5	111
		0' to 1' BGS (SS100)	95% UCL	3.92	13.1	77.6	162	1.80	0.962	24.3	36.4	52.6	62.4	35.3	24.4	45.1	6.51	54.6	1.39	39.1	3.43	25.0	51.5
		1' to 2' BGS (SS200)	95% UCL	36.3	32.2	15.8	53.7	1.35	15.1	2.05	2.05	2.05	3.19	3.15	2.05	2.64	3.15	3.84	1.27	3.15	8.58	3.15	3.42
32	APN 32404659	Surface (SS00)	95% UCL	0.774	32.1	75.0	65.5	14.8	2.93	10.1	90.5	139	171	109	66.0	125	23.8	154	5.29	127	17.7	69.8	151
		0' to 1' BGS (SS100)	95% UCL	0.757	16.5	81.3	50.3	10.6	2.09	3.59	35.6	53.5	59.9	33.3	23.9	50.7	8.68	50.0	1.69	40.6	15.0	23.6	56.1
		1' to 2' BGS (SS200)	95% UCL	0.760	16.0	12.7	51.1	17.8	0.676	2.14	2.15	2.15	3.30	3.30	2.15	2.15	3.30	2.15	1.95	3.30	24.2	3.30	3.30
33	APN 32404664	Surface (SS00)	95% UCL	0.770	13.8	18.1	88.8	1.19	0.987	2.91	19.2	25.9	38.5	21.1	14.8	24.9	6.03	32.5	1.44	22.0	1.99	14.4	33.1
34	APN 32404665	Surface (SS00)	95% UCL	3.86	12.9	21.4	86.4	11.3	1.77	14.7	72.4	81.6	117	18.6	47.9	80.1	16.9	151	1.34	80.1	14.2	76.6	126
		0' to 1' BGS (SS100)	95% UCL	3.71	12.4	28.6	49.4	1.15	0.545	2.23	6.21	8.73	12.4	6.68	4.90	8.98	3.32	10.7	1.37	7.45	1.26	4.19	10.8
		1' to 2' BGS (SS200)	95% UCL	4.05	13.5	18.9	52.3	6.54	0.555	2.25	4.92	6.46	7.90	5.66	6.62	7.06	3.70	3.52	1.38	7.10	13.0	3.45	4.30
35	APN 32404666	Surface (SS00)	95% UCL	0.775	43.1	21.4	109	3.85	2.71	33.6	168	190	270	160	111	206	38.0	351	2.24	160	11.4	178	301
		0' to 1' BGS (SS100)	95% UCL	0.746	11.9	23.2	49.2	1.72	0.902	2.29	21.0	26.0	41.4	25.3	30.0	29.8	4.96	32.5	1.41	26.6	2.79	14.1	31.4
		1' to 2' BGS (SS200)	95% UCL	0.795	11.9	12.4	42.1	1.07	1.39	2.18	23.2	26.1	29.7	15.8	12.7	37.5	3.30	35.7	1.30	18.1	3.44	17.8	41.5
36	APN 32404688	Surface (SS00)	95% UCL	0.751	18.2	20.9	58.2	2.50	4.76	17.0	172	212	268	162	104	224	42.8	288	1.68	172	4.73	121	268
		0' to 1' BGS (SS100)	95% UCL	0.770	17.1	7.07	49.4	2.80	11.0	104	485	478	670	316	236	496	81.1	1110	8.19	350	7.66	472	930
		1' to 2' BGS (SS200)	95% UCL	2.02	17.4	7.28	60.2	1.18	0.528	2.13	11.7	7.06	17.2	4.39	2.13	16.1	3.28	18.9	1.32	4.13	2.61	3.28	13.5
37	APN 32404727	Surface (SS00)	95% UCL	0.773	29.0	14.1	86.7	12.1	5.29	21.5	38.9	56.0	78.8	57.3	31.5	59.3	33.1	64.1	13.2	56.4	9.89	41.4	60.3
38	APN 32404730	Surface (SS00)	95% UCL	0.764	14.1	15.7	67.7	2.15	1.09	2.89	22.5	32.1	45.5	27.1	13.1	35.4	6.49	40.1	1.38	26.8	4.03	16.5	40.0

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
39	APN 32405168	Surface (SS00)	95% UCL	0.730	19.1	20.3	116	6.66	0.738	2.68	11.9	16.0	23.5	13.3	12.2	30.4	4.14	26.3	1.52	11.3	7.97	11.0	23.6
40	APN 32405169	Surface (SS00)	95% UCL	0.728	12.1	17.4	47.6	3.47	0.548	3.36	16.5	20.8	35.3	7.92	5.13	27.4	6.76	26.3	7.00	8.84	1.71	41.5	26.9
		0' to 1' BGS (SS100)	95% UCL	0.746	14.2	11.9	47.3	1.01	0.540	2.18	7.79	5.04	5.04	6.22	7.05	5.04	3.36	7.36	1.35	6.62	1.01	3.36	6.32
		1' to 2' BGS (SS200)	95% UCL	0.771	14.3	9.93	47.4	0.968	0.515	2.10	2.10	2.10	3.23	3.23	2.10	2.10	3.23	2.10	1.29	3.23	0.968	3.23	3.23
41	APN 32405172*	Surface (SS00)	95% UCL	0.793	16.2	40.3	136	5.78	11.0	45.3	265	296	378	181	156	325	46.7	479	5.48	225	20.4	223	462
		0' to 1' BGS (SS100)	95% UCL	1.56	11.9	17.8	40.0	7.15	12.7	72.8	436	549	436	346	257	492	94.1	689	4.40	407	26.8	347	637
		1' to 2' BGS (SS200)	95% UCL	0.764	16.6	13.2	55.2	4.73	5.51	6.13	48.1	67.7	74.0	38.4	32.1	67.1	10.1	67.2	1.80	48.6	16.8	32.3	83.1
42	APN 32405174	Surface (SS00)	95% UCL	0.801	13.2	23.0	86.0	3.05	1.13	2.70	20.8	34.9	46.2	24.9	17.2	37.5	6.54	52.6	1.26	30.6	5.53	15.5	51.0
		0' to 1' BGS (SS100)	95% UCL	1.89	15.5	37.0	57.3	1.02	0.547	2.21	11.5	12.5	16.2	9.85	10.4	16.0	5.14	13.9	1.36	11.1	1.02	4.25	14.8
		1' to 2' BGS (SS200)	95% UCL	0.754	17.5	12.3	55.3	2.91	6.23	15.8	359	484	568	283	238	378	55.7	386	1.37	369	13.8	77.9	390
		2' to 3' BGS (SS300)	95% UCL	0.77	23.7	13.2	59.2	7.28	0.52	2.13	2.13	2.41	3.46	3.28	2.13	6.72	3.28	2.13	1.31	3.28	9.00	3.28	3.28
		3' to 4' BGS (SS400)	95% UCL	0.76	14.6	10.5	50.4	7.11	3.45	15.3	123	186	301	130	109	224	34.1	117	3.85	150	13.10	35.00	124
43	APN 32405176	Surface (SS00)	95% UCL	1.20	18.0	8.14	77.0	6.65	16.0	67.0	395	501	442	301	252	454	85.0	566	13.0	361	8.14	299	567
		0' to 1' BGS (SS100)	95% UCL	0.740	18.0	40.0	59.0	2.48	2.45	3.21	33.0	47.0	53.0	28.0	22.0	47.0	7.33	47.0	1.34	32.0	8.04	23.0	57.0
		1' to 2' BGS (SS200)	95% UCL	0.765	19.0	9.47	70.0	1.00	0.540	2.20	2.20	2.20	3.37	3.37	2.20	2.20	3.37	2.20	1.35	3.37	1.94	3.37	3.37
44	APN 32405177	Surface (SS00)	95% UCL	0.738	13.2	22.0	58.0	5.05	1.04	4.23	32.0	42.8	53.1	29.4	23.3	41.1	8.60	62.3	1.35	36.9	11.9	31.8	56.7
		0' to 1' BGS (SS100)	95% UCL	0.773	11.5	41.7	43.9	9.17	0.682	2.25	19.0	22.6	27.4	14.6	11.7	20.6	6.62	33.3	1.32	18.1	11.7	16.5	30.6
		1' to 2' BGS (SS200)	95% UCL	0.765	13.3	18.8	41.6	9.36	0.552	2.25	2.25	2.69	3.60	3.46	2.25	2.27	3.46	4.18	1.35	3.85	12.0	3.46	3.58

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
45	APN 32405178	Surface (SS00)	95% UCL	0.770	12.0	75.0	46.0	4.84	11.0	85.0	554	560	800	421	383	744	113	1330	12.0	449	11.0	685	1250
		0' to 1' BGS (SS100)	95% UCL	0.790	11.0	40.0	38.0	7.77	0.640	2.32	34.0	43.0	54.0	27.0	24.0	41.0	7.87	60.0	1.36	36.0	12.0	24.0	58.0
		1' to 2' BGS (SS200)	95% UCL	0.750	11.0	14.0	41.0	9.35	0.540	2.20	4.98	6.04	8.65	3.36	2.65	7.33	3.50	11.0	1.35	3.85	12.0	4.08	10.0
46	APN 32405206A	Surface (SS00)	95% UCL	1.24	13.9	101	65.4	5.15	3.58	11.8	105	143	191	124	71.2	139	28.9	172	1.71	125	5.15	65.8	168
		0' to 1' BGS (SS100)	95% UCL	0.763	12.5	78.6	45.8	5.43	31.3	46.8	427	636	736	499	316	597	141	545	7.68	565	59.2	223	659
		1' to 2' BGS (SS200)	95% UCL	0.741	13.5	10.5	44.0	8.84	0.518	2.11	3.49	5.64	7.04	4.48	2.11	5.01	3.24	6.00	1.30	4.60	0.970	4.15	5.82
47	APN 32405212*	Surface (SS00)	95% UCL	1.49	13.7	89.2	63.6	1.78	0.933	2.85	38.0	58.7	78.3	45.1	30.0	58.5	10.1	61.7	1.43	47.3	13.2	23.0	62.1
		0' to 1' BGS (SS100)	95% UCL	0.763	16.7	65.5	49.5	0.827	0.564	2.21	10.6	15.4	21.0	9.53	6.97	19.1	3.49	32.6	1.40	10.7	1.29	21.0	26.3
		1' to 2' BGS (SS200)	95% UCL	0.780	18.4	35.2	57.0	1.10	0.533	2.17	2.17	2.17	3.33	3.33	2.17	2.17	3.33	2.17	1.33	3.33	2.65	3.33	3.33
48	APN 32405218A	Surface (SS00)	95% UCL	0.769	15.7	15.2	81.0	1.53	1.06	4.77	19.1	21.8	35.0	14.1	10.4	26.8	3.24	36.2	2.07	16.1	2.63	18.1	33.0
49	APN 32405269	Surface (SS00)	95% UCL	6.53	49.1	17.9	61.0	1.73	0.730	2.11	4.34	6.49	10.5	6.01	2.99	6.27	3.24	8.95	1.30	6.41	3.61	3.77	7.59
		0' to 1' BGS (SS100)	95% UCL	0.792	18.8	13.1	49.6	1.61	0.571	2.30	2.30	2.57	4.72	3.96	2.30	3.66	3.55	3.82	1.41	4.04	5.27	3.55	3.47
		1' to 2' BGS (SS200)	95% UCL	0.785	13.3	9.70	44.0	52.6	6.47	3.66	2.10	2.10	3.24	3.24	2.10	2.10	3.24	2.10	8.12	3.24	4.40	14.7	3.36
		3' to 4' BGS (SS400)	95% UCL	3.96	8.04	7.61	31.5	1.63	6.16	7.87	2.10	2.10	3.24	3.24	2.10	2.10	3.24	2.10	8.12	3.24	4.74	42.8	99.0
50	APN 32405289	Surface (SS00)	95% UCL	0.774	19.3	37.2	128	6.88	1.28	5.00	37.5	50.5	77.1	53.8	28.5	62.1	10.2	59.3	1.35	44.1	8.36	23.1	54.6
		0' to 1' BGS (SS100)	95% UCL	0.743	14.7	34.4	68.5	5.01	2.26	3.41	38.2	52.5	61.7	37.6	24.7	54.9	9.95	54.2	1.35	36.7	5.06	20.1	61.8
		1' to 2' BGS (SS200)	95% UCL	0.704	14.2	11.2	49.9	1.25	0.545	2.20	2.20	2.40	3.53	3.39	2.20	2.49	3.39	3.49	1.36	3.39	1.43	4.58	4.03
51	APN 32405290	Surface (SS00)	95% UCL	0.745	17.8	30.7	113	5.11	3.80	13.3	51.5	63.0	121	53.8	43.7	139	13.5	245	1.91	52.7	7.41	146	189

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
52	APN 32436008*	Surface (SS00)	95% UCL	0.743	15.4	12.2	43.4	2.01	1.20	4.26	41.5	56.0	71.7	45.0	31.2	56.9	10.9	65.7	1.39	45.6	3.54	25.4	65.5
		Surface (SS00)	95% UCL	0.718	14.2	12.1	43.2	3.35	4.11	18.0	147	266	352	246	135	196	62.9	214	1.71	258	9.09	93.9	202
		Surface (SS00)	95% UCL	0.743	15.9	11.1	52.0	2.07	0.564	2.29	2.29	2.64	4.23	3.52	2.29	2.7	3.52	3.54	1.41	4.60	3.09	3.52	4.18
53	APN 32436011	Surface (SS00)	95% UCL	6.04	13.2	89.1	78.5	1.20	2.71	12.1	102	125	187	102	66.1	130	24.1	169	1.19	117	2.66	67.1	159
		0' to 1' BGS (SS100)	95% UCL	0.758	13.3	18.7	54.0	1.01	1.03	4.80	36.9	49.3	70.6	39.6	25.5	48.2	9.19	66.1	1.35	42.8	1.10	26.9	60.9
		1' to 2' BGS (SS200)	95% UCL	0.756	16.3	11.3	51.4	1.02	0.547	2.22	6.18	10.9	13.7	6.80	4.43	9.63	3.41	12.9	1.37	7.14	1.02	3.36	13.2
54	APN 32436012*	Surface (SS00)	95% UCL	0.776	29.6	75.9	54.7	1.93	5.69	23.3	157	216	263	146	123	177	40.8	232	2.79	173	5.11	103	220
		0' to 1' BGS (SS100)	95% UCL	0.775	20.1	23.0	45.5	2.13	6.00	31.8	216	269	378	203	140	274	52.4	431	3.58	227	5.37	181	393
		1' to 2' BGS (SS200)	95% UCL	0.753	16.8	16.0	51.3	12.8	29.1	45.7	307	428	512	296	204	439	78.5	484	7.69	312	51.6	220	537
		2' to 3' BGS (SS300)	95% UCL	0.743	13.9	10.9	48.6	1.03	0.56	2.24	2.53	3.65	5.38	4.17	2.24	4.34	3.45	3.64	1.38	3.78	1.03	3.45	3.97
		3' to 4' BGS (SS400)	95% UCL	0.79	9.85	8.47	34.60	1.02	0.54	2.21	2.21	2.21	3.58	3.40	2.21	2.21	3.40	3.04	1.36	3.40	1.02	3.40	3.40
55	APN 32436019	Surface (SS00)	95% UCL	0.792	65.9	28.5	55.1	23.5	79.0	397	2,090	2,510	3,040	1,620	1,290	2,460	365	4,210	47.0	1,910	77.5	2,010	3,910
		0' to 1' BGS (SS100)	95% UCL	0.772	17.7	79.1	50.7	35.4	126	667	2,440	2,710	3,500	1,850	1,450	3,130	477	5,430	88.4	2,110	115	2,720	4,920
		1' to 2' BGS (SS200)	95% UCL	0.745	16.3	227	55.2	1.34	4.76	28.2	153	156	214	101	81.1	193	25.9	315	2.63	115	3.84	149	277
		2' to 3' BGS (SS300)	95% UCL	0.801	13.0	10.3	47.3	10.7	25.3	39.6	255	360	391	210	167	405	61.4	360	7.33	238	39.6	177	446
		3' to 4' BGS (SS400)	95% UCL	0.747	8.75	7.74	34.9	1.14	1.80	2.98	37.1	44.0	48.9	20.6	19.8	57.2	5.18	65.1	1.35	25.6	3.70	23.6	71.5

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
				Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
56	APN 32436020*	Surface (SS00)	95% UCL	1.49	27.2	40.0	80.4	51.0	165	325	1,370	1,480	1,900	1010	721	1810	241	2340	85.7	1120	175	1260	2300
		0' to 1' BGS (SS100)	95% UCL	2.23	15.9	147	51.3	33.8	120	164	748	761	1000	538	441	1060	158	1040	46.3	530	91.2	584	1230
		1' to 2' BGS (SS200)	95% UCL	0.708	17.7	94.9	56.1	1.03	0.549	2.23	3.12	3.19	5.44	3.05	2.23	4.19	3.43	5.94	1.37	4.00	1.03	2.75	5.86
		2' to 3' BGS (SS300)	95% UCL	0.728	13.1	10.4	48.4	0.997	0.529	2.16	2.54	2.42	3.92	3.33	2.16	3.37	3.33	6.98	1.33	3.33	0.997	3.71	4.83
		3' to 4' BGS (SS400)	95% UCL	0.780	8.1	7.44	31.9	1.00	0.538	2.17	4.49	2.32	7.21	4.16	3.02	6.12	3.35	12.3	1.34	4.00	1.00	5.73	8.25
57	APN 32437016	Surface (SS00)	95% UCL	0.751	25.0	13.8	54.7	1.02	0.548	2.22	7.55	10.1	14.3	7.57	4.65	13.0	3.41	14.7	1.36	7.94	1.02	6.37	14.8
		0' to 1' BGS (SS100)	95% UCL	0.748	15.7	12.0	49.5	1.05	0.559	2.27	4.20	4.68	6.86	4.08	2.66	5.94	3.50	6.75	1.39	4.78	1.05	3.11	6.78
		1' to 2' BGS (SS200)	95% UCL	0.778	17.9	12.0	55.5	1.02	0.548	2.23	2.23	2.23	3.43	3.43	2.23	2.23	3.43	2.23	1.37	3.43	1.02	3.43	3.43
58	APN 32439031	Surface (SS00)	95% UCL	0.766	17.3	64.4	54.8	125	368	855	5,040	6,590	8,820	4,680	3,510	7,070	1,030	8,860	166	4,510	451	4,400	8,590
		0' to 1' BGS (SS100)	95% UCL	0.799	17.2	16.9	52.1	58.0	214	955	4,630	6,360	8,340	4,390	3,200	6,360	962	8,490	133	4,780	200	4,210	8,290
		1' to 2' BGS (SS200)	95% UCL	0.756	15.7	28.0	51.5	51.9	113	582	2,500	2,190	3,020	1,340	1,170	2,670	339	5790	42.3	1,580	182	3,620	4,660
		2' to 3' BGS (SS300)	95% UCL	0.741	17.9	18.6	58.8	11.6	35	187	908	909	1,350	723	467	1,160	238	1670	21.1	835	47.8	780	1,630
		3' to 4' BGS (SS400)	95% UCL	0.745	16.9	17.7	59.0	60.5	226	377	2,580	3,190	3,860	1,990	1,490	3,650	512	3920	56.7	2,390	163	1,590	4,900
		4' to 5' BGS (SS500)	95% UCL	0.758	10.4	8.91	38.1	30.0	74.6	85.3	554	481	487	436	340	633	130	577	25.0	485	86.9	336	704
		5' to 6' BGS (SS600)	95% UCL	0.748	8.97	8.09	36.4	1.57	1.07	2.90	27.4	35.6	44.6	30.8	19.6	38.5	5.18	43.5	1.32	32.0	2.99	19.9	44.3

TABLE 6-5
SUMMARY OF 95% UCL CONCENTRATIONS FOR PAHs AND METALS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	Analyte			Metals				Polycyclic Aromatic Hydrocarbons (PAHs)															
				Antimony	Copper	Lead	Zinc	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Units			mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
59	APN 32439036	Surface (SS00)	95% UCL	0.800	65.7	11.1	48.1	3.40	10.7	36.8	36.8	252	342	161	142	361	45.1	429	5.28	171	6.25	196	432
		0' to 1' BGS (SS100)	95% UCL	0.760	18.9	9.95	38.7	11.1	36.3	258	1120	1,260	1,600	887	621	1,280	156	2,540	21.1	985	41.8	1,300	2,170
		1' to 2' BGS (SS200)	95% UCL	0.760	19.5	39.6	34.9	10.3	34.5	94.2	450	480	630	273	258	544	74.1	813	19.0	280	35.8	425	824
60	APN 32439037	Surface (SS00)	95% UCL	0.740	45.3	8.83	36.9	5.09	3.72	9.47	74.9	96.8	113	63.9	40.9	101	17.8	102	7.98	65.0	4.47	47.2	111
		0' to 1' BGS (SS100)	95% UCL	0.750	12.0	8.29	30.0	88.1	273	446	2,870	3,610	4,310	2140	1,930	4,110	745	4130	110	2,490	255	1,850	4,720
		1' to 2' BGS (SS200)	95% UCL	0.740	10.7	8.01	33.3	3.48	10.5	37.5	274	349	411	245	185	369	74.4	409	2.34	283	5.47	195	446

Abbreviations and Notes:

* Samples had rejected data, however skeet was observed in surface and/or subsurface. No additional samples were collected, and UCL was calcualted for reporting purposes.

95% UCLs were calculated using chebyshev distribution.

µg/kg - micrograms per kilogram

BGS - below ground surface

mg/kg - milligrams per kilogram

PAH - Polycyclic Aromatic Hydrocarbons

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
							Units	mg/kg			
1	31021063*	--	E Thompson Ave	4/2/2019	MRS03-APN31021063-SS001	0	mg/kg	7.08 R	12.4 J	16.9 J	44.6 J
					MRS03-APN31021063-SS002	0	mg/kg	7.34 R	13.0 J	16.4 J	46.8 J
					MRS03-APN31021063-SS003	0	mg/kg	7.39 R	13.5 J	24.2 J	47.0 J
					MRS03-APN31021063-SS1001	1	mg/kg	7.25 U	14.3	15.1	47.2
					MRS03-APN31021063-SS1002	1	mg/kg	7.00 U	13.1	63.4	44.6
					MRS03-APN31021063-SS1003	1	mg/kg	7.35 U	14.6	13.7	54.2
					MRS03-APN31021063-SS2001	2	mg/kg	7.04 U	14.7	10.9	53.3
					MRS03-APN31021063-SS2002	2	mg/kg	7.23 U	15.3	11.3	55.2
					MRS03-APN31021063-SS2003	2	mg/kg	7.32 U	15.8	11.8	56.4
2	31021078	--	E Thompson Ave	3/28/2019	MRS03-APN31021078-SS001	0	mg/kg	6.98 U	23.3 U	39.80	64.70
					MRS03-APN31021078-SS002	0	mg/kg	6.86 U	22.9 U	37.50	62.90
					MRS03-APN31021078-SS003	0	mg/kg	6.89 U	23.0 U	71.70	63.30
					MRS03-APN31021078-SS1001	1	mg/kg	7.47 UJ	24.9 U	35.7 J	67.4 J
					MRS03-APN31021078-SS1002	1	mg/kg	6.99 UJ	23.3 U	26.3 J	63.0 J
					MRS03-APN31021078-SS1003	1	mg/kg	7.33 UJ	24.4 U	43.2 J	63.6 J
					MRS03-APN31021078-SS2001	2	mg/kg	7.26 U	24.2 U	15.40	70.30
					MRS03-APN31021078-SS2002	2	mg/kg	7.47 U	24.9 U	14.40	72.30
					MRS03-APN31021078-SS2003	2	mg/kg	7.08 U	23.6 U	14.80	72.00
3	31021080	--	E Thompson Ave	5/7/2019	MRS03-APN31021080-SS001	0	mg/kg	1.44 UJ	7.09 UJ	6.99 J	26.1 J
					MRS03-APN31021080-SS002	0	mg/kg	1.46 UJ	8.10 UJ	7.26 J	27.4 J
					MRS03-APN31021080-SS003	0	mg/kg	1.46 UJ	7.77 UJ	7.18 J	26.5 J
					MRS03-APN31021080-SS1001	1	mg/kg	1.50 UJ	9.39 J	8.03 J	32.9 J
					MRS03-APN31021080-SS1002	1	mg/kg	1.42 UJ	10.0 J	8.68 J	33.9 J
					MRS03-APN31021080-SS1003	1	mg/kg	1.47 UJ	9.53 J	15.5 J	32.9 J
					MRS03-APN31021080-SS2001	2	mg/kg	1.40 UJ	9.94 J	7.87 J	33.5 J
					MRS03-APN31021080-SS2002	2	mg/kg	1.46 UJ	9.81 J	7.85 J	34.0 J
					MRS03-APN31021080-SS2003	2	mg/kg	1.46 UJ	10.5 J	9.48 J	35.2 J
3	31021080A*	--	E Thompson Ave	5/22/2019	MRS03-APN31021080-SS001A	0	mg/kg	1.46 U	34.3	157	76.8
					MRS03-APN31021080-SS002A	0	mg/kg	1.49 U	189	74	249
					MRS03-APN31021080-SS003A	0	mg/kg	1.44 U	123	50.8	118
					MRS03-APN31021080-SS1001A	1	mg/kg	1.46 UJ	181	87.8 J	210
					MRS03-APN31021080-SS1002A	1	mg/kg	1.46 UJ	238 J	125 J	283
					MRS03-APN31021080-SS1003A	1	mg/kg	1.40 UJ	72.2	93.9 J	110
					MRS03-APN31021080-SS2001A	2	mg/kg	1.47 U	25.9	21.7	56.1
					MRS03-APN31021080-SS2002A	2	mg/kg	1.45 U	12.7	41	43.7
					MRS03-APN31021080-SS2003A	2	mg/kg	1.41 U	13.8	11.3	44.5
3	31021080B*	--	E Thompson Ave	5/23/2019	MRS03-APN31021080-SS001B	0	mg/kg	1.46 UJ	35.2 J	26.9 J	47.9 J
					MRS03-APN31021080-SS002B	0	mg/kg	1.39 UJ	18.0 J	12.9 J	45.9 J
					MRS03-APN31021080-SS003B	0	mg/kg	1.48 UJ	12.7 J	20.0 J	46.1 J
					MRS03-APN31021080-SS1001B	1	mg/kg	1.49 UJ	11.7 J	8.30 J	41.7 J
					MRS03-APN31021080-SS1002B	1	mg/kg	1.38 UJ	15.5 J	9.77 J	41.2 J
					MRS03-APN31021080-SS1003B	1	mg/kg	1.39 UJ	8.89 J	11.5 J	34.5 J
					MRS03-APN31021080-SS2001B	2	mg/kg	1.47 UJ	10.1 J	7.62 J	37.4 J
					MRS03-APN31021080-SS2002B	2	mg/kg	1.45 UJ	8.48 J	6.78 J	32.1 J
					MRS03-APN31021080-SS2003B	2	mg/kg	1.45 UJ	7.80 J	7.76 J	27.6 J
4	31038002	4015	E Thompson Ave	3/21/2019	MRS03-APN31038002-SS001	0	mg/kg	1.45 U	12	12.8	42.7
					MRS03-APN31038002-SS002	0	mg/kg	1.42 U	12.1	12.5	42.3
					MRS03-APN31038002-SS003	0	mg/kg	1.45 U	11.4	49.2	54.8
					MRS03-APN31038002-SS1001	1	mg/kg	1.37 UJ	11.8	29.7 J	41
					MRS03-APN31038002-SS1002	1	mg/kg	1.46 UJ	14	11.9 J	45.1
					MRS03-APN31038002-SS1003	1	mg/kg	7.10 UJ	14.2	11.5 J	52.6
					MRS03-APN31038002-SS2001	2	mg/kg	1.43 U	12	10.3	40.9
					MRS03-APN31038002-SS2002	2	mg/kg	1.37 U	11.8	10.2	40.6
					MRS03-APN31038002-SS2003	2	mg/kg	1.43 U	14.8	11	47.7
5	32404206A	3910	E. Devlin Avenue	4/4/2019	MRS03-APN32404206A-SS001	0	mg/kg	7.32 U	13.80	85.00	75.10
					MRS03-APN32404206A-SS002	0	mg/kg	7.36 U	13.60	66.70	73.40
					MRS03-APN32404206A-SS003	0	mg/kg	6.85 U	13.50	92.20	73.40
					MRS03-APN32404206A-SS1001	1	mg/kg	7.49 UJ	14.9 J	44.0 J	53.4 J
					MRS03-APN32404206A-SS1002	1	mg/kg	6.89 UJ	13.9 J	30.5 J	49.4 J
					MRS03-APN32404206A-SS1003	1	mg/kg	7.50 UJ	14.5 J	65.8 J	51.5 J
					MRS03-APN32404206A-SS2001	2	mg/kg	7.40 U	15.00	13.00	50.80
					MRS03-APN32404206A-SS2002	2	mg/kg	6.82 U	13.80	10.10	47.30
					MRS03-APN32404206A-SS2003	2	mg/kg	7.03 U	13.50	12.40	45.90

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
6	32404208A	3900	E. Devlin Avenue	3/7/2019	MRS03-APN32404208A-SS001	0	mg/kg	1.43 UJ	142	25.8 J	76.5 J
					MRS03-APN32404208A-SS002	0	mg/kg	1.40 UJ	142	26.5 J	77.1 J
					MRS03-APN32404208A-SS003	0	mg/kg	1.38 UJ	74.6	29.3 J	72.6 J
					MRS03-APN32404208A-SS1001	1	mg/kg	1.46 U	15.3 U	29.3	52.8
					MRS03-APN32404208A-SS1002	1	mg/kg	1.48 U	19.4 U	25.5	58.2
					MRS03-APN32404208A-SS1003	1	mg/kg	0.961 J	20.8 U	49	53.8
					MRS03-APN32404208A-SS2001	2	mg/kg	1.42 U	15.4 U	12.9	51.1
					MRS03-APN32404208A-SS2002	2	mg/kg	0.694 J	15.9 U	13.9	52.1
					MRS03-APN32404208A-SS2003	2	mg/kg	1.40 U	15.7 U	12.2	50.7
7	32404211C	3879	E. Shaeffer Ave	10/22/2019	MRS03-APN32404211C-SS001	0	mg/kg	1.47 UJ	18.5	77.8	79.1
					MRS03-APN32404211C-SS002	0	mg/kg	1.49 UJ	17.4	14.1	58.9
					MRS03-APN32404211C-SS003	0	mg/kg	1.41 UJ	15.5	39.8	78
					MRS03-APN32404211C-SS1001	1	mg/kg	1.47 UJ	16.5 J	84.3 J	60.0 J
					MRS03-APN32404211C-SS1002	1	mg/kg	1.47 UJ	15.8	27.5	56.9
					MRS03-APN32404211C-SS1003	1	mg/kg	1.40 UJ	17	64.1	59.4
					MRS03-APN32404211C-SS2001	2	mg/kg	1.46 UJ	16.1	27.8	55
					MRS03-APN32404211C-SS2002	2	mg/kg	1.45 UJ	15.6	26.1	70
					MRS03-APN32404211C-S2003	2	mg/kg	1.49 UJ	17.3	13	58.1
8	32404213	3887	E Shaeffer Ave	5/15/2019	MRS03-APN32404213-SS001	0	mg/kg	1.38 UJ	23.2 J	44.5 J	92.2 J
					MRS03-APN32404213-SS002	0	mg/kg	1.49 UJ	23.6 J	36.2 J	94.1 J
					MRS03-APN32404213-SS003	0	mg/kg	1.43 UJ	24.8 J	39.9 J	94.0 J
9	32404241	3846	E Devlin Ave	2/6/2019	MRS03-APN32404241-SS001	0	mg/kg	7.34 U	9.85 J	11.8	72.0
					MRS03-APN32404241-SS002	0	mg/kg	7.39 U	10.1 J	13.8	63.5
					MRS03-APN32404241-SS003	0	mg/kg	7.46 U	9.94 J	12.3	68.0
					MRS03-APN32404241-SS1001	1	mg/kg	7.14 U	9.49 J	8.98	35.5
					MRS03-APN32404241-SS1002	1	mg/kg	7.27 U	9.10 J	9.2	37.4
					MRS03-APN32404241-SS1003	1	mg/kg	1.48 U	10.4 J	9.42	37.4
					MRS03-APN32404241-SS2001	2	mg/kg	1.46 U	9.24 J	7.71 J	33.7
					MRS03-APN32404241-SS2002	2	mg/kg	1.42 U	9.75 J	7.78 J	35.1
					MRS03-APN32404241-SS2003	2	mg/kg	1.48 U	9.84 J	8.01 J	35.2
10	32404242*	3842	E Devlin Ave	2/5/2019	MRS03-APN32404242-SS001	0	mg/kg	1.41 U	19.1 J	58.3	72.6
					MRS03-APN32404242-SS002	0	mg/kg	1.48 U	13.9 J	42.2	70.1
					MRS03-APN32404242-SS003	0	mg/kg	1.48 U	32.9	22.8	69.0
					MRS03-APN32404242-SS1001	1	mg/kg	1.48 R	10.4 J	9.28	38.3 J
					MRS03-APN32404242-SS1002	1	mg/kg	1.49 R	15.4 J	9.09	36.0 J
					MRS03-APN32404242-SS1003	1	mg/kg	1.43 R	10.2 J	9.58	39.2 J
					MRS03-APN32404242-SS2001	2	mg/kg	1.48 U	9.30 J	8.03 J	33.4
					MRS03-APN32404242-SS2002	2	mg/kg	1.47 U	9.50 J	7.75 J	34.2
					MRS03-APN32404242-SS2003	2	mg/kg	1.43 U	9.46 J	8.09 J	34.9
11	32404277A	3825	E. Shaeffer Ave	10/17/2019	MRS03-APN32405277A-SS001	0	mg/kg	1.47 U	16.5	46.2	72.9
					MRS03-APN32405277A-SS002	0	mg/kg	1.46 U	15.9	60.5	73.1
					MRS03-APN32405277A-SS003	0	mg/kg	1.41 U	22.8	75.6	75.9
12	32404279	3841	E Shaeffer Ave	2/26/2019	MRS03-APN32404279-SS001	0	mg/kg	1.44 U	9.76 J	12.0	41.2
					MRS03-APN32404279-SS002	0	mg/kg	1.38 U	8.99 J	9.95	37.8
					MRS03-APN32404279-SS003	0	mg/kg	1.47 U	9.58 J	10.4 J	39.0
13	32404280	3845	E Shaeffer Ave	2/27/2019	MRS03-APN32404280-SS001	0	mg/kg	1.50 UJ	10.5 J	12.0 J	44.6 J
					MRS03-APN32404280-SS002	0	mg/kg	1.48 UJ	10.2 J	11.2 J	42.1 J
					MRS03-APN32404280-SS003	0	mg/kg	1.46 UJ	9.90 J	10.5 J	41.3 J
					MRS03-APN32404280-SS1001	1	mg/kg	1.43 U	11.4 J	10.80	41.90
					MRS03-APN32404280-SS1002	1	mg/kg	1.46 U	11.1 J	9.25 J	40.80
					MRS03-APN32404280-SS1003	1	mg/kg	1.38 U	11.2 J	9.08 J	42.00
					MRS03-APN32404280-SS2001	2	mg/kg	1.50 U	11.2 J	8.05 J	41.00
					MRS03-APN32404280-SS2002	2	mg/kg	1.44 U	11.1 J	8.00 J	40.80
					MRS03-APN32404280-SS2003	2	mg/kg	1.46 U	11.3 J	8.20 J	41.30
14	32404487	3846	E Hearne Ave	3/6/2019	MRS03-APN32404487-SS001	0	mg/kg	1.40 UJ	13.0 J	13.4 J	83.1 J
					MRS03-APN32404487-SS002	0	mg/kg	1.41 UJ	12.9 J	13.3 J	92.7 J
					MRS03-APN32404487-SS003	0	mg/kg	1.45 UJ	33.3 J	12.6 J	91.6 J
15	32404526	3845	E Devlin Ave	2/8/2019	MRS03-APN32404526-SS001	0	mg/kg	7.38 U	24.6 U	12.6 U	65.8
					MRS03-APN32404526-SS002	0	mg/kg	7.49 U	25.0 U	13.2	67.3
					MRS03-APN32404526-SS003	0	mg/kg	7.40 U	24.7 U	12.3 U	63.6
					MRS03-APN32404526-SS1001	1	mg/kg	7.35 U	24.5 U	11.2 U	45.2
					MRS03-APN32404526-SS1002	1	mg/kg	7.20 U	24.0 U	11.3 U	45.8
					MRS03-APN32404526-SS1003	1	mg/kg	7.40 U	24.7 U	11.1 U	44.6
					MRS03-APN32404526-SS2001	2	mg/kg	7.46 U	24.9 U	9.24 U	43.5
					MRS03-APN32404526-SS2002	2	mg/kg	7.41 U	24.7 U	10.1 U	44.2
					MRS03-APN32404526-SS2003	2	mg/kg	7.06 U	23.5 U	9.93 U	46.9

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
16	32404527	3849	E Devlin Ave	2/19/2019	MRS03-APN32404527-SS001	0	mg/kg	1.49 U	7.51 UJ	8.52	32.9
					MRS03-APN32404527-SS002	0	mg/kg	1.48 U	9.26 J	10.2	40.1
					MRS03-APN32404527-SS003	0	mg/kg	1.36 U	9.69 J	10.9	44.7
					MRS03-APN32404527-SS1001	1	mg/kg	1.49 U	11.1 J	11.5	38.8
					MRS03-APN32404527-SS1002	1	mg/kg	1.48 U	11.3 J	10.7	38.3
					MRS03-APN32404527-SS1003	1	mg/kg	1.47 U	11.2 J	11.9	40.5
					MRS03-APN32404527-SS2001	2	mg/kg	1.44 U	12.1 J	8.61	39.2
					MRS03-APN32404527-SS2002	2	mg/kg	1.48 U	12.6 J	9.05	41.2
					MRS03-APN32404527-SS2003	2	mg/kg	1.37 U	10.5 J	7.92	35.1
17	32404550*	3960	E Hearne Ave	2/19/2019	MRS03-APN32404550-SS001	0	mg/kg	1.39 UJ	16.1 J	25.0	94.8
					MRS03-APN32404550-SS002	0	mg/kg	1.37 UJ	15.4 J	21.7	96.8
					MRS03-APN32404550-SS003	0	mg/kg	1.49 UJ	16.4 J	21.5	93.2
					MRS03-APN32404550-SS1001	1	mg/kg	1.43 R	14.1 J	15.8 J	50.3 J
					MRS03-APN32404550-SS1002	1	mg/kg	1.47 R	13.2 J	16.3 J	45.6 J
					MRS03-APN32404550-SS1003	1	mg/kg	1.46 R	13.7 J	18.0 J	47.7 J
					MRS03-APN32404550-SS2001	2	mg/kg	1.37 UJ	14.5 J	9.99	44.7
					MRS03-APN32404550-SS2002	2	mg/kg	1.40 UJ	13.0 J	9.51	40.9
					MRS03-APN32404550-SS2003	2	mg/kg	1.39 UJ	12.6 J	9.18	40.5
18	32404552A	3950	E Hearne Ave	2/7/2019	MRS03-APN32404552A-SS001	0	mg/kg	6.91 UJ	23.0 U	17.2	74.3
					MRS03-APN32404552A-SS002	0	mg/kg	7.43 UJ	24.8 U	28.6	85.1
					MRS03-APN32404552A-SS003	0	mg/kg	7.02 UJ	23.4 U	17.3	84.0
					MRS03-APN32404552A-SS1001	1	mg/kg	7.20 U	24.0 U	17.2	62.5
					MRS03-APN32404552A-SS1002	1	mg/kg	7.29 U	24.3 U	15.1	63.1
					MRS03-APN32404552A-SS1003	1	mg/kg	6.94 U	23.1 U	16.2	59.7
					MRS03-APN32404552A-SS2001	2	mg/kg	7.04 U	23.5 U	13.4	58.7
					MRS03-APN32404552A-SS2002	2	mg/kg	7.10 U	23.7 U	13.0	58.8
					MRS03-APN32404552A-SS2003	2	mg/kg	7.46 U	24.9 U	14.1	64.3
19	32404553	3946	E. Hearne Ave	1/31/2019	MRS03-APN32404553-SS001	0	mg/kg	1.47 U	10.5 J	21.0	75.6
					MRS03-APN32404553-SS002	0	mg/kg	1.45 U	11.0 J	26.3	82.0
					MRS03-APN32404553-SS003	0	mg/kg	1.44 U	10.4 J	18.1	70.8
					MRS03-APN32404553-SS1001	1	mg/kg	1.38 UJ	9.97 J	12.8	39.3 J
					MRS03-APN32404553-SS1002	1	mg/kg	1.43 UJ	10.1 J	15.3	42.6 J
					MRS03-APN32404553-SS1003	1	mg/kg	1.47 UJ	10.3 J	14.9	41.5 J
					MRS03-APN32404553-SS2001	2	mg/kg	1.49 U	9.96 J	8.23 J	35.4
					MRS03-APN32404553-SS2002	2	mg/kg	1.45 U	10.4 J	8.90 J	37.8
					MRS03-APN32404553-SS2003	2	mg/kg	1.46 U	10.2 J	8.40 J	35.9
20	32404556A	3922	E. Hearne Ave	1/24/2019	MRS03-APN32404556A-SS001	0	mg/kg	1.49 UJ	34.8 J	41.1 J	102 J
					MRS03-APN32404556A-SS002	0	mg/kg	1.41 UJ	188 J	36.6 J	103 J
					MRS03-APN32404556A-SS003	0	mg/kg	1.45 UJ	152 J	37.8 J	97.5 J
21	32404578	3925	E. Devlin Avenue	10/25/2019	MRS03-APN32404578-SS001	0	mg/kg	1.37 UJ	18.9	47.5	132
					MRS03-APN32404578-SS002	0	mg/kg	1.47 UJ	19.3	45.7	123
					MRS03-APN32404578-SS003	0	mg/kg	1.45 UJ	19.7	53.9	126
22	32404582	3945	E. Devlin Avenue	10/23/2019	MRS03-APN32404582-SS001	0	mg/kg	1.43 UJ	16.6	18.3	96.8
					MRS03-APN32404582-SS002	0	mg/kg	1.44 UJ	16.1	15.4	110
					MRS03-APN32404582-SS003	0	mg/kg	1.44 UJ	15.2	18.9	102
					MRS03-APN32404582-SS1001	1	mg/kg	1.45 UJ	13.3	18.1	59.6
					MRS03-APN32404582-SS1002	1	mg/kg	1.42 UJ	14	16.4	62.4
					MRS03-APN32404582-SS1003	1	mg/kg	1.40 UJ	35.2	18.9	53.8
					MRS03-APN32404582-SS2001	2	mg/kg	1.45 UJ	13.4	10.5	49.5
					MRS03-APN32404582-SS2002	2	mg/kg	1.44 UJ	14.4	11.3	53.6
					MRS03-APN32404582-SS2003	2	mg/kg	1.47 UJ	19.8	10.7	49.2
23	32404624	3996	E Ryan Ave	4/16/2019	MRS03-APN32404624-SS001R	0	mg/kg	1.42 UJ	15.5 J	14.1 J	63.3 J
					MRS03-APN32404624-SS002R	0	mg/kg	1.49 UJ	15.7 J	13.5 J	69.0 J
					MRS03-APN32404624-SS003R	0	mg/kg	1.44 UJ	23.8 J	13.0 J	63.3 J
					MRS03-APN32404624-SS1001R	1	mg/kg	1.42 UJ	16.3 J	11.0 J	54.6 J
					MRS03-APN32404624-SS1002R	1	mg/kg	1.49 UJ	16.8 J	11.4 J	58.1 J
					MRS03-APN32404624-SS1003R	1	mg/kg	1.45 UJ	17.0 J	11.2 J	55.7 J
					MRS03-APN32404624-SS2001R	2	mg/kg	1.47 UJ	16.8 J	11.2 J	56.9 J
					MRS03-APN32404624-SS2002R	2	mg/kg	1.42 UJ	16.0 J	10.4 J	53.8 J
					MRS03-APN32404624-SS2003R	2	mg/kg	1.39 UJ	16.0 J	10.4 J	52.9 J

TABLE 6-6

SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
24	32404625	3990	E Ryan Ave	4/16/2019	MRS03-APN32404625-SS001R	0	mg/kg	1.96 UJ	13.1 J	54.9 J	51.2 J
					MRS03-APN32404625-SS002R	0	mg/kg	1.40 UJ	13.0 J	12.3 J	50.5 J
					MRS03-APN32404625-SS003R	0	mg/kg	1.41 UJ	16.3 J	12.4 J	50.4 J
					MRS03-APN32404625-SS1001R	1	mg/kg	1.45 UJ	14.4 J	10.8 J	50.5 J
					MRS03-APN32404625-SS1002R	1	mg/kg	1.39 UJ	15.3 J	11.1 J	51.7 J
					MRS03-APN32404625-SS1003R	1	mg/kg	1.47 UJ	16.2 J	12.5 J	54.2 J
					MRS03-APN32404625-SS2001R	2	mg/kg	1.43 UJ	15.5 J	10.3 J	52.1 J
					MRS03-APN32404625-SS2002R	2	mg/kg	1.37 UJ	14.8 J	9.85 J	51.0 J
					MRS03-APN32404625-SS2003R	2	mg/kg	1.46 UJ	15.8 J	10.4 J	53.5 J
25	32404629A	3996	E. Ryan Ave	3/26/2019	MRS03-APN32404629A-SS001	0	mg/kg	1.49 UJ	16.2	33.9 J	113 J
					MRS03-APN32404629A-SS002	0	mg/kg	1.48 UJ	17	70.9 J	91.5 J
					MRS03-APN32404629A-SS003	0	mg/kg	1.08 J	12.8	291 J	91.7 J
					MRS03-APN32404629A-SS1001	1	mg/kg	1.50 UJ	12.8	26.8	57
					MRS03-APN32404629A-SS1002	1	mg/kg	1.40 UJ	13.4	44.5	66.4
					MRS03-APN32404629A-SS1003	1	mg/kg	1.37 UJ	14.7	27.5	79.3
					MRS03-APN32404629A-SS2001	2	mg/kg	1.40 UJ	11.8	13.7	45.2
					MRS03-APN32404629A-SS2002	2	mg/kg	1.42 UJ	11.9	9.54	42.6
					MRS03-APN32404629A-SS2003	2	mg/kg	1.49 UJ	12.1	13.7	46.3
26	32404631B	3960	E. Ryan Ave	5/30/2019	MRS03-APN32404631B-SS001	0	mg/kg	1.46 U	15.0 J	23.6 J	79.3 J
					MRS03-APN32404631B-SS002	0	mg/kg	1.48 U	14.7 J	21.6 J	77.2 J
					MRS03-APN32404631B-SS003	0	mg/kg	1.45 U	13.0 J	19.5 J	73.4 J
27	32404638	3920	E. Ryan Ave	2/28/2019	MRS03-APN32404638-SS001	0	mg/kg	1.40 UJ	20.2 J	42.6 J	146
					MRS03-APN32404638-SS002	0	mg/kg	1.46 UJ	24.5 J	38.9 J	145
					MRS03-APN32404638-SS003	0	mg/kg	1.43 UJ	60.6 J	33.6 J	150
				3/1/2019	MRS03-APN32404638-SS1001	1	mg/kg	1.48 UJ	14.1 J	15.8	50.3
					MRS03-APN32404638-SS1002	1	mg/kg	1.45 UJ	13.5 J	28.1	46.5
					MRS03-APN32404638-SS1003	1	mg/kg	1.45 UJ	14.6 J	17.9	51
					MRS03-APN32404638-SS2001	2	mg/kg	1.45 UJ	13.2 J	9.63	45.3
					MRS03-APN32404638-SS2002	2	mg/kg	1.42 UJ	14.0 J	9.68	46.7
					MRS03-APN32404638-SS2003	2	mg/kg	1.48 UJ	14.1 J	9.89	47
28	32404639	3916	E. Ryan Ave	4/5/2019	MRS03-APN32404639-SS1001	1	mg/kg	1.50 U	14.3	24.4	48.4
					MRS03-APN32404639-SS1002	1	mg/kg	1.45 U	14.3	15.7	47.1
					MRS03-APN32404639-SS1003	1	mg/kg	1.44 U	13.9	18	48.2
					MRS03-APN32404639-SS2001	2	mg/kg	1.46 U	14.2	10.6	48.1
					MRS03-APN32404639-SS2002	2	mg/kg	1.48 U	14.2	11.3	48.8
					MRS03-APN32404639-SS2003	2	mg/kg	1.46 U	14.3	11.7	47.7
29	32404640	3910	E. Ryan Ave	3/29/2019	MRS03-APN32404640-SS1001	1	mg/kg	6.95 U	23.2 U	24.0	47.4
					MRS03-APN32404640-SS1002	1	mg/kg	6.97 U	23.2 U	25.8	57
				4/1/2019	MRS03-APN32404640-SS1003	1	mg/kg	7.06 U	23.5 U	28.6	60.6
				3/29/2019	MRS03-APN32404640-SS2001	2	mg/kg	7.23 U	24.1 U	11.9	61.9
					MRS03-APN32404640-SS2002	2	mg/kg	6.96 U	23.2 U	11.5	60
				4/1/2019	MRS03-APN32404640-SS2003	2	mg/kg	7.05 U	23.5 U	10.8	57.4
				3/29/2019	MRS03-APN32404640-SS3001	3	mg/kg	6.89 UJ	23.0 U	7.92 J	34.6
					MRS03-APN32404640-SS3002	3	mg/kg	6.98 UJ	23.3 U	8.68 J	37
				4/1/2019	MRS03-APN32404640-SS3003	3	mg/kg	7.14 U	23.8 U	8.63	37.1
				3/29/2019	MRS03-APN32404640-SS4001	4	mg/kg	6.94 U	7.62	7.29	29.5
					MRS03-APN32404640-SS4002	4	mg/kg	7.46 U	7.76	7.31	30.2
				4/1/2019	MRS03-APN32404640-SS4003	4	mg/kg	6.85 U	7.85	7.47	30.6
30	32404656	3915	E. Hearne Ave	1/25/2019	MRS03-APN32404656-SS001	0	mg/kg	1.41 U	15.3 J	15.9	91.4
					MRS03-APN32404656-SS002	0	mg/kg	1.42 U	15.5 J	16.0	82.9
					MRS03-APN32404656-SS003	0	mg/kg	1.41 U	15.2 J	15.4	83.5
31	32404658	3925	E. Hearne Ave	1/29/2019	MRS03-APN32404658-SS001	0	mg/kg	7.29 U	24.3 U	81.2	75.0
					MRS03-APN32404658-SS002	0	mg/kg	7.33 U	24.4 U	94.4	70.4
					MRS03-APN32404658-SS003	0	mg/kg	7.35 U	3.92 U	76.7	7.35 U
					MRS03-APN32404658-SS1001	1	mg/kg	7.04 UJ	23.5 UJ	37.8 J	57.6 J
					MRS03-APN32404658-SS1002	1	mg/kg	7.50 UJ	25.0 UJ	60.3 J	105 J
					MRS03-APN32404658-SS1003	1	mg/kg	7.25 UJ	24.2 UJ	49.7 J	63.0 J
					MRS03-APN32404658-SS2001	2	mg/kg	7.13 U	23.8 U	14.5	45.5
					MRS03-APN32404658-SS2002	2	mg/kg	6.95 U	23.2 U	14.5	49.3
					MRS03-APN32404658-SS2003	2	mg/kg	7.04 U	23.5 U	15.2	49.4

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
32	32404659	3929	E. Hearne Ave	2/1/2019	MRS03-APN32404659-SS001	0	mg/kg	1.49 U	24.3 J	70.4	64.7
					MRS03-APN32404659-SS002	0	mg/kg	1.41 U	14.4 J	65.7	63.9
					MRS03-APN32404659-SS003	0	mg/kg	1.43 U	14.3 J	64.1	63.6
					MRS03-APN32404659-SS1001	1	mg/kg	1.41 U	15.1 J	56.4	48.7
					MRS03-APN32404659-SS1002	1	mg/kg	1.43 U	15.9 J	24.2	49.6
					MRS03-APN32404659-SS1003	1	mg/kg	1.47 U	15.3 J	41.5	48.8
					MRS03-APN32404659-SS2001	2	mg/kg	1.50 U	14.7 J	11.8	48.1
					MRS03-APN32404659-SS2002	2	mg/kg	1.47 U	14.4 J	11.4	46.9
					MRS03-APN32404659-SS2003	2	mg/kg	1.47 U	15.3 J	12.1	49.3
33	32404664	3955	E. Hearne Ave	10/16/2019	MRS03-APN32404664-SS001	0	mg/kg	1.38 UJ	13.6	16.8	86.2
					MRS03-APN32404664-SS002	0	mg/kg	1.47 UJ	13.4	15.1	83.5
					MRS03-APN32404664-SS003	0	mg/kg	1.43 UJ	13.6	15.9	85.7
34	32404665	3959	E. Hearne Ave	1/30/2019	MRS03-APN32404665-SS001	0	mg/kg	7.25 U	24.2 U	17.0	60.7
					MRS03-APN32404665-SS002	0	mg/kg	7.19 U	24.0 U	15.2	75.6
					MRS03-APN32404665-SS003	0	mg/kg	7.50 U	25.0 U	18.7	64.9
					MRS03-APN32404665-SS1001	1	mg/kg	7.26 U	24.2 U	16.4	44.8
					MRS03-APN32404665-SS1002	1	mg/kg	7.32 U	24.4 U	21.3	41.7
					MRS03-APN32404665-SS1003	1	mg/kg	7.20 U	24.0 U	22.8	45.7
					MRS03-APN32404665-SS2001	2	mg/kg	7.36 U	24.5 U	14.8	47.2
					MRS03-APN32404665-SS2002	2	mg/kg	7.50 U	25.0 U	15.6	41.5
					MRS03-APN32404665-SS2003	2	mg/kg	6.84 U	22.8 U	12.0	45.8
35	32404666	3971	E. Hearne Ave	2/28/2019	MRS03-APN32404666-SS001	0	mg/kg	1.47 U	13.9 J	16.1	90.2
					MRS03-APN32404666-SS002	0	mg/kg	1.46 U	23.9	16.2	97
					MRS03-APN32404666-SS003	0	mg/kg	1.39 U	30	19.1	82.1
					MRS03-APN32404666-SS1001	1	mg/kg	1.45 U	10.8 J	19.1	43.9
					MRS03-APN32404666-SS1002	1	mg/kg	1.47 U	11.4 J	14.9	46.7
					MRS03-APN32404666-SS1003	1	mg/kg	1.47 U	11.2 J	13.4	43.3
					MRS03-APN32404666-SS2001	2	mg/kg	1.49 U	11.0 J	10.4	38.5
					MRS03-APN32404666-SS2002	2	mg/kg	1.40 U	10.7 J	7.65	37.6
					MRS03-APN32404666-SS2003	2	mg/kg	1.49 U	11.4 J	8.7	40.2
36	32404688	3860	E. Ryan Ave	3/7/2019	MRS03-APN32404688-SS001	0	mg/kg	1.48 UJ	32.2 U	19.0 J	47.9
					MRS03-APN32404688-SS002	0	mg/kg	1.46 UJ	33.5 U	19.8 J	53
					MRS03-APN32404688-SS003	0	mg/kg	1.45 UJ	34.5 U	18.3 J	45.9
				3/8/2019	MRS03-APN32404688-SS1001	1	mg/kg	1.47 UJ	33.1 U	13.7 U	43.9 J
					MRS03-APN32404688-SS1002	1	mg/kg	1.38 UJ	32.0 U	13.2 U	39.1 J
					MRS03-APN32404688-SS1003	1	mg/kg	1.43 UJ	31.6 U	13.1 U	44.0 J
					MRS03-APN32404688-SS2001	2	mg/kg	1.45 UJ	33.4 U	13.8 U	51.6
					MRS03-APN32404688-SS2002	2	mg/kg	1.44 UJ	32.7 U	13.5 U	44
					MRS03-APN32404688-SS2003	2	mg/kg	2.90 UJ	33.9 U	14.1 U	51.7
37	32404727	3831	E. Hearne Avenue	10/29/2019	MRS03-APN32404727-SS001	0	mg/kg	1.37 UJ	20.2	12.5	77.2
					MRS03-APN32404727-SS002	0	mg/kg	1.47 UJ	20.7	12.7	82
					MRS03-APN32404727-SS003	0	mg/kg	1.42 UJ	25.2	11.3	75.5
38	32404730	3845	E. Hearne Ave	3/27/2019	MRS03-APN32404730-SS001	0	mg/kg	1.47 UJ	13.8	15.0 J	65.4 J
					MRS03-APN32404730-SS002	0	mg/kg	1.41 UJ	13.7	15.4 J	66.7 J
					MRS03-APN32404730-SS003	0	mg/kg	1.39 UJ	13.5	15.0 J	65.5 J
39	32405168	4010	E. Lum Ave	3/5/2019	MRS03-APN32405168-SS001	0	mg/kg	1.46 U	16	11.5	89.9
					MRS03-APN32405168-SS002	0	mg/kg	1.46 U	16.6	11.3	93.9
					MRS03-APN32405168-SS003	0	mg/kg	1.46 U	17.8	16.4	105
40	32405169	4004	E. Lum Ave	4/11/2019	MRS03-APN32405169-SS001R	0	mg/kg	1.42 UJ	11.9 J	13.3	46.1 J
					MRS03-APN32405169-SS002R	0	mg/kg	1.38 UJ	11.8 J	15.5	45.8 J
					MRS03-APN32405169-SS003R	0	mg/kg	1.41 UJ	11.7 J	12.9	44.5 J
				4/12/2019	MRS03-APN32405169-SS1001R	1	mg/kg	1.47 UJ	13.8 J	11.7	45.9 J
					MRS03-APN32405169-SS1002R	1	mg/kg	1.47 UJ	13.4 J	11.5	44.3 J
					MRS03-APN32405169-SS1003R	1	mg/kg	1.45 UJ	13.2 J	11.4	44.0 J
					MRS03-APN32405169-SS2001R	2	mg/kg	1.40 UJ	12.8 J	9.14	43.4 J
					MRS03-APN32405169-SS2002R	2	mg/kg	1.40 UJ	12.6 J	9.06	42.9 J
					MRS03-APN32405169-SS2003R	2	mg/kg	1.48 UJ	13.6 J	9.56	45.5 J
41	32405172*	3990	E. Lum Ave	1/22/2019	MRS03-APN32405172-SS001	0	mg/kg	1.49 U	13.9 J	13.5 J	66.6
					MRS03-APN32405172-SS002	0	mg/kg	1.38 U	14.1 J	28.7 J	69.5
					MRS03-APN32405172-SS003	0	mg/kg	1.46 U	15.2 J	21.2 J	106
					MRS03-APN32405172-SS1001	1	mg/kg	1.48 R	11.3 J	15.4 J	38.3 J
					MRS03-APN32405172-SS1002	1	mg/kg	1.43 R	11.4 J	13.7 J	39.2 J
					MRS03-APN32405172-SS1003	1	mg/kg	1.38 R	10.9 J	15.8 J	39.0 J
					MRS03-APN32405172-SS2001	2	mg/kg	1.47 U	10.7 J	8.62 J	37.3
					MRS03-APN32405172-SS2002	2	mg/kg	1.42 U	13.4 J	10.6 J	45.6
					MRS03-APN32405172-SS2003	2	mg/kg	1.39 U	13.6 J	10.9 J	45.9

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
42	32405174	3974	E. Lum Ave	5/9/2019	MRS03-APN32405174-SS001	0	mg/kg	1.49 U	12.7	19.3	71
					MRS03-APN32405174-SS002	0	mg/kg	1.49 U	12.8	19.1	79.5
					MRS03-APN32405174-SS003	0	mg/kg	1.39 U	13	21.3	75.4
					MRS03-APN32405174-SS1001	1	mg/kg	1.44 U	14.5	20.4	52.5
				5/10/2019	MRS03-APN32405174-SS1002	1	mg/kg	1.37	13.5	28.3	46
					MRS03-APN32405174-SS1003	1	mg/kg	1.38 UJ	13.2 J	28.2 J	47.3 J
				5/9/2019	MRS03-APN32405174-SS2001	2	mg/kg	1.43 U	16.2	11.6	52.2
				5/10/2019	MRS03-APN32405174-SS2002	2	mg/kg	1.37 U	14.7	10.9	48.2
					MRS03-APN32405174-SS2003	2	mg/kg	1.44 U	15.7	11.5	50.3
				10/24/2019	MRS03-APN32405174-SS3001	3	mg/kg	1.45 UJ	15.1	11.5	51.1
					MRS03-APN32405174-SS3002	3	mg/kg	1.48 UJ	11.8	9.36	40.1
					MRS03-APN32405174-SS3003	3	mg/kg	1.40 UJ	11.9	9.25	42
					MRS03-APN32405174-SS4001	4	mg/kg	1.47 UJ	10.3	8.49	36.9
					MRS03-APN32405174-SS4002	4	mg/kg	1.48 UJ	9.98	8.47	37
					MRS03-APN32405174-SS4003	4	mg/kg	1.43 UJ	12.6	9.63	44.5
43	32405176	3966	E. Lum Ave	1/18/2019	MRS03-APN32405176-SS001	0	mg/kg	1.99 UJ	13.2 J	25.5 J	71.8 J
					MRS03-APN32405176-SS002	0	mg/kg	1.46 UJ	15.7 J	27.9 J	73.3 J
					MRS03-APN32405176-SS003	0	mg/kg	1.47 UJ	15.1 J	26.9 J	74.5 J
					MRS03-APN32405176-SS1001	1	mg/kg	1.42 U	16.3	36.8	55.5
					MRS03-APN32405176-SS1002	1	mg/kg	1.45 U	15.6	32.9	52.5
					MRS03-APN32405176-SS1003	1	mg/kg	1.43 U	17.1	35.8	51.3
					MRS03-APN32405176-SS2001	2	mg/kg	1.42 U	23.7 U	15.5 U	58.5
					MRS03-APN32405176-SS2002	2	mg/kg	1.48 U	15.9	13.3 U	54.8
					MRS03-APN32405176-SS2003	2	mg/kg	1.39 U	23.1 U	16.3 U	63.7
44	32405177	3960	E. Lum Ave	1/15/2019	MRS03-APN32405177-SS001	0	mg/kg	1.43 U	12.1 J	21.1	53.0
					MRS03-APN32405177-SS002	0	mg/kg	1.38 U	10.8 J	20.5	46.8
					MRS03-APN32405177-SS003	0	mg/kg	1.42 U	10.6 J	19.9	45.9
					MRS03-APN32405177-SS1001	1	mg/kg	1.48 UJ	10.8 J	21.7 J	38.0 J
					MRS03-APN32405177-SS1002	1	mg/kg	1.41 UJ	10.3 J	19.9 J	33.9 J
					MRS03-APN32405177-SS1003	1	mg/kg	1.39 UJ	10.9 J	32.4 J	39.1 J
					MRS03-APN32405177-SS2001	2	mg/kg	1.47 U	12.3 J	9.91 J	37.8
					MRS03-APN32405177-SS2002	2	mg/kg	1.44 U	11.3 J	10.5 J	35.5
					MRS03-APN32405177-SS2003	2	mg/kg	1.49 U	12.2 J	15.0	38.8
45	32405178	3956	E. Lum Ave	1/16/2019	MRS03-APN32405178-SS001	0	mg/kg	1.48 U	11.1 J	49.4	42.3
					MRS03-APN32405178-SS002	0	mg/kg	1.49 U	11.2 J	50.8	40.4
					MRS03-APN32405178-SS003	0	mg/kg	1.44 U	11.7 J	64	43.2
					MRS03-APN32405178-SS1001	1	mg/kg	1.42 U	11.0 J	25.9	34.3
					MRS03-APN32405178-SS1002	1	mg/kg	1.39 U	10.7 J	32.4	34.1
					MRS03-APN32405178-SS1003	1	mg/kg	1.50 U	10.9 J	21.7	31
					MRS03-APN32405178-SS2001	2	mg/kg	1.43 U	11.1 J	11.7 J	29.5
					MRS03-APN32405178-SS2002	2	mg/kg	1.46 U	10.8 J	10.8 J	35.3
					MRS03-APN32405178-SS2003	2	mg/kg	1.42 U	10.6 J	8.58 J	34.8
46	32405206A	3929	E. Ryan Ave	4/4/2019	MRS03-APN32405206A-SS001	0	mg/kg	1.01 J	13.8 J	65.6 J	60.4 J
					MRS03-APN32405206A-SS002	0	mg/kg	1.44 UJ	13.7 J	20.6 J	63.2 J
					MRS03-APN32405206A-SS003	0	mg/kg	1.45 UJ	13.7 J	19.9 J	62.0 J
					MRS03-APN32405206A-SS1001	1	mg/kg	1.48 U	12.3	25.1	44.8
					MRS03-APN32405206A-SS1002	1	mg/kg	1.49 U	12.1	23.2	43.7
					MRS03-APN32405206A-SS1003	1	mg/kg	1.45 U	12	54.6	43.4
					MRS03-APN32405206A-SS2001	2	mg/kg	1.46 U	12.6	10.3	43.5
					MRS03-APN32405206A-SS2002	2	mg/kg	1.43 U	12.7	10.4	43.3
					MRS03-APN32405206A-SS2003	2	mg/kg	1.44 U	13.1	10.3	43.7
47	32405212*	3959	E. Ryan Ave	3/21/2019	MRS03-APN32405212-SS001	0	mg/kg	1.43 R	12.6	46.3 J	52.2 J
					MRS03-APN32405212-SS002	0	mg/kg	1.45 R	11.3	50.8 J	52.9 J
					MRS03-APN32405212-SS003	0	mg/kg	1.40 R	12.1	12.5 J	42.7 J
				3/22/2019	MRS03-APN32405212-SS1001	1	mg/kg	1.48 U	14.3	13.7	45.7
					MRS03-APN32405212-SS1002	1	mg/kg	1.42 U	11.3	40.2	41
					MRS03-APN32405212-SS1003	1	mg/kg	1.45 U	11.3	35.6	40.7
					MRS03-APN32405212-SS2001	2	mg/kg	1.50 U	14.9	24.3	48.6
					MRS03-APN32405212-SS2002	2	mg/kg	1.43 U	14.9	11.2	48.3
					MRS03-APN32405212-SS2003	2	mg/kg	1.42 U	11.8	9.91	40.8
48	32405218A	3991	E. Ryan Ave	5/30/2019	MRS03-APN32405218A-SS001	0	mg/kg	1.39 UJ	15.1 J	13.5 J	76.8 J
					MRS03-APN32405218A-SS002	0	mg/kg	1.47 UJ	14.3 J	11.3 J	71.1 J
					MRS03-APN32405218A-SS003	0	mg/kg	1.38 UJ	14.6 J	11.4 J	73.3 J

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
49	32405269	3986	E. Thompson Ave	10/18/2019	MRS03-APN32405269-SS001	0	mg/kg	6.96 U	38.2	13.1	58.7
					MRS03-APN32405269-SS002	0	mg/kg	6.94 U	33.6	12.7	58.6
					MRS03-APN32405269-SS003	0	mg/kg	1.49 UJ	25	8.48	56.6
					MRS03-APN32405269-S1001	1	mg/kg	1.46 UJ	16.6	9.54	46.3
					MRS03-APN32405269-SS1002	1	mg/kg	1.48 UJ	14.1	9.81 J	43.3 J
					MRS03-APN32405269-SS1003	1	mg/kg	1.37 UJ	13.6	11.6	41.8
					MRS03-APN32405269-SS2001	2	mg/kg	1.48 UJ	12.7	9.34	42.5
					MRS03-APN32405269-SS2002	2	mg/kg	1.49 UJ	12.3	9.12	41.5
					MRS03-APN32405269-SS2003	2	mg/kg	1.41 UJ	11.9	8.87	40.5
50	32405289	3886	E. Thompson Ave	3/19/2019	MRS03-APN32405289-SS001	0	mg/kg	1.48 UJ	16.3	27.9	89.7 J
					MRS03-APN32405289-SS002	0	mg/kg	1.39 UJ	15.5	26	89.9 J
					MRS03-APN32405289-SS003	0	mg/kg	1.40 UJ	17.7	32.5	111 J
					MRS03-APN32405289-SS1001	1	mg/kg	1.45 UJ	12	12.5	45
					MRS03-APN32405289-SS1002	1	mg/kg	1.47 UJ	13.2	25.2	58.6
					MRS03-APN32405289-SS1003	1	mg/kg	1.45 UJ	13.3	16.1	50.1
					MRS03-APN32405289-SS2001	2	mg/kg	1.40 UJ	13.7	10.5	49
					MRS03-APN32405289-SS2002	2	mg/kg	1.39 UJ	14	10.9	49.3
					MRS03-APN32405289-SS2003	2	mg/kg	1.39 UJ	13.7	10.6	48.6
51	32405290	3880	E. Thompson Ave	3/20/2019	MRS03-APN32405290-SS001	0	mg/kg	1.42 UJ	16.2	25	103
					MRS03-APN32405290-SS002	0	mg/kg	1.46 UJ	15.9	18.1	104
					MRS03-APN32405290-SS003	0	mg/kg	1.43 UJ	14.5	17.5	94.8
52	32436008*	3930	E. Lass Avenue	10/28/2019	MRS03-APN32436008-SS001	0	mg/kg	1.44 UJ	13.8	11.8	43
					MRS03-APN32436008-SS002	0	mg/kg	1.43 UJ	14.5	11.9	43.2
					MRS03-APN32436008-SS003	0	mg/kg	1.39 UJ	13.3	11.6	42.9
					MRS03-APN32436008-SS1001	1	mg/kg	1.40 UJ	13.7	11.4	42.4
					MRS03-APN32436008-SS1002	1	mg/kg	1.42 R	13.3	10.6 J	41.5 J
					MRS03-APN32436008-SS1003	1	mg/kg	1.41 UJ	13.7	11.2	42.1
					MRS03-APN32436008-SS2001	2	mg/kg	1.45 UJ	15.5	10.9	50.9
					MRS03-APN32436008-SS2002	2	mg/kg	1.41 UJ	15.6	10.9	51.2
					MRS03-APN32436008-SS2003	2	mg/kg	1.40 UJ	15.7	10.7	50.3
53	32436011	3942	E. Lass Ave	5/14/2019	MRS03-APN32436011-SS001	0	mg/kg	1.47 UJ	12.0 J	65.1 J	45.4 J
					MRS03-APN32436011-SS002	0	mg/kg	1.46 UJ	12.7 J	33.2 J	49.0 J
					MRS03-APN32436011-SS003	0	mg/kg	7.41 UJ	24.7 UJ	36.4 J	64.5 J
					MRS03-APN32436011-SS1001	1	mg/kg	1.48 UJ	11.6 J	17.3 J	39.8 J
					MRS03-APN32436011-SS1002	1	mg/kg	1.49 UJ	11.8 J	15.8 J	41.2 J
					MRS03-APN32436011-SS1003	1	mg/kg	1.50 UJ	12.6 J	15.4 J	48.0 J
					MRS03-APN32436011-SS2001	2	mg/kg	1.49 UJ	14.4 J	10.6 J	48.5 J
					MRS03-APN32436011-SS2002	2	mg/kg	1.46 UJ	14.9 J	10.4 J	48.9 J
					MRS03-APN32436011-SS2003	2	mg/kg	1.47 UJ	15.5 J	10.9 J	50.2 J
54	32436012*	3946	E. Lass Ave	5/21/2019	MRS03-APN32436012-SS001	0	mg/kg	1.43 U	21.7	14.3	50.2
					MRS03-APN32436012-SS002	0	mg/kg	1.44 U	26.1	48.6	44.3
					MRS03-APN32436012-SS003	0	mg/kg	1.50 U	21.7	13.6	44.8
					MRS03-APN32436012-SS1001	1	mg/kg	1.42 U	12.6	19.1	37.4
					MRS03-APN32436012-SS1002	1	mg/kg	1.47 U	16.9	13.8	42.1
					MRS03-APN32436012-SS1003	1	mg/kg	1.49 U	14.3	14.6	39
					MRS03-APN32436012-SS2001	2	mg/kg	1.44 U	12.5	13.6	41.6
					MRS03-APN32436012-SS2002	2	mg/kg	1.42 U	15	10.4	47
					MRS03-APN32436012-SS2003	2	mg/kg	1.47 U	13.1	11	41.5
				10/15/2019	MRS03-APN32436012-SS3001	3	mg/kg	1.45 U	12.1	9.84	43.7
					MRS03-APN32436012-SS3002	3	mg/kg	1.45 UJ	11.6	9.35	41.2 J
					MRS03-APN32436012-SS3003	3	mg/kg	1.47 U	10.1	8.57	37.6
					MRS03-APN32436012-SS4001	4	mg/kg	1.39 U	8.17	7.44	31
					MRS03-APN32436012-SS4002	4	mg/kg	1.50 U	8.89	7.9	32.4
					MRS03-APN32436012-SS4003	4	mg/kg	1.43 U	7.6	7.13	29.5

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
55	32436019	3974	E. Lass Ave	4/10/2019	MRS03-APN32436019-SS001	0	mg/kg	1.46 UJ	50.7 J	19.3	46.4
					MRS03-APN32436019-SS002	0	mg/kg	1.37 UJ	35.8 J	24.5	44.4
					MRS03-APN32436019-SS003	0	mg/kg	1.48 UJ	29.7 J	19.7 J	37.0 J
					MRS03-APN32436019-SS1001	1	mg/kg	1.39 UJ	13.6 J	53.7	44.0
					MRS03-APN32436019-SS1002	1	mg/kg	1.47 UJ	16.0 J	21.7	47.4
					MRS03-APN32436019-SS1003	1	mg/kg	1.37 UJ	14.2 J	21.2	42.9
					MRS03-APN32436019-SS2001	2	mg/kg	1.44 UJ	15.5 J	136	51.1
					MRS03-APN32436019-SS2002	2	mg/kg	1.42 UJ	15.8 J	55.1	53.0
					MRS03-APN32436019-SS2003	2	mg/kg	1.46 UJ	15.2 J	11.4	50.0
					MRS03-APN32436019-SS3001	3	mg/kg	1.50 UJ	12.2 J	9.59	44.1
					MRS03-APN32436019-SS3002	3	mg/kg	1.49 UJ	12.0 J	9.89	43.8
					MRS03-APN32436019-SS3003	3	mg/kg	1.40 UJ	11.3 J	9.34	41.0
					MRS03-APN32436019-SS4001	4	mg/kg	1.41 UJ	8.66 J	7.61	33.3
					MRS03-APN32436019-SS4002	4	mg/kg	1.45 UJ	8.57 J	7.46	34.2
					MRS03-APN32436019-SS4003	4	mg/kg	1.45 UJ	8.65 J	7.57	33.7
56	32436020*	3978	E. Lass Ave	5/8/2019	MRS03-APN32436020-SS001	0	mg/kg	1.49 U	13	18.4	38.7
					MRS03-APN32436020-SS002	0	mg/kg	0.148 U	1.38	4.18	4.04
					MRS03-APN32436020-SS003	0	mg/kg	1.48 U	14.1	23.1	41.3
					MRS03-APN32436020-SS1001	1	mg/kg	1.47 R	15.2 J	54.5 J	48.2 J
					MRS03-APN32436020-SS1002	1	mg/kg	1.36	15.6	17.6	48.2
				5/9/2019	MRS03-APN32436020-SS1003	1	mg/kg	1.39 U	15.2	91.2	45.4
				5/8/2019	MRS03-APN32436020-SS2001	2	mg/kg	1.38 U	15.3	11.4	51.4
					MRS03-APN32436020-SS2002	2	mg/kg	1.40 U	16.1	11.7	52.4
				5/9/2019	MRS03-APN32436020-SS2003	2	mg/kg	1.38 U	16.6	58.2	54.1
				5/8/2019	MRS03-APN32436020-SS3001	3	mg/kg	1.42 U	10.5	9	39.7
					MRS03-APN32436020-SS3002	3	mg/kg	1.44 U	10	8.3	36.3
				5/9/2019	MRS03-APN32436020-SS3003	3	mg/kg	1.42 U	11.8	9.44	43.2
				5/8/2019	MRS03-APN32436020-SS4001	4	mg/kg	1.48 U	7.79	7.01	29.8
					MRS03-APN32436020-SS4002	4	mg/kg	1.47 U	7.78	7.2	30.8
				5/9/2019	MRS03-APN32436020-SS4003	4	mg/kg	1.40 U	7.5	6.88	29.3
57	32437016	3964	E. Packard Ave	4/9/2019	MRS03-APN32437016-SS001	0	mg/kg	1.38 UJ	22.30	12.7 J	52.00
					MRS03-APN32437016-SS002	0	mg/kg	1.39 UJ	18.60	11.4 J	48.60
					MRS03-APN32437016-SS003	0	mg/kg	1.45 UJ	19.50	12.3 J	50.60
					MRS03-APN32437016-SS1001	1	mg/kg	1.44 UJ	15.20	11.0 J	47.40
					MRS03-APN32437016-SS1002	1	mg/kg	1.47 UJ	15.30	10.6 J	45.70
					MRS03-APN32437016-SS1003	1	mg/kg	1.46 UJ	15.50	11.4 J	47.60
					MRS03-APN32437016-SS2001	2	mg/kg	1.40 UJ	15.00	10.4 J	48.70
					MRS03-APN32437016-SS2002	2	mg/kg	1.49 UJ	15.90	11.0 J	50.70
					MRS03-APN32437016-SS2003	2	mg/kg	1.42 UJ	13.50	9.72 J	44.90
58	32439031	3955	E. Snavely Lane	5/29/2019	MRS03-APN32439031-SS001	0	mg/kg	1.38 U	14.5 J	14.2 J	47.3 J
					MRS03-APN32439031-SS002	0	mg/kg	1.44 U	16.1 J	14.7 J	51.4 J
					MRS03-APN32439031-SS003	0	mg/kg	1.46 U	15.3 J	42.4 J	49.9 J
					MRS03-APN32439031-SS1001	1	mg/kg	1.37 U	13.5 J	13.5 J	44.3 J
					MRS03-APN32439031-SS1002	1	mg/kg	1.46 U	14.6 J	15.4 J	47.8 J
					MRS03-APN32439031-SS1003	1	mg/kg	1.49 U	15.6 J	14.6 J	48.1 J
					MRS03-APN32439031-SS2001	2	mg/kg	1.40 U	15.1 J	15.2 J	50.0 J
					MRS03-APN32439031-SS2002	2	mg/kg	1.46 U	15.0 J	22.5 J	48.1 J
					MRS03-APN32439031-SS2003	2	mg/kg	1.39 U	14.5 J	18.6 J	48.2 J
				10/10/2019	MRS03-APN32439031-SS3001	3	mg/kg	1.41 U	16.4	15.2	55.3
					MRS03-APN32439031-SS3002	3	mg/kg	1.45 U	15.5	13.3	52.6
					MRS03-APN32439031-SS3003	3	mg/kg	1.41 UJ	16.8	16.2 J	55.7 J
					MRS03-APN32439031-SS4001	4	mg/kg	1.42 U	14.8	11.0	52.7
					MRS03-APN32439031-SS4002	4	mg/kg	1.43 U	13.1	10.2	47.7
				10/11/2019	MRS03-APN32439031-SS4003	4	mg/kg	1.46 U	15.0	14.5	53.3
				10/31/2019	MRS03-APN32439031-SS5001	5	mg/kg	1.48 UJ	9.73	8.49	36.6
					MRS03-APN32439031-SS5002	5	mg/kg	1.44 UJ	10.1	8.47	37.4 J
					MRS03-APN32439031-SS5003	5	mg/kg	1.43 UJ	9.84	8.72	37.2
					MRS03-APN32439031-SS6001	6	mg/kg	1.45 UJ	8.83	7.95	35.9
					MRS03-APN32439031-SS6002	6	mg/kg	1.42 UJ	8.81	7.89	35.6
					MRS03-APN32439031-SS6003	6	mg/kg	1.46 UJ	8.69	7.78	35.3

TABLE 6-6
SUMMARY OF METALS ANALYTICAL RESULTS – SOIL SAMPLES COLLECTED DURING THE CURRENT RI (JANUARY 2019 TO OCTOBER 2019)

#	APN #	Street #	Street Name	Date Sampled	Sample ID	Sample Depth (ft)	Analytes (US EPA Method 6010B)	ANTIMONY	COPPER	LEAD	ZINC
59	32439036	3935	E. Snavely Lane	10/8/2019	MRS03-APN32439036-SS001	0	mg/kg	1.42 UJ	48.1	8.67	34
					MRS03-APN32439036-SS002	0	mg/kg	1.49 UJ	57.9	10.1	42.1
					MRS03-APN32439036-SS003	0	mg/kg	1.48 UJ	53.9	9.09	37.3
					MRS03-APN32439036-SS1001	1	mg/kg	1.42 UJ	15.6	8.40 J	32.1
					MRS03-APN32439036-SS1002	1	mg/kg	1.44 UJ	13.5	8.27	31.9
					MRS03-APN32439036-SS1003	1	mg/kg	1.48 UJ	11.3	6.9	26
					MRS03-APN32439036-SS2001	1	mg/kg	1.47 UJ	9.39	7.98	29.4
					MRS03-APN32439036-SS2002	2	mg/kg	1.43 UJ	15	10.5	31.6
					MRS03-APN32439036-SS2003	2	mg/kg	1.40 UJ	9.11	23.3	27.2
60	32439037	3931	E. Snavely Lane	10/9/2019	MRS03-APN32439037-SS001	0	mg/kg	1.45 UJ	34.2	7.89	32.6
					MRS03-APN32439037-SS002	0	mg/kg	1.42 UJ	33	7.68	31.9
					MRS03-APN32439037-SS003	0	mg/kg	1.45 UJ	23.2	6.88	28.2
					MRS03-APN32439037-SS1001	1	mg/kg	1.39 UJ	10	6.61	26.6
					MRS03-APN32439037-SS1002	1	mg/kg	1.45 UJ	11.1	7.25	26.6
					MRS03-APN32439037-SS1003	1	mg/kg	1.42 UJ	9.95	7.51	28.5
					MRS03-APN32439037-SS2001	1	mg/kg	1.45 UJ	9.32	7.38	28.9
					MRS03-APN32439037-SS2002	2	mg/kg	1.41 UJ	9.55	6.82	30.7
					MRS03-APN32439037-SS2003	2	mg/kg	1.40 UJ	8.33	6.51	27.2

Abbreviations and Notes:
-- Sampled in open area
* Samples had rejected data, however skeet was observed in surface and/or subsurface. No additional samples were collected.
J - estimated value; the analyte was positively identified
mg/kg - milligram per kilogram
R- rejected, due to low MS/MSD recovery
U - not detected above the limit of detection
UJ - estimated non-detect

The 15 Skeet Ranges site was previously identified in USACE records as part of Munitions Response Site (MRS) 03. This designation was later changed, following the Site Inspection (Parsons 2011) to include the Site as part of MRS01. References to MRS03 are retained in portions of the RI report, including sample identifiers, for legacy reasons.

Table 6-7
January 2019 - October 2019 Remedial Investigation Parcels
Summary of Potential Health Impacts

Assessors Parcel Number	Street Number	Street Name	Estimation of Potential Health Impacts					
			Surface Soil			All Depths		
			Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Index
31021063*	--	E Thompson Ave	6E-07	0.01	0.1	4E-07	0.01	0.1
31021078	--	E Thompson Ave	5E-07	0.01	0.2	4E-07	0.005	0.1
31021080	--	E Thompson Ave	3E-08	0.01	0.0	2E-08	0.006	0.03
31021080A	--	E Thompson Ave	2E-06	0.1	0.4	2E-06	0.09	0.4
31021080B	--	E Thompson Ave	8E-07	0.02	0.1	8E-07	0.01	0.1
31038002	4015	E Thompson Ave	4E-07	0.01	0.1	3E-07	0.008	0.1
32404206A	3910	E Devlin Ave	1E-06	0.01	0.3	9E-07	0.01	0.2
32404208A	3900	E Devlin Ave	1E-06	0.07	0.1	8E-07	0.05	0.1
32404211C	3879	E Shaeffer Ave	7E-07	0.01	0.3	6E-07	0.01	0.2
32404213	3887	E Shaeffer Ave	4E-07	0.01	0.1			
32404241	3846	E Devlin Ave	1E-07	0.01	0.0	1E-07	0.01	0.03
32404242	3842	E Devlin Ave	2E-07	0.02	0.2	2E-07	0.01	0.1
32404277A	3825	E Shaeffer Ave	2E-06	0.02	0.2			
32404279	3841	E Shaeffer Ave	9E-08	0.01	0.0			
32404280	3845	E Shaeffer Ave	1E-07	0.01	0.0	9E-08	0.01	0.03
32404487	3846	E Hearne Ave	2E-06	0.03	0.0			
32404526	3845	E Devlin Ave	6E-06	0.03	0.0	4E-06	0.02	0.03
32404527	3849	E Devlin Ave	3E-06	0.02	0.0	2E-06	0.02	0.03
32404550	3960	E Hearne Ave	9E-06	0.05	0.1	7E-06	0.04	0.1
32404552A	3950	E Hearne Ave	6E-07	0.01	0.1	5E-07	0.01	0.1
32404553	3946	E Hearne Ave	1E-06	0.01	0.1	9E-07	0.01	0.1
32404556A	3922	E Hearne Ave	2E-06	0.12	0.1			
32404578	3925	E Devlin Ave	6E-06	0.04	0.2			
32404582	3945	E Devlin Ave	7E-06	0.05	0.1	5E-06	0.03	0.1
32404624	3996	E Ryan Ave	3E-07	0.01	0.0	2E-07	0.01	0.03
32404625	3990	E Ryan Ave	2E-07	0.01	0.1	2E-07	0.01	0.1
32404629A	3966	E Ryan Ave	1E-06	0.02	0.7	1E-06	0.01	0.5
32404631B	3960	E Ryan Ave	5E-07	0.01	0.1			
32404638	3920	E Ryan Ave	2E-06	0.04	0.1	2E-06	0.03	0.1
32404639*	3916	E Ryan Ave	6E-06	0.03	0.1	4E-06	0.02	0.1
32404640*	3910	E Ryan Ave	1E-04	0.5	0.3	3E-05	0.20	0.1
32404656	3915	E Hearne Ave	2E-06	0.02	0.04			
32404658	3925	E Hearne Ave	1E-06	0.01	0.3	1E-06	0.01	0.2
32404659	3929	E Hearne Ave	1E-06	0.02	0.2	1E-06	0.01	0.2
32404664	3955	E Hearne Ave	4E-07	0.01	0.05			
32404665	3959	E Hearne Ave	7E-07	0.01	0.1	5E-07	0.01	0.1
32404666	3971	E Hearne Ave	2E-06	0.02	0.05	1E-06	0.02	0.05
32404688	3860	E Ryan Ave	4E-06	0.02	0.05	3E-06	0.02	0.05
32404727	3831	E Hearne Ave	7E-07	0.02	0.04			
32404730	3845	E Hearne Ave	4E-07	0.01	0.04			
32405168	4010	E Lum Ave	2E-07	0.01	0.05			
32405169	4004	E Lum Ave	3E-07	0.01	0.04	2E-07	0.01	0.04
32405172	3990	E Lum Ave	4E-06	0.03	0.07	3E-06	0.02	0.06
32405174	3974	E Lum Ave	5E-07	0.01	0.08	1E-06	0.01	0.06
32405176	3966	E Lum Ave	3E-06	0.02	0.10	2E-06	0.02	0.10
32405177	3960	E Lum Ave	5E-07	0.01	0.08	4E-07	0.01	0.07
32405178	3956	E Lum Ave	6E-06	0.03	0.2	4E-06	0.02	0.1

Table 6-7
January 2019 - October 2019 Remedial Investigation Parcels
Summary of Potential Health Impacts

Assessors Parcel Number	Street Number	Street Name	Estimation of Potential Health Impacts: Surface Soil – Incremental Lifetime Cancer Risk	Surface Soil – Non-Cancer Hazard Index	Surface Soil – Lead Index	All Depths – Incremental Lifetime Cancer Risk	All Depths – Non-Cancer Hazard Index	All Depths – Lead Index
32405206A	3929	E Ryan Ave	5E-06	0.03	0.2	4E-06	0.02	0.1
32405212	3959	E Ryan Ave	5E-07	0.01	0.2	4E-07	0.01	0.1
32405218A	3991	E Ryan Ave	3E-07	0.01	0.04			
32405269	3986	E Thompson Ave	6E-08	0.02	0.04	5E-08	0.01	0.03
32405289	3886	E Thompson Ave	7E-07	0.01	0.09	6E-07	0.01	0.08
32405290	3880	E Thompson Ave	9E-07	0.01	0.1			
32436008	3930	E Lass Ave	2E-06	0.02	0.03	2E-06	0.01	0.03
32436011	3942	E Lass Ave	2E-06	0.01	0.2	2E-06	0.01	0.1
32436012	3946	E Lass Ave	3E-06	0.02	0.1	2E-06	0.02	0.1
32436019	3974	E Lass Ave	3E-05	0.1	0.1	2E-05	0.08	0.2
32436020	3978	E Lass Ave	1E-05	0.1	0.2	7E-06	0.04	0.1
32437016	3964	E Packard Ave	1E-07	0.01	0.03	1E-07	0.01	0.03
32439031	3955	E Snavely Ave	7E-05	0.3	0.1	3E-05	0.1	0.05
32439036	3935	E Snavely Ave	1E-05	0.07	0.03	8E-06	0.05	0.04
32439037	3931	E Snavely Ave	3E-05	0.1	0.02	2E-05	0.09	0.02

* surface samples were collected in the 2014-2017 RI

'-- Sampled in open area

Table 6-8a
Summary of Incremental Lifetime Cancer Risks and Noncarcinogenic Hazards at Parcels Characterized from 2014 - 2017

APN	Street #	Street	DU-1		DU-2		DU-3		DU-4		DU-5	
			Surface Soil		0'-1' BGS		1'-2' BGS		2'-3' BGS		3'-4' BGS	
			Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index
32404212	3883	E Shaeffer	6E-07	0.3								
32404240	3850	E Devlin Ave	7E-07	0.3								
32404281	3849	E Shaeffer Ave	3E-07	0.2								
32404484	3860	E Hearne Ave	5E-06	0.2	1E-05	0.1	2E-07	0.1	7E-07	0.22	4E-06	0.18
32404485	3854	E Hearne Ave	4E-06	0.4	1E-06	0.2	6E-08	0.3				
32404486	3850	E Hearne Ave	7E-06	0.2	3E-06	0.2	3E-07	0.2				
32404559	3916	E Hearne Ave	1E-06	0.2								
32404570	3883	E Devlin Ave	4E-06	0.1								
32404571	3887	E Devlin Ave	1E-06	0.4								
32404572	3895	E Devlin Ave	1E-06	0.2	8E-07	0.3	9E-08	0.2				
32404639*	3916	E Ryan Ave	5E-06	0.1								
32404640*	3910	E Ryan Ave	9E-05	0.5								
32404643	3896	E Ryan Ave							5E-07	0.20	2E-07	0.23
32404653	3899	E Hearne Ave	4E-05	0.2	2E-05	0.2	4E-06	0.1				
32404686	3870	E Ryan Ave	1E-05	0.1	1E-06	0.1	6E-08	0.1				
32404687	3866	E Ryan Ave	7E-06	0.1	3E-06	0.2	2E-07	0.1				
32405150	3871	E Ryan Ave	3E-06	0.2	8E-07	0.3	2E-07	0.2				
32405181	3940	E Lum Ave	1E-06	0.1								
32405182	3936	E Lum Ave	3E-06	0.2	3E-06	0.7	3E-07	0.2				
32405208	3939	E Ryan Ave	7E-07	0.2								
32405270	3980	E Thompson Ave	4E-06	0.1	2E-06	0.2	3E-06	0.1				
32405273	3966	E Thompson Ave			4E-07	0.1	7E-09	0.2				
32405274	3960	E Thompson Ave	3E-06	0.2	5E-06	0.1	6E-08	0.2				
32405287	3896	E Thompson Ave	3E-06	0.1	7E-07	0.2	9E-08	0.2				
32405288	3890	E Thompson Ave	9E-07	0.3								
32405295	3887	E Lum Ave	1E-05	0.2	1E-06	0.1	1E-06	0.1				
32405296	3895	E Lum Ave	6E-06	0.2	6E-06	0.1	3E-07	0.1				
32405297	3899	E Lum Ave	2E-05	0.2	2E-05	0.2	2E-06	0.2				
32405306	3945	E Lum Ave	7E-06	0.2	1E-05	0.2	1E-06	0.1				
32405309	3959	E Lum Ave	2E-06	0.4								
32405310	3965	E Lum Ave	1E-06	0.2								
32436014	3954	E Lass Ave	4E-05	0.5	7E-06	0.3	5E-07	0.1				
32436015	3958	E Lass Ave	1E-04	0.7	3E-05	0.3	8E-06	0.2	1E-05	0.28	5E-06	0.18
32436021	3979	E Lass Ave	1E-06	0.1								
32436022	3975	E Lass Ave	7E-06	0.3	1E-06	0.2	5E-07	0.1				
32436023	3971	E Lass Ave	7E-07	0.2								
32436026	3959	E Lass Ave	8E-07	0.4								
32437020	3980	E Packard Ave	2E-07	0.1								
32439003	3974	E Snavely Ave	3E-06	0.2	1E-06	0.09	9E-08	0.10				
32439004	3970	E Snavely Ave	5E-06	0.4	1E-05	0.3	3E-07	0.2				
32439005	3962	E Snavely Way	1E-05	0.2	3E-05	0.2	3E-07	0.09				
32439006	3960	E Snavely Way	1E-05	0.2	7E-06	0.2	4E-06	0.1				
32439007	3958	E Snavely Way	2E-05	0.2	2E-05	0.2	9E-06	0.1				
32439013	3940	E Snavely Cir	7E-05	0.4	1E-05	0.04	8E-06	0.03				
32439014	3936	E Snavely Cir	8E-06	0.2	5E-06	0.1	1E-07	0.1				
32439015	3930	E Snavely Plz	7E-06	0.2	3E-06	0.1	3E-07	0.1				
32439016	3928	E Snavely Plz	2E-05	0.2	6E-06	0.1	1E-06	0.1				
32439017	3926	E Snavely Plz	1E-05	0.2	2E-06	0.01	6E-07	0.002				
32439026	3975	E Snavely Ave	1E-05	0.3	7E-05	0.3	1E-04	0.6				
32439032	3951	E Snavely Ave	1E-05	0.2	1E-05	0.0	2E-04	0.9				
32439033	3947	E Snavely Ave	1E-05	0.2	3E-05	0.3	5E-06	0.1				
32439035	3939	E Snavely Ave			1E-05	0.2	4E-07	0.1				
32404211B	3875	E Shaeffer	1E-06	0.2								
32404211D	3880	E Devlin Ave	2E-06	0.2	7E-07	0.1	2E-08	0.1				
32404211E	3880	E Devlin Ave	2E-06	0.1	5E-07	0.2	6E-08	0.1				
32404237A(E)	3870	E Devlin Ave	2E-05	0.2	8E-06	0.2	8E-07	0.1	3E-07	0.2	2E-07	0.2
32404237A(W)	3870	E Devlin Ave	5E-05	0.2	6E-05	0.3	6E-06	0.1	2E-06	0.2	1E-06	0.12
32404282A(E)	3871	E Shaeffer Ave	2E-06	0.5								
32404282A(W)	3871	E Shaeffer Ave	1E-06	0.2								
32404282B(E)	3855	E Shaeffer Ave	4E-07	0.1								
32404282B(W)	3855	E Shaeffer Ave	2E-07	0.2								

Table 6-8a
Summary of Incremental Lifetime Cancer Risks and Noncarcinogenic Hazards at Parcels Characterized from 2014 - 2017

APN	Street #	Street	DU-1 Surface Soil		DU-2 0'-1' BGS		DU-3 1'-2' BGS		DU-4 2'-3' BGS		DU-5 3'-4' BGS	
			Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index
32404561C	3890	E Hearne Ave	1E-05	0.2	5E-06	0.1	7E-06	0.09	1E-06	0.09	4E-07	0.13
32404655A(E)	3905	E Hearne Ave	4E-06	0.2	3E-06	0.006	3E-07	0.0007				
32404655A(W)	3905	E Hearne Ave	4E-06	0.1	4E-06	0.2	4E-07	0.1				
32405180A(E)	3950	E Lum Ave	1E-06	0.2	5E-07	0.3	1E-07	0.1				
32405180A(W)	3950	E Lum Ave	1E-06	0.2	3E-07	0.1	5E-08	0.1	5E-08	0.2	4E-08	0.2
32405194B(C)	3876	E Lum Ave	3E-06	0.2	4E-07	0.1	1E-07	0.1				
32405194B(E)	3876	E Lum Ave	6E-06	0.1	4E-07	0.1	1E-07	0.1				
32405194B(W)	3876	E Lum Ave	5E-06	0.2	7E-07	0.1	2E-07	0.1				
32405205A(E)	3925	E Ryan Ave	3E-06	0.2	3E-06	0.3	2E-07	0.3				
32405205A(W)	3925	E Ryan Ave	3E-06	0.2	8E-06	0.3	1E-06	0.2				
32405272A(E)	3970	E Thompson Ave	3E-06	0.2	2E-07	0.2	9E-08	0.09				
32405272A(W)	3970	E Thompson Ave	1E-06	0.2	1E-06	0.10	2E-07	0.08				
32405276A(E)	3950	E Thompson Ave	2E-05	0.3	6E-06	0.1	1E-07	0.1	1E-07	0.1		
32405276A(W)	3950	E Thompson Ave	9E-05	0.6	2E-05	0.2	3E-06	0.1	5E-07	0.1		
32405308A(E)	3955	E Lum Ave	1E-06	0.1	5E-07	0.1	1E-07	0.2				
32405308A(W)	3955	E Lum Ave	2E-06	0.2	6E-07	0.4	1E-08	0.2				

* APNs 32404639 and 32404640 surface sampled in 2015 and subsurface sampled in 2019

Table 6-8b
Summary of Lead Indices at Parcels Characterized from 2014 - 2017

APN	Street #	Street	DU-1 Surface Soil	DU-2 0'-1' BGS	DU-3 1'-2' BGS	DU-4 2'-3' BGS	DU-5 3'-4' BGS
32404212	3883	E Shaeffer	0.3				
32404240	3850	E Devlin Ave	0.03				
32404281	3849	E Shaeffer Ave	0.04				
32404484	3860	E Hearne Ave	0.04	0.04	0.03	0.03	0.02
32404485	3854	E Hearne Ave	0.05	0.03	0.03		
32404486	3850	E Hearne Ave	0.05	0.04	0.03		
32404559	3916	E Hearne Ave	0.1				
32404570	3883	E Devlin Ave	0.04				
32404571	3887	E Devlin Ave	0.05				
32404572	3895	E Devlin Ave	0.3	0.3	0.03		
32404639	3916	E Ryan Ave	0.1				
32404640	3910	E Ryan Ave	0.3				
32404643	3890	E Ryan Ave				0.02	0.02
32404653	3899	E Hearne Ave	0.08	0.09	0.03		
32404686	3870	E Ryan Ave	0.05	0.03	0.02		
32404687	3866	E Ryan Ave	0.06	0.03	0.02		
32405150	3871	E Ryan Ave	0.04	0.03	0.03		
32405181	3940	E Lum Ave	0.07				
32405182	3936	E Lum Ave	0.07	1	0.2		
32405208	3939	E Ryan Ave	0.1				
32405270	3980	E Thompson Ave	0.2	0.1	0.04		
32405273	3966	E Thompson Ave		0.06	0.03		
32405274	3960	E Thompson Ave	0.1	0.3	0.03		
32405287	3896	E Thompson Ave	0.04	0.03	0.03		
32405288	3890	E Thompson Ave	0.05				
32405295	3887	E Lum Ave	0.04	0.03	0.03		
32405296	3895	E Lum Ave	0.03	0.03	0.02		
32405297	3899	E Lum Ave	0.03	0.03	0.03		
32405306	3945	E Lum Ave	0.09	0.08	0.04		
32405309	3959	E Lum Ave	0.5				
32405310	3965	E Lum Ave	0.3				
32436014	3954	E Lass Ave	0.05	0.5	0.03		
32436015	3958	E Lass Ave	0.05	0.03	0.03	0.03	0.02
32436021	3979	E Lass Ave	0.05				
32436022	3975	E Lass Ave	0.04	0.4	0.04		
32436023	3971	E Lass Ave	0.04				
32436026	3959	E Lass Ave	0.09				
32437020	3980	E Packard Ave	0.03				
32439003	3974	E Snavely Ave	0.1	0.06	0.03		
32439004	3970	E Snavely Ave	0.3	0.2	0.03		
32439005	3962	E Snavely Way	0.1	0.2	0.03		
32439006	3960	E Snavely Way	0.5	0.6	0.09		
32439007	3958	E Snavely Way	0.08	0.4	0.03		
32439013	3940	E Snavely Cir	0.06				
32439014	3936	E Snavely Cir	0.04	0.04	0.03		

Table 6-8b
Summary of Lead Indices at Parcels Characterized from 2014 - 2017

APN	Street #	Street	DU-1	DU-2	DU-3	DU-4	DU-5
			Surface Soil	0'-1' BGS	1'-2' BGS	2'-3' BGS	3'-4' BGS
32439015	3930	E Snavely Plz	0.04	0.03	0.03		
32439016	3928	E Snavely Plz	0.04	0.03	0.03		
32439017	3926	E Snavely Plz	0.04				
32439026	3975	E Snavely Ave	0.05				
32439032	3951	E Snavely Ave	0.04				
32439033	3947	E Snavely Ave	0.03	0.09	0.03		
32439035	3939	E Snavely Ave		0.05	0.03		
32404211B	3875	E Shaeffer	0.2				
32404211D	3880	E Devlin Ave	0.2	0.04	0.03		
32404211E	3880	E Devlin Ave	0.07	0.05	0.03		
32404237A(E)	3870	E Devlin Ave	0.07	0.04	0.03	0.02	0.02
32404237A(W)	3870	E Devlin Ave	0.05	0.06	0.02	0.02	0.03
32404282A(E)	3871	E Shaeffer Ave	0.7				
32404282A(W)	3871	E Shaeffer Ave	0.1				
32404282B(E)	3855	E Shaeffer Ave	0.04				
32404282B(W)	3855	E Shaeffer Ave	0.03				
32404561C	3890	E Hearne Ave	0.04	0.04	0.03	0.03	0.02
32404655A(E)	3905	E Hearne Ave	0.6	0.05	0.03		
32404655A(W)	3905	E Hearne Ave	0.06	0.1	0.03		
32405180A(E)	3950	E Lum Ave	0.4	0.2	0.03		
32405180A(W)	3950	E Lum Ave	0.07	0.04	0.03	0.02	0.02
32405194B(C)	3876	E Lum Ave	0.05	0.03	0.02		
32405194B(E)	3876	E Lum Ave	0.06	0.03	0.03		
32405194B(W)	3876	E Lum Ave	0.06	0.03	0.03		
32405205A(E)	3925	E Ryan Ave	0.06	0.2	0.04		
32405205A(W)	3925	E Ryan Ave	0.05	0.06	0.05		
32405272A(E)	3970	E Thompson Ave	0.9	0.1	0.2		
32405272A(W)	3970	E Thompson Ave	0.06	0.05	0.08		
32405276A(E)	3950	E Thompson Ave	0.08	0.07	0.02	0.02	
32405276A(W)	3950	E Thompson Ave	0.3	0.1	0.03	0.02	
32405308A(E)	3955	E Lum Ave	0.2	0.2	0.03		
32405308A(W)	3955	E Lum Ave	0.09	0.2	0.03		

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FIGURES

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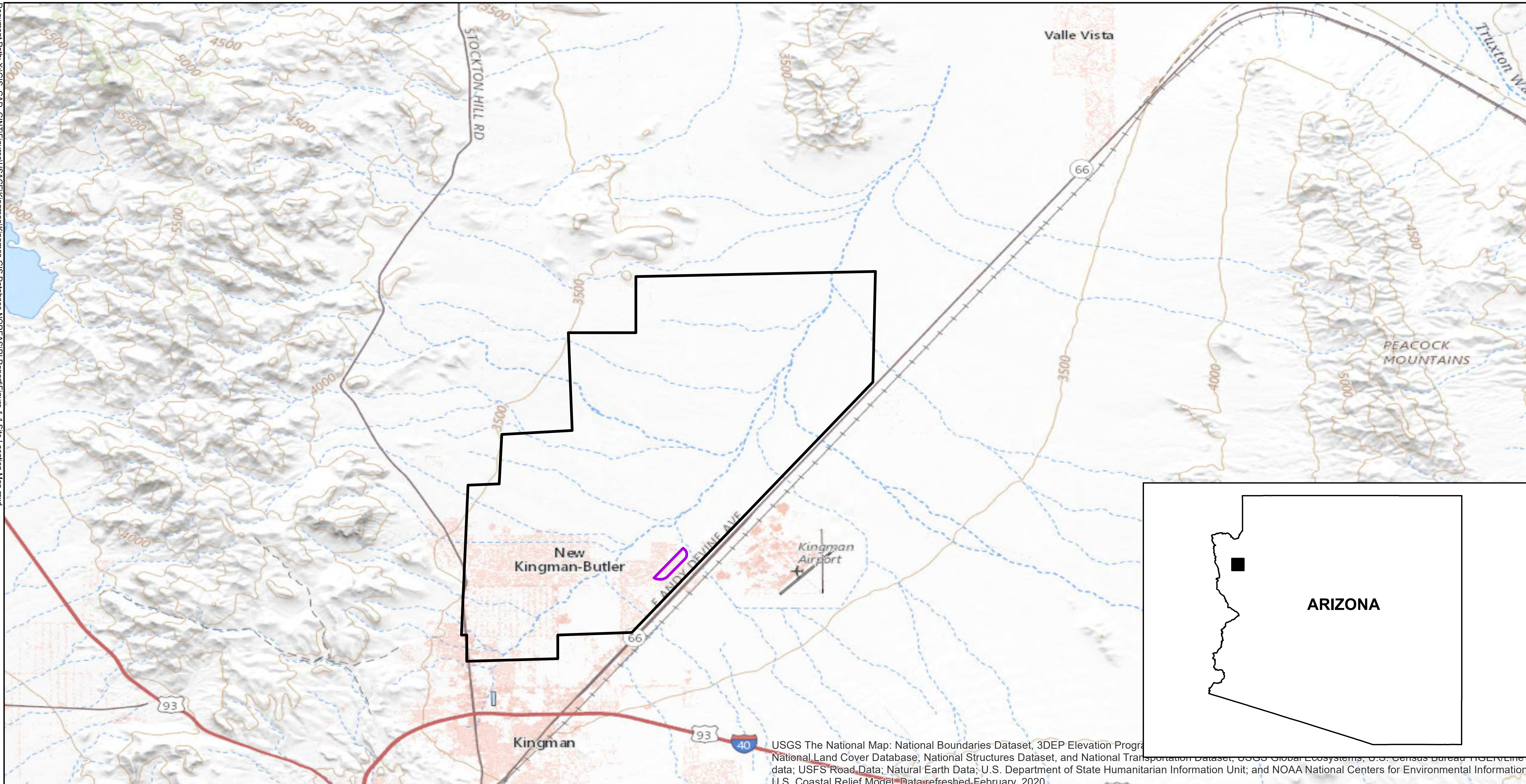

Legend

Kingman Ground-To-Ground Gunnery Range

MRS01-15 Skeet Shooting Ranges (Shotfall Zone Boundary)

Notes:
FS- feasibility study
RI- remedial investigation

N

0 1 2 4 Miles

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RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

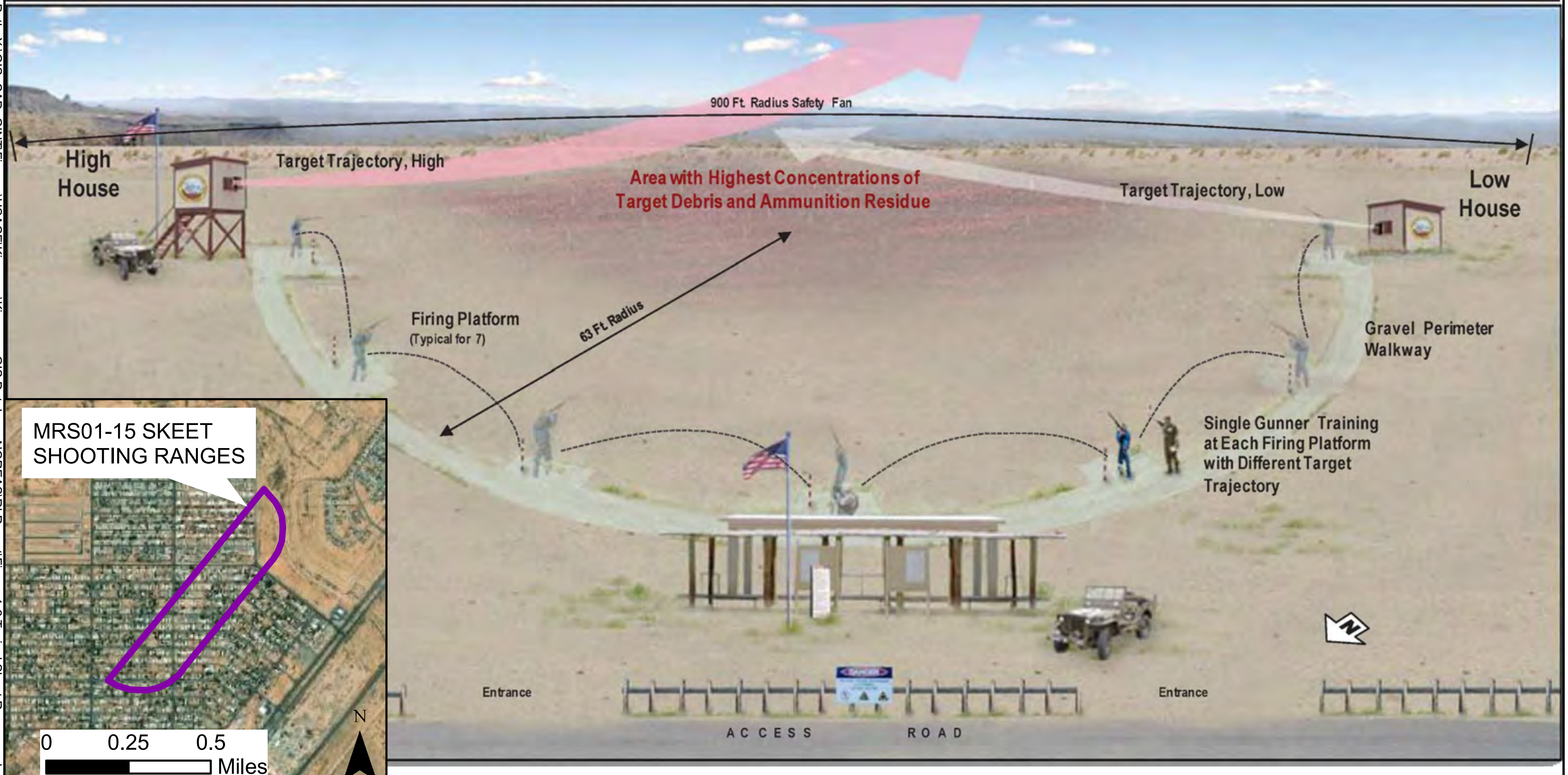
FIGURE 1-1

Site Location Map

NOREAS
Environmental Engineering and Science

MRS01 - 15 Skeet Ranges

Former Kingman Ground-to-Ground Gunnery Range



Legend

MRS01-15 Skeet Shooting Ranges (Shotfall Zone Boundary)

Notes:
FS- feasibility study
RI- remedial investigation

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RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

FIGURE 1-2

Typical Skeet Range

NOREAS
Environmental Engineering and Science

Document Path: X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Figure 1-2 Typical Skeet Range.mxd

Document Path: X:\GIS_CAD_GINT\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Figure 3-1 Locations of TCRA Parcels.mxd

Legend

TCRA

Ahtna

Eco

32405169
4004
Parcel # and Address

bgs - below ground surface
E, C & W - east, central, & west
FS - feasibility study
TCRA - time critical removal action

*Confirmation samples were all collected at 2 feet bgs.

N

100 50 0 100 200 300 Feet

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RI/FS FORMER SKEET RANGE MRS01
KINGMAN, ARIZONA

FIGURE 3-1
Locations of TCRA Parcels

NOREAS

Document Path: X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Figure 3-2 Parcels Sampled During Previous RI.mxd

Legend

32404249 / 3804 — Parcel # / Address #

Parcels Sampled During Previous RI

Note:

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

N

0 62.5 125 250 375 500 Feet

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KINGMAN, ARIZONA

FIGURE 3-2

Parcels Sampled During Previous RI

NOREAS
Environmental Engineering and Science

X:\GIS_CAD_GINT\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Figure 3-3 July Field Investigation.mxd

Legend

32405169 4004	Parcel # and Address
	Shotfall Zone Boundary
	July 2017 Visual Reconnaissance
	Identified Clay Pigeon Debris
	No Visual Evidence of Clay Pigeon Debris

Notes:
FS - feasibility study
RI - remedial investigation

N

150 75 0 150 300
Feet

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KINGMAN, ARIZONA

FIGURE 3-3

Site Reconnaissance Observations on July 11th & 12th, 2017

NOREAS

Legend

Shotfall Zones Boundary

Parcel # and Address

TCRA 2013-2014 (Ahtna and Eco)

Previous RI

Parcels Sampled 2014-2017 (Eco)

Current RI

Parcels Sampled 2019 (NOREAS)

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

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

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FIGURE 4-1

Parcels Sampled During Previous and Current RI
(December 2014 to October 2019)

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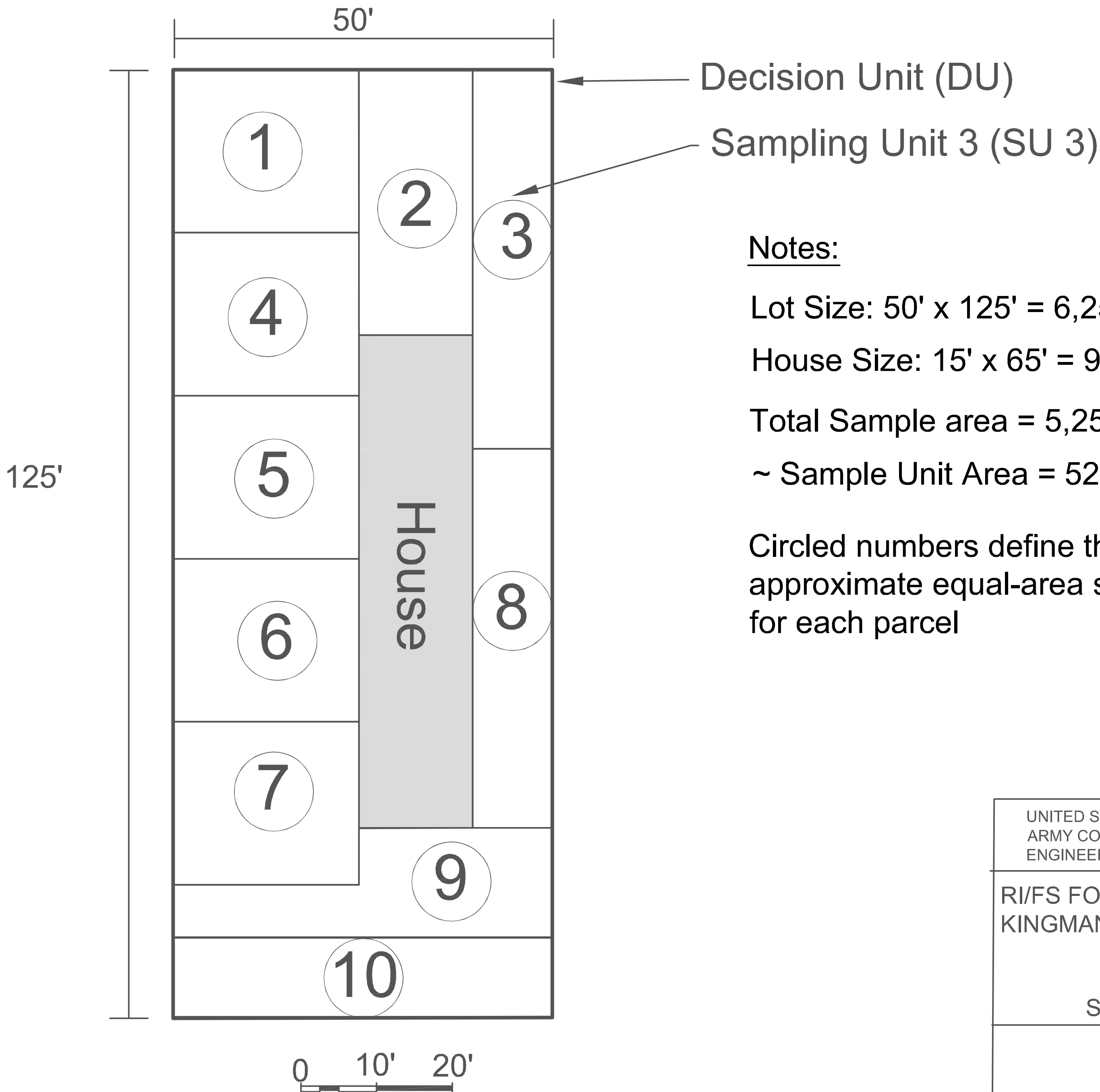

Notes:

Lot Size: 50' x 125' = 6,250 SF (DU)

House Size: 15' x 65' = 975 SF

Total Sample area = 5,255 SF

~ Sample Unit Area = 525 SF

Circled numbers define the 10 approximate equal-area sampling units for each parcel

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FIGURE 5-1A
DECISION UNIT AND
SAMPLING UNIT EXAMPLE

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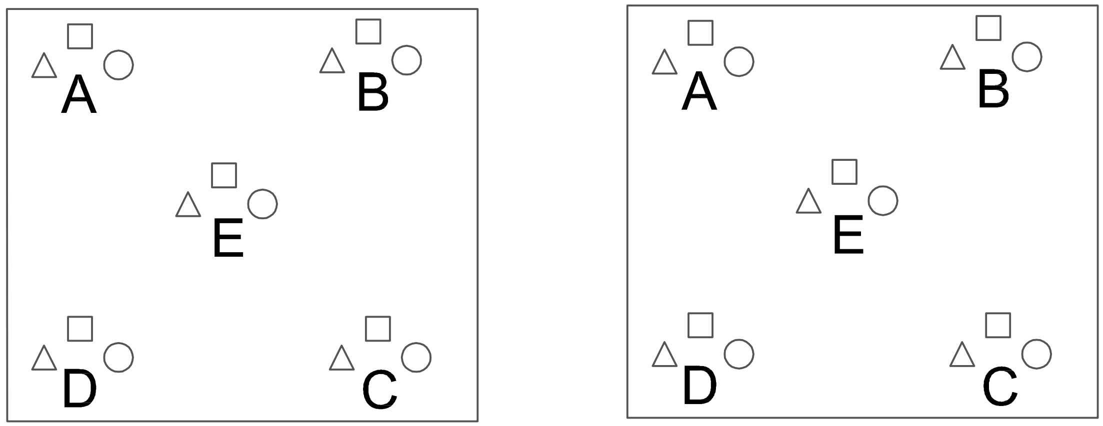
Surface Samples (0 to 2 inches)

SU 1 SU 2



+... SU 3 through SU 10

SU 1 SU 2

Replicate 1 = ΔA+ ΔB+ ΔC+ ΔD+ ΔE+ ΔA+ ΔB+ ΔC+ ΔD+ ΔE +... SU 3 through SU 10 = 1 kg

Replicate 2 = □A+ □B+ □C+ □D+ □E+ □A+ □B+ □C+ □D+ □E +... SU 3 through SU 10 = 1 kg

Replicate 3 = ○A+ ○B+ ○C+ ○D+ ○E+ ○A+ ○B+ ○C+ ○D+ ○E +... SU 3 through SU 10 = 1 kg

NOTES:

△ A = 20 gm

SU - Sampling Unit
gm - gram
kg- kilogram

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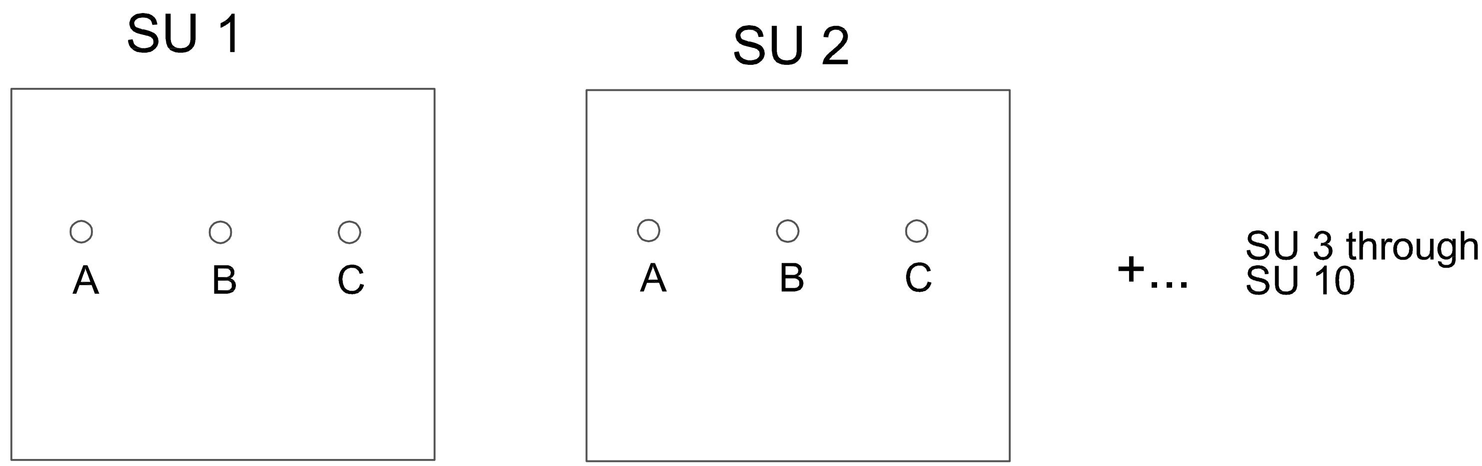
FIGURE 5-1B

SURFACE SAMPLING EXAMPLE

NOREAS

Subsurface Samples (0 to 1 foot, 1 foot to 2 feet)



Replicate 1 = A SU1+ A SU2+ A SU3+ A SU4+ A SU5+ A SU6+ A SU7+ A SU8+ A SU9+ A SU10 = 1 kg

Replicate 2 = B SU1+ B SU2+ B SU3+ B SU4+ B SU5+ B SU6+ B SU7+ B SU8+ B SU9+ B SU10 = 1 kg

Replicate 3 = C SU1+ C SU2+ C SU3+ C SU4+ C SU5+ C SU6+ C SU7+ C SU8+ C SU9+ C SU10 = 1 kg

NOTES:

* 20 gm sample

0'-1' =100 gm sample (e.g. A SU1)

gm - gram
kg - kilogram
SU- sample unit

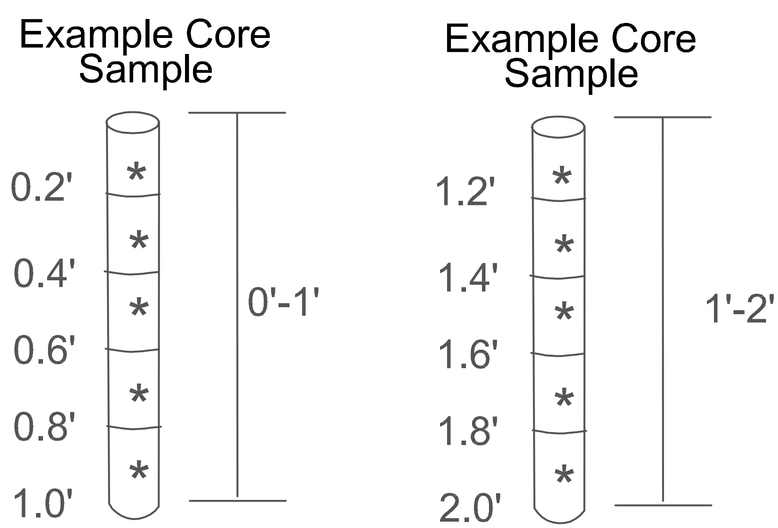


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FIGURE 5-1C

SUBSURFACE SAMPLING EXAMPLE

NOREAS

X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Figure 6-1 Visually Observed Skeet Fragments.mxd

Legend

- Shotfall Zones Boundary
- 32405169 4004 — Parcel # and Address
- TCRA 2013-2014 (Ahtna and Eco)
- Parcels Sampled 2014-2017 (Eco)
- Parcels Sampled 2019 (NOREAS)
- Skeet Fragments Observed in Parcel
- Visually Observed Skeet Fragment (Surface)

Note:
The locations of visually observed skeet on the surface are denoted with red dots for parcels north of Thompson Ave and east of Rose Drive. Additionally, locations of visually observed skeet on the surface during the July 2017 reconnaissance are also shown (red dots).

All other parcels denote the observation of skeet in any DU (surface or subsurface) with a diamond symbol, and do not indicate the exact observed locations.

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

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

N

150 75 0 150 300 450 Feet

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FIGURE 6-1

Visually Observed Skeet Fragments

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X:\GIS_CAD_GINT\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Figure 6-2 Skeet and Risk Factors.mxd

Legend

- Shotfall Zones Boundary
- 32404279 3841 — Parcel # and Address
- Visually Observed Skeet Fragment (Surface)
- Skeet Fragments Observed in Parcel

RI Parcels - Incremental Lifetime Cancer Risk

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

Note:
The locations of visually observed skeet on the surface are denoted with red dots for parcels north of Thompson Ave and east of Rose Drive.

All other parcels denote the observation of skeet in any DU (surface or subsurface) with a diamond symbol, and do not indicate the exact observed locations.

The highest Incremental Lifetime Cancer Risk Value in the surface or subsurface was selected.

No parcel had a noncarcinogenic hazard or lead index greater than one

E, C & W - east, central, & west
FS - feasibility study
RI - remedial investigations

N

150 75 0 150 300 450 Feet

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FIGURE 6-2
Visually Observed Skeet Fragments & Highest Risk Factor Reported

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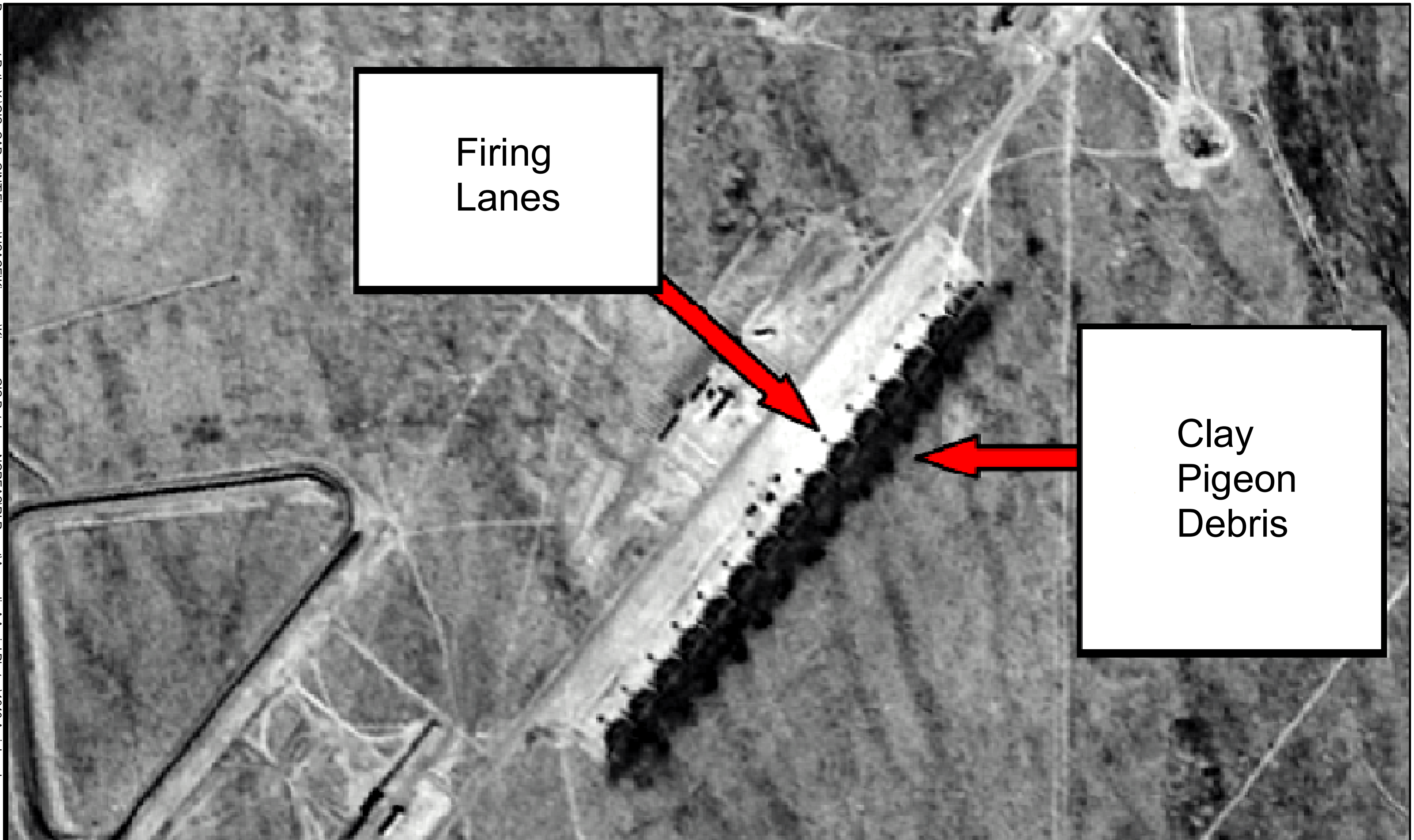
APPENDIX A

HISTORICAL AERIAL PHOTOGRAPHS (1943, 1954, 1967, 1978)

Document Path: X:\GIS_CAD_GINT\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Appendix A Aerial Photos\1943 Aerial.mxd



Notes:
FS- feasibility study
RI- remedial investigation

N

0 500 1,000 Feet

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AERIAL PHOTOGRAPH (1943)

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Notes:
FS- feasibility study
RI- remedial investigation

N

0 500 1,000 Feet

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AERIAL PHOTOGRAPH (1954)

NOREAS
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Notes:
FS- feasibility study
RI- remedial investigation

N

0 500 1,000 Feet

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AERIAL PHOTOGRAPH (1967)

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Document Path: X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Appendix A\Aerial Photos\1967 Aerial.mxd

Document Path: X:\GIS_CAD_GIN\Figures\USACE\Kingman\Kingman GIS Database NOREAS\RI Report\Appendix A\Aerial Photos\1978 Aerial.mxd

Notes:
FS- feasibility study
RI- remedial investigation

N

0 500 1,000
Feet

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AERIAL PHOTOGRAPH (1978)

NOREAS
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APPENDIX B

HUMAN HEALTH RISK ASSESSMENT

APPENDIX B
HUMAN HEALTH RISK ASSESSMENTS

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List of Exhibits

APPENDIX B
HUMAN HEALTH RISK ASSESSMENTS

1.0 INTRODUCTION

To assess potential health impacts associated with the contaminants detected in soil at the Former 15 Skeet Ranges at the former Kingman Ground to Ground Gunnery Range in Mohave County, Arizona, human health risk assessments (HHRAs) were prepared for each of the assessor parcels (parcels) investigated by NOREAS Inc. from January 15, 2019 to October 31, 2019, and for parcels previously investigated by from 2014 to 2017, as part of the Remedial Investigation (RI). The HHRAs provides a general indication of whether there is potential risk to human health and uses the established risk-based USEPA Regional Screening Levels (RSLs) (US EPA 2020).

2.0 HAZARD IDENTIFICATION

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

Each of the parcels identified in Table 1 have been investigated for the presence of polycyclic aromatic hydrocarbons (PAHs) and metals. At each parcel, each constituent detected at least once was identified as a chemical of potential concern (COPC) and evaluated for potential health impacts. Soil samples were assessed using an Integrated Sampling Methodology (ISM). The ISM provides representative samples by collecting numerous increments of soil that are combined, processed, and subsampled according to specific protocols. At the parcels, ISM data were collected from the surface, 0-1-, and 1-2-, 2-3, and 3-4-foot depths below ground surface. Not all intervals were sampled at each parcel.

3.0 EXPOSURE ASSESSMENT

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

The default USEPA residential exposure scenario assumes a long-term resident and assumes a resident spends most, if not all, of the day at home. The resident is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal contact with soil, inhalation of volatiles and fugitive dust. Adults and children exhibit different ingestion rates for soil. For example, the child resident is assumed to ingest 200 milligrams (mg) per day while the adult ingests 100 mg per day.

3.1 Estimation of Exposure Point Concentrations

The estimation of the concentration of a chemical in the environment is termed the exposure point concentration (EPC) and is a conservative estimate of the average concentration. The EPCs are determined for each parcel. The USEPA recommends using the average concentration likely to be contacted over time (USEPA 1989).

Consistent with the RI, the EPC is represented by the nonparametric 95% Chebyshev Upper Confidence Level (UCL), which is recommended for use in ISM-based samples, as this method provides a conservative estimate of the UCL (ITRC 2020). The Chebyshev method is based on non-parametric (no distributional) assumptions of the data set. All ¯JKqualified data are included, and ¯UKdata are included at ½ the reported detection limit[1]. Data identified as ¯RK(rejected) were not included in the calculation of the EPC. The USEPA program ProUCL (USEPA, 2015) was used to estimate the UCLs. The use of the UCL provides protection against underestimation, but it may also overestimate the true mean (ITRC 2020).

Soil concentrations were evaluated based on two depth intervals.

<u>0-1 Foot Below Ground Surface (bgs)</u>

Concentrations from this interval represents the most likely to be contacted under current conditions. This interval includes data from the surface soil samples as well as from the 0-1 foot bgs interval.

<u>All Depths Sampled</u>

Over the long term, soils can be excavated and redistributed across the property. The evaluation of all depths sampled portrays this scenario.

ProUCL output for each of the parcels are included in Exhibit 2, for the 0-1 foot interval, and Exhibit 3, for the soil interval represented by all data.

For the RI data obtained from 2014 to 2017, Exhibit 4 presents the EPCs used for each depth interval sampled. Due to a mixture of sampling methods used for surface sampling from 2014 to 2017 (not all parcels were sampled in ISM triplicates for surface samples), data from these

---

[1] In general, the use of one-half the detection limit will lead to an approximate but biased estimate of the true mean. This approach assumes that on the average all values between the DL and zero could be present, and that the average value of non-detects could be as high as half the detection limit. Although believed to be conservative, as the use of the DL/2 assumes the presence of a nondetected chemical, it is recognized that the bias introduced by applying this substitution method cannot be quantified with any certainty.

investigations were not treated to represent the depths of concern (i.e. 0-1 foot bgs, and all depths). Alternatively, health impacts were assessed for each interval sampled.

4.0 RISK QUANTIFICATION

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

Theoretical upper-bound incremental lifetime cancer risks (ILCRs) for carcinogenic constituents and hazard quotients (HQs) for non-carcinogenic constituents were calculated by dividing the EPCs in soil by the RSL.

For each carcinogenic COPC, the ILCR is estimated by:

$$ILCR = \frac{EPC}{RSL} \times 10^{-6}$$

Where:

ILCR = Incremental Lifetime Cancer Risk

EPC = Exposure Point Concentration

RSL = Regional Screening Level, Carcinogenic, Residential Scenario

Screening cumulative cancer risks were calculated by summing the cancer risk for each constituent.

For each noncarcinogenic COPC, the HQ is estimated by:

$$HQ = \frac{EPC}{RSL}$$

Where:

HQ = Hazard Quotient

EPC = Exposure Point Concentration

RSL = Regional Screening Level, Carcinogenic, Residential Scenario

The sum of HQs represents the cumulative Hazard Index (HI).

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

4.1 Risk Results

The HHRA results are expressed as carcinogenic risk and noncarcinogenic hazard. Carcinogenic risks are expressed in terms of probabilities. That is, a probabilistic expression is calculated to indicate the number of cancers that can be expected within a population (the lower the number the lower the probability). For example, the probability expressed as $1x10^{-5}$ can be read as a probability of cancer of one in 100,000. As a point of reference, carcinogenic risk probabilities ranging from 10^{-4} to 10^{-6} are generally considered acceptable by USEPA (National Oil and Hazardous Substances Contingency Plan; 40 Code of Federal Regulations 300.430). Additional risk management criteria are to be discussed within the Feasibility Study.

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

The results of the HHRA for each of the assessor parcels (parcels) investigated from January 15, 2019 to October 31, 2019 are presented in Table 2. For parcels previously investigated from 2014 to 2017, risk results are presented in Exhibit 4. All risks associated with COPCs reported in soil samples were either within the USEPA acceptable range, or below; the parcel with the highest estimated risk is APN 324-39-032 (3951 E Snavely Ave) with a ILCR of $2x10^{-4}$ at the 1- to 2-foot depth interval (see Exhibit 4, Table 1).

Twenty-eight (28) out of 62 parcels (including subparcels) evaluated from January 15, 2019 to October 31, 2019 were found to have a ILCR equal or in excess of $1x10^{-6}$ (see Table 2) Exhibit 1 identifies the risks from each individual chemical at each parcel location.

For parcels previously investigated from 2014 to 2017, 63 of the 77 parcels (including subparcels) were found to have an ILCR equal or greater than $1x10^{-6}$ (see Exhibit 4, Table 1). Exhibit 4 tables identifies the risks from each individual chemical at each parcel location for each depth investigated.

No parcel had a noncarcinogenic hazard greater than one. Lead concentrations were found to be below the USEPA residential soil screening level of 400 mg/kg at all parcels, except for the following:

> APN 324-05-182 (3936 E Lum Ave) (see Exhibit 4, Table 1), which had a lead ratio of 2 based on the UCL of 782 at the 0-1 foot depth interval. The maximum detected lead concentration at this parcel was 451 mg/kg. Other lead concentrations from samples at this interval were 39.4 mg/kg and 22.5 mg/kg.
>
> APN 324-05-272A(E) (3970 E Thompson Ave), which had a lead ratio of 1, based on the UCL of 552 mg/kg in surface soil. The maximum detected concentration was 342 mg/kg.
>
> APN 324-04-282A(E) (E Schaeffer Ave), which had a lead ratio of 1, based on the UCL of 462 mg/kg in surface soil. The maximum detected concentration was 281 mg/kg.
>
> APN 324-04-655A(E) (3905 E Hearne Ave), which had a lead ratio of 1, based on the UCL of 408 mg/kg in surface soil. The maximum detected concentration was 249 mg/kg.

5.0 UNCERTAINTIES

Below is a summary of the uncertainties inherent to each component of the HHRA process. Informational uncertainty stems from assumptions related to estimates of exposure and chemical toxicity. For example, to account for uncertainties in the development of exposure assumptions, conservative assumptions are made to ensure estimated risks are protective of sensitive subpopulations or the maximum exposed individuals, resulting in a bias toward over-predicting both cancer and non-cancer risks. Also, the exposures to the soils assume that they are available to contact. Landscape groundcover (i.e., imported gravel) will likely reduce the exposure depicted in this HHRA, if skeet debris, assumed to contain PAHs, is not present at the surface.

The assumed EPCs are based on the Chebyshev nonparametric UCL. In many cases, the UCL exceeded the maximum detected concentrations and subsequently may overestimate the potential concentrations to which the residents may be exposed. To calculate the UCLs, values identified as ¯not detectedKwere included in the calculation process at one-half the detection limit (DL/2). In general, the use of one-half the detection levels will lead to an approximate but biased estimate of the true mean. This approach assumes that on the average all values between the DL and zero could be present, and that the average value of non-detects could be as high as half the detection limit. Although believed to be conservative, as the use of one-half the detection level assumes the presence of a non-detected chemical, it is recognized that the bias introduced by applying this substitution method cannot be quantified with any certainty.

Sampling methods also excluded sampling of soils beneath homes, including beneath raised-floor mobile residences, which are common south of E. Thompson Ave. Therefore, changes in land use at a parcel may also impact exposure to COPCs.

The most prominent limitation of the HHRA is that soil sampling necessarily excluded larger clay pigeon debris (skeet fragments) from chemical analysis. The presence of significant clay pigeon debris at a parcel represents an on-going source of contamination both through direct exposure (ingestion) and the potential to contribute to soil contamination following further weathering/disintegration of this material.

6.0 CONCLUSIONS

The results of the HHRA are dependent upon the assumptions regarding site conditions and potential exposure scenarios. As such, the information developed by the HHRA represents a health-protective condition and portray health risks that may occur if 1) exposure conditions portrayed in the HHRA are met, including the absence of visible skeet debris, and 2) site conditions are unchanged.

Using the methodology described, potential health impacts were assessed for the metals and PAHs detected at each parcel. Of these COPCs, benzo(a)pyrene was found to contribute to the highest ILCR and noncarcinogenic hazard.

Although many parcels were found to have ILCR in excess of $1x10^{-6}$, these ILCRs were within the risk probabilities range of 10^{-4} to 10^{-6}, with the highest at APN 324-39-032 (3951 E Snavely Ave) with an estimated ILCR of 2×10^{-4} level at the 1- to 2-foot depth interval. Non-cancer human health risks associated with metals were below the threshold hazard of 1. At most parcels, lead concentrations were found to be below the USEPA residential soil screening level, with the exception of APN 324-05-182 (3936 E Lum Ave) which had a lead ratio of 2 at the 0-1 foot below ground interval (Exhibit 4, Table 2), and APN 324-05-272A(E) (3970 E Thompson Ave), APN 324-04-282A(E) (E Schaeffer Ave) and APN 324-04-655A(E) (3905 E Hearne Ave),and which had a lead ratio of 1 based on the UCL of surface soil samples.

7.0 REFERENCES

Interstate Technology Regulatory Council (ITRC). (2012). *Incremental Sampling Methodology*. Washington, D.C. February.

ITRC (2020). *Incremental Sampling Methodology (ISM) Update ISM-2. Washington, D.C.: Interstate Technology & Regulatory Council, ISM-2 Team*. October. www.itrcweb.org.

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USEPA (1989). Risk Assessment Guidance for Superfund. Volume I: Human health evaluation manual (Part A). (PDF)(289 pp, 6.9 MB). Interim Final. Office of Emergency and Remedial Response. EPA/540/1-89/002.

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

USEPA, (2020). *Regional Screening Levels.* https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. May.

Exhibit 1 Estimates of Potential Health Impacts per Parcel

EXHIBIT 1
Table 1
2019 Parcels Evaluated and Sample Depths

Assessors Parcel Number	Street Number	Street Name	Sample Depths (ft)
31021063*	--	E Thompson Ave	0,1,2
31021078	--	E Thompson Ave	0,1,2
31021080	--	E Thompson Ave	0,1,2
31021080A*	--	E Thompson Ave	0,1,2
31021080B*	--	E Thompson Ave	0,1,2
31038002	4015	E Thompson Ave	0,1,2
32404206A	3910	E Devlin Ave	0,1,2
32404208A	3900	E Devlin Ave	0,1,2
32404211C	3879	E Shaeffer Ave	0,1,2
32404213	3887	E Shaeffer Ave	0
32404241	3846	E Devlin Ave	0,1,2
32404242*	3842	E Devlin Ave	0,1,2
32404277A	3825	E Shaeffer Ave	0
32404279	3841	E Shaeffer Ave	0
32404280	3845	E Shaeffer Ave	0,1,2
32404487	3846	E Hearne Ave	0
32404526	3845	E Devlin Ave	0,1,2
32404527	3849	E Devlin Ave	0,1,2
32404550*	3960	E Hearne Ave	0,1,2
32404552A	3950	E Hearne Ave	0,1,2
32404553	3946	E Hearne Ave	0,1,2
32404556A	3922	E Hearne Ave	0
32404578	3925	E Devlin Ave	0
32404582	3945	E Devlin Ave	0,1,2
32404624	3996	E Ryan Ave	0,1,2
32404625	3990	E Ryan Ave	0,1,2
32404629A	3966	E Ryan Ave	0,1,2
32404631B	3960	E Ryan Ave	0
32404638	3920	E Ryan Ave	0,1,2
32404639	3916	E Ryan Ave	1,2
32404640	3910	E Ryan Ave	1,2,3,4
32404656	3915	E Hearne Ave	0
32404658	3925	E Hearne Ave	0,1,2
32404659	3929	E Hearne Ave	0,1,2
32404664	3955	E Hearne Ave	0
32404665	3959	E Hearne Ave	0,1,2
32404666	3971	E Hearne Ave	0,1,2
32404688	3860	E Ryan Ave	0,1,2
32404727	3831	E Hearne Ave	0

EXHIBIT 1
Table 1
2019 Parcels Evaluated and Sample Depths

Assessors Parcel Number	Street Number	Street Name	Sample Depths (ft)
32404730	3845	E Hearne Ave	0
32405168	4010	E Lum Ave	0
32405169	4004	E Lum Ave	0,1,2
32405172*	3990	E Lum Ave	0,1,2
32405174	3974	E Lum Ave	0,1,2,3,4
32405176	3966	E Lum Ave	0,1,2
32405177	3960	E Lum Ave	0,1,2
32405178	3956	E Lum Ave	0,1,2
32405206A	*	E Ryan Ave	0,1,2
32405212*	3959	E Ryan Ave	0,1,2
32405218A	3991	E Ryan Ave	0
32405269	3986	E Thompson Ave	0,1,2
32405289	3886	E Thompson Ave	0,1,2
32405290	3880	E Thompson Ave	0
32436008*	3930	E Lass Ave	0,1,2
32436011	3942	E Lass Ave	0,1,2
32436012*	3946	E Lass Ave	0,1,2,3,4
32436019	3974	E Lass Ave	0,1,2,3,4
32436020*	3978	E Lass Ave	0,1,2,3,4
32437016	3964	E Packard Ave	0,1,2
32439031	3955	E Snavely Ave	0,1,2,3,4,5,6
32439036	3935	E Snavely Ave	0,1,2
32439037	3931	E Snavely Ave	0,1,2

EXHIBIT 1
Table 2
January 2019 - October 2019 Remedial Investigation Parcels
Summary of Potential Health Impacts

Assessors Parcel Number	Street Number	Street Name	Estimation of Potential Health Impacts					
			Surface Soil			All Depths		
			Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio
31021063*	--	E Thompson Ave	6E-07	0.01	0.1	4E-07	0.01	0.1
31021078	--	E Thompson Ave	5E-07	0.01	0.2	4E-07	0.01	0.1
31021080	--	E Thompson Ave	3E-08	0.01	0.0	2E-08	0.01	0.03
31021080A*	--	E Thompson Ave	2E-06	0.1	0.4	2E-06	0.09	0.4
31021080B*	--	E Thompson Ave	8E-07	0.02	0.1	8E-07	0.01	0.1
31038002	4015	E Thompson Ave	4E-07	0.01	0.1	3E-07	0.01	0.1
32404206A	3910	E Devlin Ave	1E-06	0.01	0.3	9E-07	0.01	0.2
32404208A	3900	E Devlin Ave	1E-06	0.07	0.1	8E-07	0.05	0.1
32404211C	3879	E Shaeffer Ave	7E-07	0.01	0.3	6E-07	0.01	0.2
32404213	3887	E Shaeffer Ave	4E-07	0.01	0.1			
32404241	3846	E Devlin Ave	1E-07	0.01	0.0	1E-07	0.01	0.03
32404242*	3842	E Devlin Ave	2E-07	0.02	0.2	2E-07	0.01	0.1
32404277A	3825	E Shaeffer Ave	2E-06	0.02	0.2			
32404279	3841	E Shaeffer Ave	9E-08	0.01	0.0			
32404280	3845	E Shaeffer Ave	1E-07	0.01	0.0	9E-08	0.01	0.03
32404487	3846	E Hearne Ave	2E-06	0.03	0.0			
32404526	3845	E Devlin Ave	6E-06	0.03	0.0	4E-06	0.02	0.03
32404527	3849	E Devlin Ave	3E-06	0.02	0.0	2E-06	0.02	0.03
32404550*	3960	E Hearne Ave	9E-06	0.05	0.1	7E-06	0.04	0.1
32404552A	3950	E Hearne Ave	6E-07	0.01	0.1	5E-07	0.01	0.1
32404553	3946	E Hearne Ave	1E-06	0.01	0.1	9E-07	0.01	0.1
32404556A	3922	E Hearne Ave	2E-06	0.1	0.1			
32404578	3925	E Devlin Ave	6E-06	0.04	0.2			
32404582	3945	E Devlin Ave	7E-06	0.05	0.1	5E-06	0.03	0.1
32404624	3996	E Ryan Ave	3E-07	0.01	0.0	2E-07	0.01	0.03
32404625	3990	E Ryan Ave	2E-07	0.01	0.1	2E-07	0.01	0.1
32404629A	3966	E Ryan Ave	1E-06	0.02	0.7	1E-06	0.01	0.5
32404631B	3960	E Ryan Ave	5E-07	0.01	0.1			
32404638	3920	E Ryan Ave	2E-06	0.04	0.1	2E-06	0.03	0.1
32404639	3916	E Ryan Ave	6E-06	0.03	0.1	4E-06	0.02	0.1
32404640	3910	E Ryan Ave	1E-04	0.5	0.3	3E-05	0.20	0.1
32404656	3915	E Hearne Ave	2E-06	0.02	0.04			
32404658	3925	E Hearne Ave	1E-06	0.01	0.3	1E-06	0.01	0.2
32404659	3929	E Hearne Ave	1E-06	0.02	0.2	1E-06	0.01	0.2
32404664	3955	E Hearne Ave	4E-07	0.01	0.05			
32404665	3959	E Hearne Ave	7E-07	0.01	0.1	5E-07	0.01	0.1
32404666	3971	E Hearne Ave	2E-06	0.02	0.05	1E-06	0.02	0.05
32404688	3860	E Ryan Ave	4E-06	0.02	0.05	3E-06	0.02	0.05
32404727	3831	E Hearne Ave	7E-07	0.02	0.04			
32404730	3845	E Hearne Ave	4E-07	0.01	0.04			
32405168	4010	E Lum Ave	2E-07	0.01	0.05			
32405169	4004	E Lum Ave	3E-07	0.01	0.04	2E-07	0.01	0.04
32405172*	3990	E Lum Ave	4E-06	0.03	0.07	3E-06	0.02	0.06
32405174	3974	E Lum Ave	5E-07	0.01	0.08	1E-06	0.01	0.06
32405176	3966	E Lum Ave	3E-06	0.02	0.1	2E-06	0.02	0.10
32405177	3960	E Lum Ave	5E-07	0.01	0.08	4E-07	0.01	0.07
32405178	3956	E Lum Ave	6E-06	0.03	0.2	4E-06	0.02	0.1

EXHIBIT 1
Table 2
January 2019 - October 2019 Remedial Investigation Parcels
Summary of Potential Health Impacts

Assessors Parcel Number	Street Number	Street Name	Estimation of Potential Health Impacts					
			Surface Soil			All Depths		
			Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio	Incremental Lifetime Cancer Risk	Non-Cancer Hazard Index	Lead Ratio
32405206A	*	E Ryan Ave	5E-06	0.03	0.2	4E-06	0.02	0.1
32405212*	3959	E Ryan Ave	5E-07	0.01	0.2	4E-07	0.01	0.1
32405218A	3991	E Ryan Ave	3E-07	0.01	0.04			
32405269	3986	E Thompson Ave	6E-08	0.02	0.04	5E-08	0.01	0.03
32405289	3886	E Thompson Ave	7E-07	0.01	0.09	6E-07	0.01	0.08
32405290	3880	E Thompson Ave	9E-07	0.01	0.1			
32436008*	3930	E Lass Ave	2E-06	0.02	0.03	2E-06	0.01	0.03
32436011	3942	E Lass Ave	2E-06	0.01	0.2	2E-06	0.01	0.1
32436012*	3946	E Lass Ave	3E-06	0.02	0.1	2E-06	0.02	0.1
32436019	3974	E Lass Ave	3E-05	0.1	0.1	2E-05	0.08	0.2
32436020*	3978	E Lass Ave	1E-05	0.1	0.2	7E-06	0.04	0.1
32437016	3964	E Packard Ave	1E-07	0.01	0.03	1E-07	0.01	0.03
32439031	3955	E Snavely Ave	7E-05	0.3	0.1	3E-05	0.1	0.05
32439036	3935	E Snavely Ave	1E-05	0.07	0.03	8E-06	0.05	0.04
32439037	3931	E Snavely Ave	3E-05	0.1	0.02	2E-05	0.09	0.02

Site: Kingman APN 31021063

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.97	15.74		0.005		0.01
Zinc		23,000	53.69	56.85		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	11.09	1.28		0.00005		0.00001
Acenaphthene		3,600	1.50	1.17		0.0000004		0.0000003
Anthracene		18,000	4.23	3.84		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		31.79	26.47	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	41.33	33.45	4E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		54.24	43.82	5E-08		4E-08	
Benzo(g,h,i)perylene	not available		30.47	24.27				
Benzo(k)fluoranthene	1.10E+01		20.43	16.44	2E-09		1E-09	
Chrysene	1.10E+02		42.95	34.97	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		7.22	6.00	7E-08		5E-08	
Fluoranthene		2,400	57.64	49.00		0.00002		0.00002
Fluorene		2,400	1.28	1.27		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		34.04	26.90	3E-08		2E-08	
Naphthalene	2.00E+00	130	2.05	2.01	1E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		26.77	24.57				
Pyrene		1,800	52.89	43.99		0.00003		0.00002
Total Estimates					**6E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	59.09	44.57	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021078

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Zinc		23,000	67.21	72.38		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	3.73	2.82		0.00002		0.00001
Acenaphthene		3,600	1.20	1.00		0.0000003		0.0000003
Anthracene		18,000	2.77	2.56		0.0000002		0.0000001
Benzo(a)anthracene	1.10E+00		29.44	24.14	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	34.25	28.18	3E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		49.16	40.69	4E-08		4E-08	
Benzo(g,h,i)perylene	not available		25.15	20.48				
Benzo(k)fluoranthene	1.10E+01		19.20	15.64	2E-09		1E-09	
Chrysene	1.10E+02		41.79	34.48	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		4.98	4.44	5E-08		4E-08	
Fluoranthene		2,400	44.03	36.45		0.00002		0.00002
Indeno(1,2,3-c,d)pyrene	1.10E+00		27.61	22.32	3E-08		2E-08	
Naphthalene	2.00E+00	130	4.14	3.30	2E-09	0.00003	2E-09	0.00003
Phenanthrene	not available		24.33	19.11				
Pyrene		1,800	39.81	32.86		0.00002		0.00002
Total Estimates					**5E-07**	**0.005**	**4E-07**	**0.005**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	69.87	59.93	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021080

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.42	12.26		0.004		0.00
Zinc		23,000	36.43	36.63		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/$ RSL_c*1x10^{-6}	$EPC_{ss}x0.001/$ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
Benzo(a)anthracene	1.10E+00		2.22	2.17	2E-09		2E-09	
Benzo(a)pyrene	1.10E-01	18	2.17	2.11	2E-08	0.0001	2E-08	0.0001
Benzo(b)fluoranthene	1.10E+00		3.98	3.63	4E-09		3E-09	
Benzo(g,h,i)perylene	not available		3.53	3.40				
Chrysene	1.10E+02		3.12	2.83	3E-11		3E-11	
Fluoranthene		2,400	3.92	3.42		0.000002		0.000001
Phenanthrene	not available		3.68	3.50				
Pyrene		1,800	3.59	3.37		0.000002		0.000002
Total Estimates					**3E-08**	**0.006**	**2E-08**	**0.006**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	14.77	12.60	**0.04**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021080A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	276.80	224.40		0.09		0.07
Zinc		23,000	324.40	265.80		0.01		0.01
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	1.48	1.48		0.00001		0.00001
Acenaphthene		3,600	1.36	1.36		0.0000004		0.0000004
Anthracene		18,000	3.98 M	3.98 M		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		69.13	57.11	6E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	168.10	123.60	2E-06	0.009	1E-06	0.007
Benzo(b)fluoranthene	1.10E+00		232.20	172.80	2E-07		2E-07	
Benzo(g,h,i)perylene	not available		190.30	142.00				
Benzo(k)fluoranthene	1.10E+01		83.74	68.38	8E-09		6E-09	
Chrysene	1.10E+02		94.86	71.73	9E-10		7E-10	
Dibenz(a,h)anthracene	1.10E-01		42.38	42.38	4E-07		4E-07	
Fluoranthene		2,400	60.07	45.77		0.00003		0.00002
Indeno(1,2,3-c,d)pyrene	1.10E+00		185.50	138.30	2E-07		1E-07	
Naphthalene	2.00E+00	130	4.65	3.74	2E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		18.93	18.93				
Pyrene		1,800	58.58	44.50		0.00003		0.00002
Total Estimates					**2E-06**	**0.1**	**2E-06**	**0.09**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	165.30	143.20	**0.4**	**0.4**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC when data set is too small to compute statistic (i.e., less than 3 data points).
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31021080B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	33.82	26.68		0.011		0.01
Zinc		23,000	51.57	49.50		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
Benzo(a)anthracene	1.10E+00		9.94	9.94	9E-09		9E-09	
Benzo(a)pyrene	1.10E-01	18	48.03	48.03	4E-07	0.003	4E-07	0.003
Benzo(b)fluoranthene	1.10E+00		60.42	60.42	5E-08		5E-08	
Benzo(g,h,i)perylene	not available		145.90	145.90				
Benzo(k)fluoranthene	1.10E+01		18.40 M	18.40 M	2E-09		2E-09	
Chrysene	1.10E+02		13.41	13.41	1E-10		1E-10	
Dibenz(a,h)anthracene	1.10E-01		19.40 M	19.40 M	2E-07		2E-07	
Fluoranthene		2,400	15.63	15.63		0.00001		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		131.90	131.90	1E-07		1E-07	
Phenanthrene	not available		6.75 M	6.75 M				
Pyrene		1,800	10.10 M	10.10 M		0.00001		0.00001
Total Estimates					**8E-07**	**0.02**	**8E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	27.61	22.26	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 31038002

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*$1x10^{-6}$	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*$1x10^{-6}$	EPC_{as}/RSL_{nc}
Copper		3,100	14.72	14.53		0.005		0.005
Zinc		23,000	56.80	53.01		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*$1x10^{-6}$	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*$1x10^{-6}$	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.08	1.09		0.000005		0.000005
Acenaphthene		3,600	0.57	0.55		0.0000002		0.0000002
Anthracene		18,000	2.84	2.60		0.0000002		0.0000001
Benzo(a)anthracene	1.10E+00		21.89	15.81	2E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	30.42	21.88	3E-07	0.002	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		40.90	29.63	4E-08		3E-08	
Benzo(g,h,i)perylene	not available		23.62	17.18				
Benzo(k)fluoranthene	1.10E+01		15.41	11.29	1E-09		1E-09	
Chrysene	1.10E+02		31.19	22.61	3E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		6.11	5.16	6E-08		5E-08	
Fluoranthene		2,400	36.32	26.21		0.00002		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		26.12	18.92	2E-08		2E-08	
Naphthalene	2.00E+00	130	1.38	1.44	7E-10	0.00001	7E-10	0.00001
Phenanthrene	not available		15.22	11.31				
Pyrene		1,800	34.97	25.20		0.00002		0.00001
Total Estimates					**4E-07**	**0.009**	**3E-07**	**0.008**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	48.64	37.00	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404206A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Risk	Hazard	Risk	Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3100	15.01	14.91		0.005		0.005
Zinc		23000	84.81	75.72		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	18.05	12.47		0.0001		0.0001
Acenaphthene		3600	2.03	1.59		0.000001		0.0000004
Anthracene		18000	7.26	5.65		0.0000004		0.0000003
Benzo(a)anthracene	1.10E+00		60.89	47.37	6E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	83.03	65.01	8E-07	0.005	6E-07	0.004
Benzo(b)fluoranthene	1.10E+00		108.70	92.46	1E-07		8E-08	
Benzo(g,h,i)perylene			61.72	47.53				
Benzo(k)fluoranthene	1.10E+01		44.13	33.92	4E-09		3E-09	
Chrysene	1.10E+02		82.95	64.95	8E-10		6E-10	
Dibenz(a,h)anthracene	1.10E-01		18.03	13.78	2E-07		1E-07	
Fluoranthene		2400	105.40	80.33		0.00004		0.00003
Fluorene		2400	1.40	1.36		0.0000006		0.0000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		67.90	52.55	6E-08		5E-08	
Naphthalene	2.00E+00	130	10.79	7.91	5E-09	0.00008	4E-09	0.0001
Phenanthrene			44.46	32.97				
Pyrene		1800	101.20	77.82		0.0001		0.00004
Total Estimates					**1E-06**	**0.01**	**9E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	105.90	93.22	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN32404208A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	0.938	0.862		0.03		0.03
Copper		3,100	176.80	130.90		0.06		0.04
Zinc		23,000	85.56	77.13		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	4.32	3.59		0.00002		0.00001
Acenaphthene		3,600	7.65	5.62		0.000002		0.000002
Anthracene		18,000	8.66	6.60		0.0000005		0.0000004
Benzo(a)anthracene	1.10E+00		60.15	45.95	5E-08		4E-08	
Benzo(a)pyrene	1.10E-01	18	79.13	60.76	7E-07	0.004	6E-07	0.003
Benzo(b)fluoranthene	1.10E+00		88.40	70.83	8E-08		6E-08	
Benzo(g,h,i)perylene	not available		33.86	29.11				
Benzo(k)fluoranthene	1.10E+01		38.50	29.68	4E-09		3E-09	
Chrysene	1.10E+02		83.95	64.06	8E-10		6E-10	
Dibenz(a,h)anthracene	1.10E-01		14.69	11.22	1E-07		1E-07	
Fluoranthene		2,400	82.91	65.41		0.00003		0.00003
Fluorene		2,400	4.77	3.66		0.000002		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		56.73	44.69	5E-08		4E-08	
Naphthalene	2.00E+00	130	7.43	6.04	4E-09	0.0001	3E-09	0.0000
Phenanthrene	not available		45.21	34.63				
Pyrene		1,800	95.44	72.82		0.0001		0.00004
Total Estimates					**1E-06**	**0.07**	**8E-07**	**0.05**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	46.96	41.58	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
\# = Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404211C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	18.74	18.09		0.006		0.006
Zinc		23,000	83.64	77.42		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	4.29	3.69		0.00002		0.00002
Acenaphthene		3,600	2.21	1.81		0.0000006		0.0000005
Anthracene		18,000	8.29	6.43		0.0000005		0.0000004
Benzo(a)anthracene	1.10E+00		35.28	29.27	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	47.57	39.36	4E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		69.60	58.03	6E-08		5E-08	
Benzo(g,h,i)perylene	not available		39.93	32.97				
Benzo(k)fluoranthene	1.10E+01		28.66	24.13	3E-09		2E-09	
Chrysene	1.10E+02		56.09	46.68	5E-10		4E-10	
Dibenz(a,h)anthracene	1.10E-01		13.62	11.00	1E-07		1E-07	
Fluoranthene		2,400	61.62	51.15		0.00003		0.00002
Fluorene		2,400	4.81	3.63		0.000002		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		41.50	34.34	4E-08		3E-08	
Naphthalene	2.00E+00	130	5.57	4.99	3E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		23.50	19.92				
Pyrene		1,800	68.92	56.73		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	101.80	80.89	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404213

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		$EPC_{ss}/RSL_{c}*1x10^{-6}$	EPC_{ss}/RSL_{nc}	$EPC_{as}/RSL_{c}*1x10^{-6}$	EPC_{as}/RSL_{nc}
Copper		3,100	25.96			0.008		
Zinc		23,000	96.12			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_{c}*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	4.61			0.00002		
Acenaphthene		3,600	2.76			0.0000008		
Anthracene		18,000	4.68			0.0000003		
Benzo(a)anthracene	1.10E+00		16.57		2E-08			
Benzo(a)pyrene	1.10E-01	18	27.32		2E-07	0.002		
Benzo(b)fluoranthene	1.10E+00		36.15		3E-08			
Benzo(g,h,i)perylene	not available		20.40					
Benzo(k)fluoranthene	1.10E+01		12.35		1E-09			
Chrysene	1.10E+02		26.38		2E-10			
Dibenz(a,h)anthracene	1.10E-01		4.45		4E-08			
Fluoranthene		2,400	33.13			0.00001		
Fluorene		2,400	3.78					
Indeno(1,2,3-c,d)pyrene	1.10E+00		18.83		2E-08			
Naphthalene	2.00E+00	130	5.46		3E-09	0.00004		
Phenanthrene	not available		15.02					
Pyrene		1,800	39.66			0.00002		
Total Estimates					**4E-07**	**0.01**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	50.66		**0.1**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404241

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	10.63	10.34		0.003		0.003
Zinc		23,000	82.98	70.02		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.25	1.93		0.00001		0.00001
Acenaphthene		3,600	0.53	0.57		0.0000001		0.0000002
Benzo(a)anthracene	1.10E+00		7.25	5.79	7E-09		5E-09	
Benzo(a)pyrene	1.10E-01	18	10.51	8.51	1E-07	0.001	8E-08	0.0005
Benzo(b)fluoranthene	1.10E+00		18.15	14.35	2E-08		1E-08	
Benzo(g,h,i)perylene	not available		10.10	8.14				
Benzo(k)fluoranthene	1.10E+01		6.86	5.49	6E-10		5E-10	
Chrysene	1.10E+02		13.03	10.31	1E-10		9E-11	
Fluoranthene		2,400	15.74	12.44		0.00001		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		11.40	8.99	1E-08		8E-09	
Naphthalene	2.00E+00	130	3.66	3.10	2E-09	0.00003	2E-09	0.00002
Phenanthrene	not available		6.44	5.52				
Pyrene		1,800	14.71	11.60		0.00001		0.00001
Total Estimates					**1E-07**	**0.01**	**1E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	14.47	13.10	**0.04**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404242

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	32.07	25.64		0.01		0.01
Zinc		23,000	86.23	72.81		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	9.65	7.33		0.00004		0.00003
Acenaphthene		3,600	2.24	1.66		0.000001		0.0000005
Anthracene		18,000	4.19	3.54		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		12.88	9.80	1E-08		9E-09	
Benzo(a)pyrene	1.10E-01	18	16.42	12.20	1E-07	0.001	1E-07	0.001
Benzo(b)fluoranthene	1.10E+00		31.26	23.20	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		12.76	9.99				
Benzo(k)fluoranthene	1.10E+01		9.84	7.60	9E-10		7E-10	
Chrysene	1.10E+02		25.52	18.91	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.55	3.40	3E-08		3E-08	
Fluoranthene		2,400	30.34	22.35		0.00001		0.00001
Fluorene		2,400	1.36	1.33		0.00000		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		15.55	12.01	1E-08		1E-08	
Naphthalene	2.00E+00	130	21.26	16.11	1E-08	0.0002	8E-09	0.0001
Phenanthrene	not available		24.65	18.38				
Pyrene		1,800	27.45	20.39		0.0000		0.00001
Total Estimates					**2E-07**	**0.02**	**2E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	62.09	46.36	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404277A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	28.02			0.009		
Zinc		23,000	78.19			0.003		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	6.99			0.00003		
Acenaphthene		3,600	2.19			0.0000006		
Anthracene		18,000	13.94			0.0000008		
Benzo(a)anthracene	1.10E+00		90.30		8E-08			
Benzo(a)pyrene	1.10E-01	18	114.11		1E-06	0.006		
Benzo(b)fluoranthene	1.10E+00		101.00		9E-08			
Benzo(g,h,i)perylene	not available		145.20					
Benzo(k)fluoranthene	1.10E+01		63.63		6E-09			
Chrysene	1.10E+02		112.50		1E-09			
Dibenz(a,h)anthracene	1.10E-01		25.49		2E-07			
Fluoranthene		2,400	136.90			0.00006		
Fluorene		2,400	3.18					
Indeno(1,2,3-c,d)pyrene	1.10E+00		98.44		9E-08			
Naphthalene	2.00E+00	130	8.97		4E-09	0.00007		
Phenanthrene	not available		42.63					
Pyrene		1,800	141.00			0.00008		
Total Estimates					**2E-06**	**0.02**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	97.77		**0.2**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404279

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	10.46			0.003		
Zinc		23,000	43.67			0.002		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	1.89			0.00001		
Acenaphthene		3,600	0.62			0.0000002		
Benzo(a)anthracene	1.10E+00		6.24		6E-09			
Benzo(a)pyrene	1.10E-01	18	7.11		6E-08	0.0004		
Benzo(b)fluoranthene	1.10E+00		12.16		1E-08			
Benzo(g,h,i)perylene	not available		6.68					
Benzo(k)fluoranthene	1.10E+01		4.67		4E-10			
Chrysene	1.10E+02		10.95		1E-10			
Fluoranthene		2,400	11.86			0.000005		
Indeno(1,2,3-c,d)pyrene	1.10E+00		6.71		6E-09			
Naphthalene	2.00E+00	130	3.31		2E-09	0.00003		
Phenanthrene	not available		6.04					
Pyrene		1,800	10.95			0.00001		
		Total Estimates			**9E-08**	**0.01**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	13.49		**0.03**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404280

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.79	11.66		0.004		0.004
Zinc		23,000	44.45	43.47		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	1.83	1.66		0.000008		0.000007
Acenaphthene		3,600	0.59	0.56		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		6.53	5.24	6E-09		5E-09	
Benzo(a)pyrene	1.10E-01	18	8.60	7.28	8E-08	0.0005	7E-08	0.0004
Benzo(b)fluoranthene	1.10E+00		14.00	10.90	1E-08		1E-08	
Benzo(g,h,i)perylene	not available		18.47	13.83				
Chrysene	1.10E+02		13.22	10.25	1E-10		9E-11	
Fluoranthene		2,400	13.50	10.45		0.00001		0.000004
Indeno(1,2,3-c,d)pyrene	1.10E+00		8.24	6.71	7E-09		6E-09	
Naphthalene	2.00E+00	130	3.48	3.25	2E-09	0.00003	2E-09	0.00002
Phenanthrene	not available		6.04	5.17				
Pyrene		1,800	12.29	9.59		0.00001		0.00001
Total Estimates					**1E-07**	**0.01**	**9E-08**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	12.49	11.84	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404487

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	49.30			0.02		
Zinc		23,000	102.40			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.32			0.000006		
Acenaphthene		3,600	1.86			0.0000005		
Anthracene		18,000	10.40			0.0000006		
Benzo(a)anthracene	1.10E+00		81.49		7E-08			
Benzo(a)pyrene	1.10E-01	18	122.50		1E-06	0.007		
Benzo(b)fluoranthene	1.10E+00		194.70		2E-07			
Benzo(g,h,i)perylene	not available		284.30					
Benzo(k)fluoranthene	1.10E+01		78.00		7E-09			
Chrysene	1.10E+02		126.20		1E-09			
Dibenz(a,h)anthracene	1.10E-01		28.95		3E-07			
Fluoranthene		2,400	146.70			0.00006		
Indeno(1,2,3-c,d)pyrene	1.10E+00		147.10		1E-07			
Naphthalene	2.00E+00	130	3.38		2E-09	0.00003		
Phenanthrene	not available		57.61					
Pyrene		1,800	153.20			0.00009		
			Total Estimates		**2E-06**	**0.03**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	13.83		**0.03**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404527

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Risk	Hazard	Risk	Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3100	14.52	13.98		0.005		0.005
Zinc		23000	46.04	43.95		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.05	4.50		0.00002		0.00002
Acenaphthene		3600	9.29	7.17		0.000003		0.000002
Anthracene		18000	32.26	22.42		0.000002		0.000001
Benzo(a)anthracene	1.10E+00		165.60	135.60	2E-07		1E-07	
Benzo(a)pyrene	1.10E-01	18	209.10	173.70	2E-06	0.01	2E-06	0.01
Benzo(b)fluoranthene	1.10E+00		252.60	213.70	2E-07		2E-07	
Benzo(g,h,i)perylene			160.60	136.00				
Benzo(k)fluoranthene	1.10E+01		104.80	89.46	1E-08		8E-09	
Chrysene	1.10E+02		227.90	192.90	2E-09		2E-09	
Dibenz(a,h)anthracene	1.10E-01		39.28	32.56	4E-07		3E-07	
Fluoranthene		2400	277.50	226.80		0.0001		0.0001
Fluorene		2400	4.81	3.71		0.000002		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		164.70	139.40	1E-07		1E-07	
Naphthalene	2.00E+00	130	8.84	7.41	4E-09	0.00007	4E-09	0.0001
Phenanthrene			141.00	111.50				
Pyrene		1800	274.00	226.20		0.0002		0.0001
Total Estimates					**3E-06**	**0.02**	**2E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	12.74	12.01	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404550

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*$1x10^{-6}$	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*$1x10^{-6}$	EPC_{as}/RSL_{nc}
Copper		3,100	17.19	16.33		0.01		0.01
Zinc		23,000	117.40	98.21		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*$1x10^{-6}$	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*$1x10^{-6}$	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	9.72	8.33		0.00004		0.00003
Acenaphthene		3,600	12.39	10.88		0.000003		0.000003
Anthracene		18,000	29.50	29.78		0.000002		0.000002
Benzo(a)anthracene	1.10E+00		430.60	340.60	4E-07		3E-07	
Benzo(a)pyrene	1.10E-01	18	660.20	502.10	6E-06	0.04	5E-06	0.03
Benzo(b)fluoranthene	1.10E+00		821.70	622.70	7E-07		6E-07	
Benzo(g,h,i)perylene	not available		516.70	388.00				
Benzo(k)fluoranthene	1.10E+01		357.50	269.40	3E-08		2E-08	
Chrysene	1.10E+02		590.70	464.70	5E-09		4E-09	
Dibenz(a,h)anthracene	1.10E-01		131.30	98.27	1E-06		9E-07	
Fluoranthene		2,400	443.30	398.00		0.0002		0.0002
Fluorene		2,400	12.33	9.43		0.00001		0.000004
Indeno(1,2,3-c,d)pyrene	1.10E+00		543.80	408.40	5E-07		4E-07	
Naphthalene	2.00E+00	130	10.74	10.35	5E-09	0.0001	5E-09	0.0001
Phenanthrene	not available		135.40	140.90				
Pyrene		1,800	489.00	427.70		0.0003		0.0002
Total Estimates					**9E-06**	**0.05**	**7E-06**	**0.04**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	26.13	24.80	**0.07**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404552A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Zinc		23,000	91.58	83.21		0.004		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	3.62	2.92		0.00002		0.00001
Acenaphthene		3,600	1.22	1.02		0.0000003		0.0000003
Anthracene		18,000	3.90	3.36		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		30.12	23.68	3E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	44.90	35.08	4E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		61.49	47.88	6E-08		4E-08	
Benzo(g,h,i)perylene	not available		31.19	24.11				
Benzo(k)fluoranthene	1.10E+01		27.92	21.39	3E-09		2E-09	
Chrysene	1.10E+02		39.94	31.44	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		7.77	6.49	7E-08		6E-08	
Fluoranthene		2,400	50.19	39.83		0.00002		0.00002
Fluorene		2,400	2.79	2.36		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		37.91	29.39	3E-08		3E-08	
Naphthalene	2.00E+00	130	4.63	4.08	2E-09	0.00004	2E-09	0.00003
Phenanthrene	not available		20.02	15.97				
Pyrene		1,800	48.62	38.36		0.00003		0.00002
Total Estimates					**6E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	27.45	23.72	**0.07**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404553

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.02	10.78		0.00		0.00
Zinc		23,000	93.38	78.88		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.53	5.24		0.00002		0.00002
Acenaphthene		3,600	2.41	1.88		0.000001		0.000001
Anthracene		18,000	11.00	8.17		0.000001		0.000000
Benzo(a)anthracene	1.10E+00		67.82	53.93	6E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	82.36	64.93	7E-07	0.005	6E-07	0.004
Benzo(b)fluoranthene	1.10E+00		112.00	88.20	1E-07		8E-08	
Benzo(g,h,i)perylene	not available		56.24	43.93				
Benzo(k)fluoranthene	1.10E+01		53.15	41.40	5E-09		4E-09	
Chrysene	1.10E+02		82.77	66.11	8E-10		6E-10	
Dibenz(a,h)anthracene	1.10E-01		15.71	12.21	1E-07		1E-07	
Fluoranthene		2,400	103.30	81.69		0.00004		0.00003
Fluorene		2,400	2.13	1.84		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		68.98	53.79	6E-08		5E-08	
Naphthalene	2.00E+00	130	7.39	7.07	4E-09	0.0001	4E-09	0.0001
Phenanthrene	not available		46.30	35.61				
Pyrene		1,800	94.25	75.34		0.0001		0.0000
Total Estimates					**1E-06**	**0.01**	**9E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	26.85 M	23.85	**0.07**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404556A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	326.50			0.11		
Zinc		23,000	108.20			0.005		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	7.01			0.00003		
Acenaphthene		3,600	3.80			0.000001		
Anthracene		18,000	27.90			0.000002		
Benzo(a)anthracene	1.10E+00		136.50		1E-07			
Benzo(a)pyrene	1.10E-01	18	158.60		1E-06	0.009		
Benzo(b)fluoranthene	1.10E+00		236.60		2E-07			
Benzo(g,h,i)perylene	not available		105.00					
Benzo(k)fluoranthene	1.10E+01		101.80		9E-09			
Chrysene	1.10E+02		190.40		2E-09			
Dibenz(a,h)anthracene	1.10E-01		25.66		2E-07			
Fluoranthene		2,400	252.10			0.0001		
Fluorene		2,400	5.36					
Indeno(1,2,3-c,d)pyrene	1.10E+00		125.80		1E-07			
Naphthalene	2.00E+00	130	15.89		8E-09	0.0001		
Phenanthrene	not available		128.40					
Pyrene		1,800	223.40			0.0001		
Total Estimates					**2E-06**	**0.1**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	44.36		**0.1**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404578

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	20.31			0.01		
Zinc		23,000	138.50			0.006		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	11.55			0.00005		
Acenaphthene		3,600	4.55			0.000001		
Anthracene		18,000	37.35			0.000002		
Benzo(a)anthracene	1.10E+00		245.10		2E-07			
Benzo(a)pyrene	1.10E-01	18	474.20		4E-06	0.03		
Benzo(b)fluoranthene	1.10E+00		535.60		5E-07			
Benzo(g,h,i)perylene	not available		288.10					
Benzo(k)fluoranthene	1.10E+01		291.50		3E-08			
Chrysene	1.10E+02		481.50		4E-09			
Dibenz(a,h)anthracene	1.10E-01		87.83		8E-07			
Fluoranthene		2,400	166.20			0.00007		
Fluorene		2,400	8.48					
Indeno(1,2,3-c,d)pyrene	1.10E+00		314.10		3E-07			
Naphthalene	2.00E+00	130	17.60		9E-09	0.0001		
Phenanthrene	not available		50.85					
Pyrene		1,800	189.10			0.0001		
Total Estimates					**6E-06**	**0.04**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	59.88		**0.1**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404582

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	not detected					
Copper		3,100	33.21	27.61		0.01		0.01
Zinc		23,000	124.90	106.70		0.005		0.005
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	24.14	17.19		0.0001		0.00007
Acenaphthene		3,600	46.81	31.54		0.00001		0.000009
Anthracene		18,000	81.95	56.49		0.000005		0.000003
Benzo(a)anthracene	1.10E+00		427.30	293.70	4E-07		3E-07	
Benzo(a)pyrene	1.10E-01	18	516.10	354.30	5E-06	0.029	3E-06	0.020
Benzo(b)fluoranthene	1.10E+00		584.40	404.90	5E-07		4E-07	
Benzo(g,h,i)perylene	not available		331.80	234.80				
Benzo(k)fluoranthene	1.10E+01		250.80	173.10	2E-08		2E-08	
Chrysene	1.10E+02		615.20	420.90	6E-09		4E-09	
Dibenz(a,h)anthracene	1.10E-01		96.33	66.87	9E-07		6E-07	
Fluoranthene		2,400	644.70	446.40		0.0003		0.0002
Fluorene		2,400	14.62	10.18		0.00001		0.000004
Indeno(1,2,3-c,d)pyrene	1.10E+00		372.10	258.80	3E-07		2E-07	
Naphthalene	2.00E+00	130	53.91	37.09	3E-08	0.0004	2E-08	0.0003
Phenanthrene	not available		346.70	238.70				
Pyrene		1,800	721.90	495.90		0.0004		0.0003
Total Estimates					**7E-06**	**0.05**	**5E-06**	**0.03**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	20.23	20.63	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404624

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg				EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	23.09	20.83		0.007		0.007
Zinc		23,000	70.46	66.50		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
Benzo(a)anthracene	1.10E+00		16.82	12.77	2E-08		1E-08	
Benzo(a)pyrene	1.10E-01	18	22.00	16.50	2E-07	0.001	2E-07	0.0009
Benzo(b)fluoranthene	1.10E+00		34.16	25.86	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		15.46	11.94				
Benzo(k)fluoranthene	1.10E+01		12.23	9.49	1E-09		9E-10	
Chrysene	1.10E+02		25.96	19.59	2E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.22	3.24	3E-08		3E-08	
Fluoranthene		2,400	26.38	19.79		0.00001		0.000008
Indeno(1,2,3-c,d)pyrene	1.10E+00		18.40	14.21	2E-08		1E-08	
Naphthalene	2.00E+00	130	1.06	1.03	5E-10	0.000008	5E-10	0.000008
Phenanthrene	not available		5.62	4.92				
Pyrene		1,800	25.04	18.98		0.00001		0.00001
Total Estimates					**3E-07**	**0.01**	**2E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	14.73	13.79	**0.04**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404625

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg				$EPC_{ss}/ RSL_{c}*1x10^{-6}$	EPC_{ss}/RSL_{nc}	$EPC_{as}/ RSL_{c}*1x10^{-6}$	EPC_{as}/RSL_{nc}
Copper		3,100	17.32	16.72		0.006		0.005
Zinc		23,000	54.01	53.66		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/ RSL_{c}*1x10^{-6}$	$EPC_{ss}x0.001/ RSL_{nc}$	$EPC_{as}\ x0.001/ RSL_{c}*1x10^{-6}$	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.15	1.08		0.000005		0.000004
Benzo(a)anthracene	1.10E+00		12.60	9.78	1E-08		9E-09	
Benzo(a)pyrene	1.10E-01	18	15.25	11.65	1E-07	0.0008	1E-07	0.0006
Benzo(b)fluoranthene	1.10E+00		23.10	17.81	2E-08		2E-08	
Benzo(g,h,i)perylene	not available		10.93	8.98				
Benzo(k)fluoranthene	1.10E+01		8.66	6.99	8E-10		6E-10	
Chrysene	1.10E+02		20.27	15.56	2E-10		1E-10	
Dibenz(a,h)anthracene	1.10E-01		3.67	3.49	3E-08		3E-08	
Fluoranthene		2,400	22.77	17.31		0.000009		0.000007
Indeno(1,2,3-c,d)pyrene	1.10E+00		11.86	9.65	1E-08		9E-09	
Naphthalene	2.00E+00	130	1.28	1.17	6E-10	0.00001	6E-10	0.000009
Phenanthrene	not available		5.78	5.06				
Pyrene		1,800	21.95	16.62		0.00001		0.00001
Total Estimates					**2E-07**	**0.01**	**2E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	50.32	37.27	**0.1**	**0.09**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404629A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg				EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	1.05	0.94		0.03		0.03
Copper		3,100	17.68	16.41		0.006		0.005
Zinc		23,000	118.90	106.60		0.005		0.005
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	2.46	2.07		0.00001		0.000009
Acenaphthene		3,600	0.88	0.76		0.0000002		0.0000002
Anthracene		18,000	3.38	2.91		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		73.30	52.70	7E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	99.28	71.76	9E-07	0.006	7E-07	0.004
Benzo(b)fluoranthene	1.10E+00		153.30	110.10	1E-07		1E-07	
Benzo(g,h,i)perylene	not available		80.54	59.46				
Benzo(k)fluoranthene	1.10E+01		57.94	41.50	5E-09		4E-09	
Chrysene	1.10E+02		115.50	83.60	1E-09		8E-10	
Dibenz(a,h)anthracene	1.10E-01		21.14	15.61	2E-07		1E-07	
Fluoranthene		2,400	76.16	56.01		0.00003		0.00002
Fluorene		2,400	1.43	1.37		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		81.28	58.66	7E-08		5E-08	
Naphthalene	2.00E+00	130	3.12	2.81	2E-09	0.00002	1E-09	0.000022
Phenanthrene	not available		16.65	13.01				
Pyrene		1,800	72.11	53.39		0.00004		0.00003
Total Estimates					**1E-06**	**0.02**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	266.60	188.40	**0.7**	**0.5**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404631B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.95			0.005		
Zinc		23,000	84.16			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)$/ RSL_c*1x10^{-6}	$EPC_{ss}x0.001$/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.16			0.00001		
Anthracene		18,000	3.15			0.0000002		
Benzo(a)anthracene	1.10E+00		20.16		2E-08			
Benzo(a)pyrene	1.10E-01	18	44.96		4E-07	0.002		
Benzo(b)fluoranthene	1.10E+00		71.88		7E-08			
Benzo(g,h,i)perylene	not available		18.55					
Benzo(k)fluoranthene	1.10E+01		17.67		2E-09			
Chrysene	1.10E+02		29.33		3E-10			
Fluoranthene		2,400	35.33			0.00001		
Fluorene		2,400	1.61					
Indeno(1,2,3-c,d)pyrene	1.10E+00		34.18		3E-08			
Naphthalene	2.00E+00	130	3.68		2E-09	0.00003		
Phenanthrene	not available		18.43					
Pyrene		1,800	32.61			0.00002		
			Total Estimates		**5E-07**	**0.01**		

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

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404638

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	56.90	43.27		0.02		0.01
Zinc		23,000	193.50	153.00		0.008		0.007
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	11.51	8.79		0.00005		0.00004
Acenaphthene		3,600	8.44	6.23		0.000002		0.000002
Anthracene		18,000	27.49	20.39		0.000002		0.000001
Benzo(a)anthracene	1.10E+00		114.80	88.21	1E-07		8E-08	
Benzo(a)pyrene	1.10E-01	18	145.30	112.10	1E-06	0.008	1E-06	0.006
Benzo(b)fluoranthene	1.10E+00		221.90	170.00	2E-07		2E-07	
Benzo(g,h,i)perylene	not available		118.40	90.92				
Benzo(k)fluoranthene	1.10E+01		85.96	65.86	8E-09		6E-09	
Chrysene	1.10E+02		188.90	145.70	2E-09		1E-09	
Dibenz(a,h)anthracene	1.10E-01		29.15	22.17	3E-07		2E-07	
Fluoranthene		2,400	294.30	220.60		0.0001		0.00009
Fluorene		2,400	7.79	5.81		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		120.60	92.74	1E-07		8E-08	
Naphthalene	2.00E+00	130	38.67	28.60	2E-08	0.0003	1E-08	0.0002
Phenanthrene	not available		170.60	125.40				
Pyrene		1,800	282.70	213.40		0.0002		0.0001
Total Estimates					**2E-06**	**0.04**	**2E-06**	**0.03**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	48.99	41.99	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404639

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	2.57	1.78		0.08		0.06
Copper		3,100	19.02	16.99		0.01		0.01
Zinc		23,000	56.87	53.27		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	8.41	5.20		0.00004		0.00002
Acenaphthene		3,600	18.36	10.93		0.000005		0.000003
Anthracene		18,000	61.12	37.15		0.000003		0.000002
Benzo(a)anthracene	1.10E+00		549.10	328.50	5E-07		3E-07	
Benzo(a)pyrene	1.10E-01	18	371.00	233.30	3E-06	0.02	2E-06	0.01
Benzo(b)fluoranthene	1.10E+00		727.20	441.40	7E-07		4E-07	
Benzo(g,h,i)perylene	not available		389.50	236.60				
Benzo(k)fluoranthene	1.10E+01		313.10	188.20	3E-08		2E-08	
Chrysene	1.10E+02		585.60	353.80	5E-09		3E-09	
Dibenz(a,h)anthracene	1.10E-01		102.50	62.32	9E-07		6E-07	
Fluoranthene		2,400	927.60	555.90		0.0004		0.0002
Fluorene		2,400	10.16	6.34		0.000004		0.000003
Indeno(1,2,3-c,d)pyrene	1.10E+00		374.70	230.00	3E-07		2E-07	
Naphthalene	2.00E+00	130	19.48	11.85	1E-08	0.0001	6E-09	0.0001
Phenanthrene	not available		391.70	235.30				
Pyrene		1,800	969.40	577.60		0.0005		0.0003
Total Estimates					**6E-06**	**0.03**	**4E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	49.16	36.58	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404640

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		$EPC_{ss}/RSL_{c}*1x10^{-6}$	EPC_{ss}/RSL_{nc}	$EPC_{as}/RSL_{c}*1x10^{-6}$	EPC_{as}/RSL_{nc}
Copper		3,100	13.13	12.76		0.004		0.004
Zinc		23,000	68.77	60.70		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_{c}*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	212.90	67.30		0.0009		0.0003
Acenaphthene		3,600	732.30	230.00		0.0002		0.00006
Anthracene		18,000	1592.00	505.20		0.00009		0.00003
Benzo(a)anthracene	1.10E+00		10609.00	3366.00	1E-05		3E-06	
Benzo(a)pyrene	1.10E-01	18	7520.00	2438.00	7E-05	0.4	2E-05	0.1
Benzo(b)fluoranthene	1.10E+00		2124.00	832.40	2E-06		8E-07	
Benzo(g,h,i)perylene	not available		7953.00	2527.00				
Benzo(k)fluoranthene	1.10E+01		5564.00	1772.00	5E-07		2E-07	
Chrysene	1.10E+02		14597.00	4627.00	1E-07		4E-08	
Dibenz(a,h)anthracene	1.10E-01		2120.00	675.60	2E-05		6E-06	
Fluoranthene		2,400	18583.00	5883.00		0.008		0.002
Fluorene		2,400	359.80	112.90		0.0001		0.00005
Indeno(1,2,3-c,d)pyrene	1.10E+00		6739.00	2167.00	6E-06		2E-06	
Naphthalene	2.00E+00	130	611.90	193.20	3E-07	0.005	1E-07	0.001
Phenanthrene	not available		8229.00	2605.00				
Pyrene		1,800	21257.00	6711.00		0.012		0.004
Total Estimates					**1E-04**	**0.5**	**3E-05**	**0.2**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	135.90	53.66	**0.3**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404656

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.72			0.01		
Zinc		23,000	97.87			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	7.22			0.00003		
Acenaphthene		3,600	4.87			0.000001		
Anthracene		18,000	17.47			0.000001		
Benzo(a)anthracene	1.10E+00		98.95		9E-08			
Benzo(a)pyrene	1.10E-01	18	132.40		1E-06	0.007		
Benzo(b)fluoranthene	1.10E+00		176.00		2E-07			
Benzo(g,h,i)perylene	not available		110.00					
Benzo(k)fluoranthene	1.10E+01		65.51		6E-09			
Chrysene	1.10E+02		109.40		1E-09			
Dibenz(a,h)anthracene	1.10E-01		28.42		3E-07			
Fluoranthene		2,400	188.40			0.00008		
Indeno(1,2,3-c,d)pyrene	1.10E+00		124.80		1E-07			
Naphthalene	2.00E+00	130	11.22		6E-09	0.00009		
Phenanthrene	not available		110.70					
Pyrene		1,800	164.80			0.00009		
		Total Estimates			**2E-06**	**0.02**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	16.58		**0.04**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404658

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Zinc		23,000	121.50	97.22		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	4.54	3.55		0.00002		0.00001
Acenaphthene		3,600	1.96	5.59		0.000001		0.000002
Anthracene		18,000	9.99	7.83		0.000001		0.000000
Benzo(a)anthracene	1.10E+00		69.35	56.00	6E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	99.63	80.44	9E-07	0.006	7E-07	0.004
Benzo(b)fluoranthene	1.10E+00		133.50	107.90	1E-07		1E-07	
Benzo(g,h,i)perylene	not available		74.72	61.09				
Benzo(k)fluoranthene	1.10E+01		50.41	41.40	5E-09		4E-09	
Chrysene	1.10E+02		99.39	80.06	9E-10		7E-10	
Dibenz(a,h)anthracene	1.10E-01		16.81	13.31	2E-07		1E-07	
Fluoranthene		2,400	111.80	89.97		0.00005		0.00004
Indeno(1,2,3-c,d)pyrene	1.10E+00		87.74	71.41	8E-08		6E-08	
Naphthalene	2.00E+00	130	4.93	4.91	2E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		46.22	36.79				
Pyrene		1,800	111.00	89.45		0.0001		0.00005
Total Estimates					**1E-06**	**0.01**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	104.40	94.27	**0.3**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404659

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	23.39	20.57		0.01		0.01
Zinc		23,000	71.23	65.06		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	10.96	11.94		0.00005		0.00005
Acenaphthene		3,600	2.97	2.46		0.000001		0.000001
Anthracene		18,000	10.42	8.08		0.0000006		0.0000004
Benzo(a)anthracene	1.10E+00		70.80	55.89	6E-08		5E-08	
Benzo(a)pyrene	1.10E-01	18	107.60	84.54	1E-06	0.006	8E-07	0.005
Benzo(b)fluoranthene	1.10E+00		135.90	106.50	1E-07		1E-07	
Benzo(g,h,i)perylene	not available		86.03	66.45				
Benzo(k)fluoranthene	1.10E+01		52.62	41.61	5E-09		4E-09	
Chrysene	1.10E+02		100.30	79.77	9E-10		7E-10	
Dibenz(a,h)anthracene	1.10E-01		20.25	15.72	2E-07		1E-07	
Fluoranthene		2,400	117.60	92.19		0.00005		0.00004
Fluorene		2,400	7.02	5.45		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		95.60	74.05	9E-08		7E-08	
Naphthalene	2.00E+00	130	14.86	16.70	7E-09	0.0001	8E-09	0.0001
Phenanthrene	not available		51.58	40.08				
Pyrene		1,800	116.40	91.98		0.0001		0.0001
Total Estimates					**1E-06**	**0.02**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	85.12	76.34	**0.2**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404664

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	13.82			0.004		
Zinc		23,000	88.75			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.19			0.000005		
Acenaphthene		3,600	0.99			0.0000003		
Anthracene		18,000	2.91			0.0000002		
Benzo(a)anthracene	1.10E+00		19.17		2E-08			
Benzo(a)pyrene	1.10E-01	18	25.92		2E-07	0.001		
Benzo(b)fluoranthene	1.10E+00		38.45		3E-08			
Benzo(g,h,i)perylene	not available		21.05					
Benzo(k)fluoranthene	1.10E+01		14.80		1E-09			
Chrysene	1.10E+02		24.94		2E-10			
Dibenz(a,h)anthracene	1.10E-01		6.03		5E-08			
Fluoranthene		2,400	32.50			0.00001		
Fluorene		2,400	1.44					
Indeno(1,2,3-c,d)pyrene	1.10E+00		21.95		2E-08			
Naphthalene	2.00E+00	130	1.99		1E-09	0.00002		
Phenanthrene	not available		14.43					
Pyrene		1,800	33.14			0.00002		
Total Estimates					**4E-07**	**0.01**		

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

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404665

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Zinc		23,000	79.71	69.55		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	6.22	4.57		0.00003		0.00002
Acenaphthene		3,600	1.17	0.96		0.0000003		0.0000003
Anthracene		18,000	8.46	6.34		0.0000005		0.0000004
Benzo(a)anthracene	1.10E+00		43.38	31.12	4E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	51.59	37.51	5E-07	0.003	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		72.76	52.74	7E-08		5E-08	
Benzo(g,h,i)perylene	not available		40.77	29.67				
Benzo(k)fluoranthene	1.10E+01		29.48	21.46	3E-09		2E-09	
Chrysene	1.10E+02		50.54	36.84	5E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		10.36	8.04	9E-08		7E-08	
Fluoranthene		2,400	87.91	62.06		0.00004		0.00003
Indeno(1,2,3-c,d)pyrene	1.10E+00		47.66	34.63	4E-08		3E-08	
Naphthalene	2.00E+00	130	7.84	7.21	4E-09	0.0001	4E-09	0.0001
Phenanthrene	not available		44.24	31.19				
Pyrene		1,800	75.55	53.83		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**5E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	23.84	21.97	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404666

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	31.31	25.17		0.01		0.008
Zinc		23,000	112.00	93.29		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	3.44	2.76		0.00001		0.00001
Acenaphthene		3,600	2.17	1.71		0.0000006		0.0000005
Anthracene		18,000	18.97	13.51		0.000001		0.0000008
Benzo(a)anthracene	1.10E+00		99.03	70.74	9E-08		6E-08	
Benzo(a)pyrene	1.10E-01	18	116.00	83.38	1E-06	0.006	8E-07	0.005
Benzo(b)fluoranthene	1.10E+00		164.90	117.40	1E-07		1E-07	
Benzo(g,h,i)perylene	not available		98.43	70.82				
Benzo(k)fluoranthene	1.10E+01		68.91	50.49	6E-09		5E-09	
Chrysene	1.10E+02		127.60	92.51	1E-09		8E-10	
Dibenz(a,h)anthracene	1.10E-01		23.02	16.82	2E-07		2E-07	
Fluoranthene		2,400	204.00	144.20		0.00009		0.00006
Fluorene		2,400	1.84	1.66		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		98.41	70.95	9E-08		6E-08	
Naphthalene	2.00E+00	130	9.26	7.31	5E-09	0.0001	4E-09	0.0001
Phenanthrene	not available		102.10	71.82				
Pyrene		1,800	180.40	128.70		0.0001		0.00007
Total Estimates					**2E-06**	**0.02**	**1E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	20.52	20.11	**0.05**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404688

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Zinc		23,000	53.90	53.50		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.41	2.06		0.00001		0.00001
Acenaphthene		3,600	6.67	5.02		0.000002		0.000001
Anthracene		18,000	54.31	38.09		0.000003		0.000002
Benzo(a)anthracene	1.10E+00		280.20	207.70	3E-07		2E-07	
Benzo(a)pyrene	1.10E-01	18	296.40	225.90	3E-06	0.02	2E-06	0.01
Benzo(b)fluoranthene	1.10E+00		405.10	306.50	4E-07		3E-07	
Benzo(g,h,i)perylene	not available		202.70	155.80				
Benzo(k)fluoranthene	1.10E+01		146.50	111.80	1E-08		1E-08	
Chrysene	1.10E+02		313.10	239.90	3E-09		2E-09	
Dibenz(a,h)anthracene	1.10E-01		52.37	40.02	5E-07		4E-07	
Fluoranthene		2,400	607.90	439.40		0.0003		0.0002
Fluorene		2,400	4.74	3.58		0.000002		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		222.00	170.30	2E-07		2E-07	
Naphthalene	2.00E+00	130	5.48	4.59	3E-09	0.00004	2E-09	0.00004
Phenanthrene	not available		257.10	184.80				
Pyrene		1,800	522.20	382.60		0.0003		0.0002
Total Estimates					**4E-06**	**0.02**	**3E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	24.93	19.80 M	**0.06**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404727

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	28.96			0.009		
Zinc		23,000	86.72			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	12.07			0.00005		
Benzo(a)anthracene	1.10E+00		38.87		4E-08			
Benzo(a)pyrene	1.10E-01	18	55.97		5E-07	0.003		
Benzo(b)fluoranthene	1.10E+00		78.76		7E-08			
Benzo(g,h,i)perylene	not available		57.25					
Benzo(k)fluoranthene	1.10E+01		31.53		3E-09			
Chrysene	1.10E+02		59.25		5E-10			
Fluoranthene		2,400	64.08			0.00003		
Indeno(1,2,3-c,d)pyrene	1.10E+00		56.44		5E-08			
Phenanthrene	not available		41.36					
Pyrene		1,800	60.32			0.00003		
Total Estimates					**7E-07**	**0.02**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	14.07		**0.04**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404730

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.05			0.005		
Zinc		23,000	67.69			0.003		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.15			0.00001		
Acenaphthene		3,600	1.09			0.0000003		
Anthracene		18,000	2.89			0.0000002		
Benzo(a)anthracene	1.10E+00		22.46		2E-08			
Benzo(a)pyrene	1.10E-01	18	32.10		3E-07	0.002		
Benzo(b)fluoranthene	1.10E+00		45.53		4E-08			
Benzo(g,h,i)perylene	not available		27.08					
Benzo(k)fluoranthene	1.10E+01		13.07		1E-09			
Chrysene	1.10E+02		35.35		3E-10			
Dibenz(a,h)anthracene	1.10E-01		6.49		6E-08			
Fluoranthene		2,400	40.12			0.00002		
Fluorene		2,400	1.38					
Indeno(1,2,3-c,d)pyrene	1.10E+00		26.77		2E-08			
Naphthalene	2.00E+00	130	4.03		2E-09	0.00003		
Phenanthrene	not available		16.51					
Pyrene		1,800	39.99			0.00002		
		Total Estimates			**4E-07**	**0.01**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	15.71		**0.04**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405168

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	19.11			0.006		
Zinc		23,000	116.00			0.005		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	6.66			0.00003		
Acenaphthene		3,600	0.74			0.0000002		
Anthracene		18,000	2.68			0.0000001		
Benzo(a)anthracene	1.10E+00		11.93		1E-08			
Benzo(a)pyrene	1.10E-01	18	16.02		1E-07	0.001		
Benzo(b)fluoranthene	1.10E+00		23.50		2E-08			
Benzo(g,h,i)perylene	not available		13.32					
Benzo(k)fluoranthene	1.10E+01		12.22		1E-09			
Chrysene	1.10E+02		30.36		3E-10			
Dibenz(a,h)anthracene	1.10E-01		4.14		4E-08			
Fluoranthene		2,400	26.26			0.00001		
Fluorene		2,400	1.52					
Indeno(1,2,3-c,d)pyrene	1.10E+00		11.28		1E-08			
Naphthalene	2.00E+00	130	7.97		4E-09	0.00006		
Phenanthrene	not available		11.03					
Pyrene		1,800	23.56			0.00001		
		Total Estimates			**2E-07**	**0.01**		

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

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
\# = Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405169

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.30	13.93		0.005		0.004
Zinc		23,000	46.76	46.40		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	2.13	1.72		0.00001		0.00001
Anthracene		18,000	2.63	2.42		0.0000001		0.0000001
Benzo(a)anthracene	1.10E+00		13.08	9.93	1E-08		9E-09	
Benzo(a)pyrene	1.10E-01	18	18.32	13.79	2E-07	0.001	1E-07	0.001
Benzo(b)fluoranthene	1.10E+00		31.68	23.77	3E-08		2E-08	
Benzo(g,h,i)perylene	not available		12.20	9.24				
Benzo(k)fluoranthene	1.10E+01		11.55	8.79	1E-09		8E-10	
Chrysene	1.10E+02		28.10	21.13	3E-10		2E-10	
Dibenz(a,h)anthracene	1.10E-01		3.35	3.28	3E-08		3E-08	
Fluoranthene		2,400	27.86	21.11		0.00001		0.00001
Fluorene		2,400	4.18	3.21		0.000002		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		15.86	12.02	1E-08		1E-08	
Naphthalene	2.00E+00	130	1.59	1.40	8E-10	0.00001	7E-10	0.00001
Phenanthrene	not available		24.94	18.06				
Pyrene		1,800	29.11	21.89		0.00002		0.00001
Total Estimates					**3E-07**	**0.01**	**2E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	15.52	14.67	**0.04**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405172

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	16.03	15.12		0.005		0.005
Zinc		23,000	107.50	87.48		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	6.13	5.17		0.00003		0.00002
Acenaphthene		3,600	9.02	6.95		0.000003		0.000002
Anthracene		18,000	44.87	32.97		0.000002		0.000002
Benzo(a)anthracene	1.10E+00		272.10	205.10	2E-07		2E-07	
Benzo(a)pyrene	1.10E-01	18	333.30	251.20	3E-06	0.02	2E-06	0.01
Benzo(b)fluoranthene	1.10E+00		321.30	253.70	3E-07		2E-07	
Benzo(g,h,i)perylene	not available		209.00	157.60				
Benzo(k)fluoranthene	1.10E+01		161.90	123.50	1E-08		1E-08	
Chrysene	1.10E+02		319.60	245.10	3E-09		2E-09	
Dibenz(a,h)anthracene	1.10E-01		57.72	44.01	5E-07		4E-07	
Fluoranthene		2,400	447.50	337.60		0.0002		0.0001
Fluorene		2,400	7.10	5.62		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		248.40	187.60	2E-07		2E-07	
Naphthalene	2.00E+00	130	27.62	22.36	1E-08	0.0002	1E-08	0.0002
Phenanthrene	not available		215.60	159.00				
Pyrene		1,800	424.20	323.30		0.0002		0.0002
Total Estimates					**4E-06**	**0.03**	**3E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	28.58	24.37	**0.07**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405174

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	1.30	0.95		0.04		0.03
Copper		3,100	14.46	15.24		0.005		0.005
Zinc		23,000	88.69	66.61		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	2.35	4.94		0.00001		0.00002
Acenaphthene		3,600	1.13	1.99		0.0000003		0.000001
Anthracene		18,000	2.37	6.07		0.0000001		0.0000003
Benzo(a)anthracene	1.10E+00		25.95	84.24	2E-08		8E-08	
Benzo(a)pyrene	1.10E-01	18	38.24	113.70	3E-07	0.002	1E-06	0.006
Benzo(b)fluoranthene	1.10E+00		53.86	143.00	5E-08		1E-07	
Benzo(g,h,i)perylene	not available		28.30	70.21				
Benzo(k)fluoranthene	1.10E+01		19.78	58.13	2E-09		5E-09	
Chrysene	1.10E+02		43.02	99.23	4E-10		9E-10	
Dibenz(a,h)anthracene	1.10E-01		6.44	16.23	6E-08		1E-07	
Fluoranthene		2,400	52.19	92.70		0.00002		0.00004
Fluorene		2,400	1.31	1.84		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		32.45	88.56	3E-08		8E-08	
Naphthalene	2.00E+00	130	4.50	7.83	2E-09	0.00003	4E-09	0.0001
Phenanthrene	not available		17.55	22.08				
Pyrene		1,800	50.77	93.76		0.00003		0.0001
Total Estimates					**5E-07**	**0.01**	**1E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	30.46	23.03	**0.08**	**0.06**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405176

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.85	17.61		0.006		0.006
Zinc		23,000	82.95	75.29		0.004		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	4.15	3.18		0.00002		0.00001
Acenaphthene		3,600	8.36	5.80		0.000002		0.000002
Anthracene		18,000	35.07	24.20		0.000002		0.000001
Benzo(a)anthracene	1.10E+00		208.70	142.80	2E-07		1E-07	
Benzo(a)pyrene	1.10E-01	18	265.90	182.20	2E-06	0.01	2E-06	0.01
Benzo(b)fluoranthene	1.10E+00		241.40	167.50	2E-07		2E-07	
Benzo(g,h,i)perylene	not available		161.30	111.10				
Benzo(k)fluoranthene	1.10E+01		134.90	92.72	1E-08		8E-09	
Chrysene	1.10E+02		241.80	166.10	2E-09		2E-09	
Dibenz(a,h)anthracene	1.10E-01		45.52	31.73	4E-07		3E-07	
Fluoranthene		2,400	302.60	207.80		0.0001		0.00009
Fluorene		2,400	7.14	5.83		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		192.90	132.60	2E-07		1E-07	
Naphthalene	2.00E+00	130	6.21	4.83	3E-09	0.00005	2E-09	0.0000
Phenanthrene	not available		158.10	108.20				
Pyrene		1,800	302.60	207.90		0.0002		0.0001
Total Estimates					**3E-06**	**0.02**	**2E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	39.57	41.08	**0.10**	**0.10**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405177

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg				EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.02	12.36		0.004		0.004
Zinc		23,000	55.25	50.02		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
Acenaphthene		3,600	0.89	0.76		0.0000002		0.0000002
Anthracene		18,000	3.18	2.82		0.0000002		0.0000002
Benzo(a)anthracene	1.10E+00		26.42	22.39	2E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	35.47	30.04	3E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		45.29	37.83	4E-08		3E-08	
Benzo(g,h,i)perylene	not available		24.06	20.08				
Benzo(k)fluoranthene	1.10E+01		20.01	16.76	2E-09		2E-09	
Chrysene	1.10E+02		36.27	30.29	3E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		6.73	5.67	6E-08		5E-08	
Fluoranthene		2,400	51.75	42.26		0.00002		0.00002
Indeno(1,2,3-c,d)pyrene	1.10E+00		28.95	23.96	3E-08		2E-08	
Phenanthrene	not available		24.69	19.55				
Pyrene		1,800	49.20	40.28		0.00003		0.00002
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	31.23	28.82	**0.08**	**0.07**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405178

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg				EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	11.71	11.48		0.004		0.004
Zinc		23,000	46.55	43.11		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
Acenaphthene		3,600	6.94	4.95		0.000002		0.000001
Anthracene		18,000	52.68	37.14		0.000003		0.000002
Benzo(a)anthracene	1.10E+00		389.40	277.50	4E-07		3E-07	
Benzo(a)pyrene	1.10E-01	18	440.50	317.60	4E-06	0.02	3E-06	0.02
Benzo(b)fluoranthene	1.10E+00		565.60	404.30	5E-07		4E-07	
Benzo(g,h,i)perylene	not available		308.20	220.90				
Benzo(k)fluoranthene	1.10E+01		278.50	199.10	3E-08		2E-08	
Chrysene	1.10E+02		513.10	365.00	5E-09		3E-09	
Dibenz(a,h)anthracene	1.10E-01		81.00	58.11	7E-07		5E-07	
Fluoranthene		2,400	878.20	620.30		0.0004		0.0003
Fluorene		2,400	7.72	5.70		0.000003		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		346.20	249.50	3E-07		2E-07	
Phenanthrene	not available		421.10	294.30				
Pyrene		1,800	828.40	585.80		0.0005		0.0003
Total Estimates					**6E-06**	**0.03**	**4E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	70.15	59.72	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405206A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	0.98	0.90		0.03		0.03
Copper		3,100	14.50	13.93		0.005		0.004
Zinc		23,000	70.45	63.01		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
Acenaphthene		3,600	16.78	11.82		0.000005		0.000003
Anthracene		18,000	26.75	20.20		0.000001		0.000001
Benzo(a)anthracene	1.10E+00		257.90	202.60	2E-07		2E-07	
Benzo(a)pyrene	1.10E-01	18	387.90	302.30	4E-06	0.02	3E-06	0.02
Benzo(b)fluoranthene	1.10E+00		449.80	356.60	4E-07		3E-07	
Benzo(g,h,i)perylene	not available		302.80	237.20				
Benzo(k)fluoranthene	1.10E+01		192.00	149.80	2E-08		1E-08	
Chrysene	1.10E+02		358.20	279.70	3E-09		3E-09	
Dibenz(a,h)anthracene	1.10E-01		84.89	64.70	8E-07		6E-07	
Fluoranthene		2,400	325.30	258.90		0.0001		0.0001
Fluorene		2,400	4.47	3.42		0.000002		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		341.80	263.10	3E-07		2E-07	
Naphthalene	2.00E+00	130	31.95	22.55	2E-08	0.0002	1E-08	0.0002
Phenanthrene	not available		130.00	100.40				
Pyrene		1,800	383.30	295.40		0.0002		0.0002
Total Estimates					**5E-06**	**0.03**	**4E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	70.36	55.70	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405212

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.25	14.98		0.005		0.005
Zinc		23,000	55.61	52.94		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.32	1.17		0.000005		0.000005
Acenaphthene		3,600	0.74	0.66		0.0000002		0.0000002
Anthracene		18,000	2.48	2.36		0.0000001		0.0000001
Benzo(a)anthracene	1.10E+00		24.76	18.50	2E-08		2E-08	
Benzo(a)pyrene	1.10E-01	18	38.05	28.08	3E-07	0.002	3E-07	0.002
Benzo(b)fluoranthene	1.10E+00		50.87	37.76	5E-08		3E-08	
Benzo(g,h,i)perylene	not available		29.27	21.74				
Benzo(k)fluoranthene	1.10E+01		19.55	14.58	2E-09		1E-09	
Chrysene	1.10E+02		38.58	28.85	4E-10		3E-10	
Dibenz(a,h)anthracene	1.10E-01		7.14	5.91	6E-08		5E-08	
Fluoranthene		2,400	42.59	32.51		0.00002		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		30.51	22.67	3E-08		2E-08	
Naphthalene	2.00E+00	130	7.47	5.44	4E-09	0.0001	3E-09	0.00004
Phenanthrene	not available		17.61	13.71				
Pyrene		1,800	41.68	31.64		0.00002		0.00002
Total Estimates					**5E-07**	**0.01**	**4E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	62.37	50.84	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405218A

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	15.68			0.005		
Zinc		23,000	80.97			0.004		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.53			0.00001		
Acenaphthene		3,600	1.06			0.0000003		
Anthracene		18,000	4.77			0.0000003		
Benzo(a)anthracene	1.10E+00		19.10		2E-08			
Benzo(a)pyrene	1.10E-01	18	21.83		2E-07	0.001		
Benzo(b)fluoranthene	1.10E+00		35.02		3E-08			
Benzo(g,h,i)perylene	not available		14.12					
Benzo(k)fluoranthene	1.10E+01		10.41		9E-10			
Chrysene	1.10E+02		26.77		2E-10			
Fluoranthene		2,400	36.17			0.00002		
Fluorene		2,400	2.07					
Indeno(1,2,3-c,d)pyrene	1.10E+00		16.14		1E-08			
Naphthalene	2.00E+00	130	2.63		1E-09	0.00002		
Phenanthrene	not available		18.13					
Pyrene		1,800	33.00			0.00002		
		Total Estimates			**3E-07**	**0.01**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	15.19		**0.04**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405269

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	42.25	34.36		0.01		0.01
Zinc		23,000	64.99	59.16		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.44	18.13		0.000006		0.00008
Acenaphthene		3,600	0.62	2.47		0.0000002		0.0000007
Anthracene		18,000	2.16	2.56		0.0000001		0.0000001
Benzo(a)anthracene	1.10E+00		3.15	2.76	3E-09		3E-09	
Benzo(a)pyrene	1.10E-01	18	4.82	3.98	4E-08	0.0003	4E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		7.74	6.37	7E-09		6E-09	
Benzo(g,h,i)perylene	not available		4.47	3.98				
Benzo(k)fluoranthene	1.10E+01		2.52	2.36	2E-10		2E-10	
Chrysene	1.10E+02		5.30	4.49	5E-11		4E-11	
Fluoranthene		2,400	7.07	5.74		0.000003		0.000002
Fluorene		2,400	1.33	3.53		0.0000006		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		4.60	4.06	4E-09		4E-09	
Naphthalene	2.00E+00	130	3.72	3.32	2E-09	0.00003	2E-09	0.00003
Phenanthrene	not available		3.52	6.94				
Pyrene		1,800	6.06	5.10		0.000003		0.000003
Total Estimates					**6E-08**	**0.02**	**5E-08**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		EPC_{ss}/$RSL_{res-lead}$	EPC_{as}/$RSL_{res-lead}$
Lead	400	14.20	12.79	**0.04**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32404526

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Zinc		23,000	75.36	66.92		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.10	4.22		0.00002		0.00002
Acenaphthene		3,600	8.88	6.38		0.000002		0.000002
Anthracene		18,000	87.83	60.25		0.000005		0.000003
Benzo(a)anthracene	1.10E+00		392.90	276.20	4E-07		3E-07	
Benzo(a)pyrene	1.10E-01	18	403.60	295.50	4E-06	0.022	3E-06	0.016
Benzo(b)fluoranthene	1.10E+00		578.80	416.10	5E-07		4E-07	
Benzo(g,h,i)perylene	not available		278.60	203.90				
Benzo(k)fluoranthene	1.10E+01		272.30	193.60	2E-08		2E-08	
Chrysene	1.10E+02		424.10	301.60	4E-09		3E-09	
Dibenz(a,h)anthracene	1.10E-01		92.61	66.30	8E-07		6E-07	
Fluoranthene		2,400	786.80	546.90		0.0003		0.0002
Fluorene		2,400	3.88	3.10		0.00000		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		343.90	251.20	3E-07		2E-07	
Naphthalene	2.00E+00	130	9.11	7.62	5E-09	0.0001	4E-09	0.0001
Phenanthrene	not available		381.40	263.30				
Pyrene		1,800	669.00	468.90		0.0004		0.0003
Total Estimates					**6E-06**	**0.03**	**4E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	12.44	10.16	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405289

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	18.54	16.96		0.006		0.005
Zinc		23,000	121.30	101.20		0.005		0.004
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	6.04	5.00		0.00003		0.00002
Acenaphthene		3,600	1.64	1.36		0.0000005		0.0000004
Anthracene		18,000	5.52	4.61		0.0000003		0.0000003
Benzo(a)anthracene	1.10E+00		35.26	30.72	3E-08		3E-08	
Benzo(a)pyrene	1.10E-01	18	48.32	42.54	4E-07	0.003	4E-07	0.002
Benzo(b)fluoranthene	1.10E+00		72.83	63.62	7E-08		6E-08	
Benzo(g,h,i)perylene	not available		46.13	40.08				
Benzo(k)fluoranthene	1.10E+01		26.76	23.22	2E-09		2E-09	
Chrysene	1.10E+02		58.04	50.68	5E-10		5E-10	
Dibenz(a,h)anthracene	1.10E-01		9.89	8.19	9E-08		7E-08	
Fluoranthene		2,400	69.22	60.00		0.00003		0.00003
Indeno(1,2,3-c,d)pyrene	1.10E+00		41.20	35.64	4E-08		3E-08	
Naphthalene	2.00E+00	130	6.84	5.66	3E-09	0.00005	3E-09	0.00004
Phenanthrene	not available		26.35	22.65				
Pyrene		1,800	67.88	59.21		0.00004		0.00003
Total Estimates					**7E-07**	**0.01**	**6E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	36.81	31.80	**0.09**	**0.08**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32405290

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration (Only suface soil sampled at this location)		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	17.82			0.006		
Zinc		23,000	113.30			0.005		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	5.11			0.00002		
Acenaphthene		3,600	3.80			0.000001		
Anthracene		18,000	13.29			0.0000007		
Benzo(a)anthracene	1.10E+00		51.54		5E-08			
Benzo(a)pyrene	1.10E-01	18	63.01		6E-07	0.004		
Benzo(b)fluoranthene	1.10E+00		120.60		1E-07			
Benzo(g,h,i)perylene	not available		53.81					
Benzo(k)fluoranthene	1.10E+01		43.68		4E-09			
Chrysene	1.10E+02		139.40		1E-09			
Dibenz(a,h)anthracene	1.10E-01		13.50		1E-07			
Fluoranthene		2,400	244.50			0.00010		
Fluorene		2,400	1.91					
Indeno(1,2,3-c,d)pyrene	1.10E+00		52.68		5E-08			
Naphthalene	2.00E+00	130	7.41		4E-09	0.00006		
Phenanthrene	not available		146.40					
Pyrene		1,800	189.00			0.0001		
Total Estimates					**9E-07**	**0.01**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	30.69		**0.1**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436008

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	14.50	15.80		0.005		0.01
Zinc		23,000	43.66	51.35		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	2.55	2.20		0.00001		0.00001
Acenaphthene		3,600	2.54	2.02		0.000001		0.000001
Anthracene		18,000	10.66	8.14		0.000001		0.0000005
Benzo(a)anthracene	1.10E+00		89.03	70.26	8E-08		6E-08	
Benzo(a)pyrene	1.10E-01	18	154.50	115.70	1E-06	0.01	1E-06	0.01
Benzo(b)fluoranthene	1.10E+00		205.00	153.90	2E-07		1E-07	
Benzo(g,h,i)perylene	not available		141.70	104.90				
Benzo(k)fluoranthene	1.10E+01		79.66	60.79	7E-09		6E-09	
Chrysene	1.10E+02		119.40	94.87	1E-09		9E-10	
Dibenz(a,h)anthracene	1.10E-01		35.94	26.41	3E-07		2E-07	
Fluoranthene		2,400	130.30	104.90		0.0001		0.00004
Fluorene		2,400	1.49	1.43		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		148.30	109.70	1E-07		1E-07	
Naphthalene	2.00E+00	130	6.18	4.95	3E-09	0.00005	2E-09	0.00004
Phenanthrene	not available		55.11	42.75				
Pyrene		1,800	124.10	101.10		0.0001		0.0001
Total Estimates					**2E-06**	**0.02**	**2E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	12.26	11.92	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436011

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	12.97	15.20		0.004		0.005
Zinc		23,000	63.77	58.64		0.003		0.003
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	1.15	1.09		0.000005		0.000005
Acenaphthene		3,600	3.21	2.63		0.0000009		0.0000007
Anthracene		18,000	12.21	9.88		0.000001		0.0000005
Benzo(a)anthracene	1.10E+00		110.10	92.23	1E-07		8E-08	
Benzo(a)pyrene	1.10E-01	18	136.00	115.40	1E-06	0.008	1E-06	0.006
Benzo(b)fluoranthene	1.10E+00		194.60	165.40	2E-07		2E-07	
Benzo(g,h,i)perylene	not available		105.30	89.63				
Benzo(k)fluoranthene	1.10E+01		71.19	60.12	6E-09		5E-09	
Chrysene	1.10E+02		141.60	119.40	1E-09		1E-09	
Dibenz(a,h)anthracene	1.10E-01		24.63	20.56	2E-07		2E-07	
Fluoranthene		2,400	177.20	150.20		0.00007		0.00006
Fluorene		2,400	1.34	1.35		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		118.90	100.50	1E-07		9E-08	
Naphthalene	2.00E+00	130	3.04	2.47	2E-09	0.00002	1E-09	0.00002
Phenanthrene	not available		69.38	58.11				
Pyrene		1,800	170.30	144.60		0.0001		0.00008
Total Estimates					**2E-06**	**0.01**	**2E-06**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	64.83	50.34	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436012

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	28.04	20.21		0.009		0.007
Zinc		23,000	51.12	46.82		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
2-Methylnaphthalene		240	1.93	3.88		0.000008		0.00002
Acenaphthene		3,600	4.82	7.75		0.000001		0.000002
Anthracene		18,000	22.53	18.25		0.000001		0.000001
Benzo(a)anthracene	1.10E+00		156.80	122.70	1E-07		1E-07	
Benzo(a)pyrene	1.10E-01	18	203.70	167.50	2E-06	0.01	2E-06	0.009
Benzo(b)fluoranthene	1.10E+00		274.00	216.10	2E-07		2E-07	
Benzo(g,h,i)perylene	not available		148.80	120.80				
Benzo(k)fluoranthene	1.10E+01		108.60	84.88	1E-08		8E-09	
Chrysene	1.10E+02		195.50	163.50	2E-09		1E-09	
Dibenz(a,h)anthracene	1.10E-01		39.10	33.45	4E-07		3E-07	
Fluoranthene		2,400	292.00	213.30		0.0001		0.00009
Fluorene		2,400	2.38	3.28		0.000001		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		169.30	133.90	2E-07		1E-07	
Naphthalene	2.00E+00	130	4.56	12.34	2E-09	0.00004	6E-09	0.0001
Phenanthrene	not available		122.60	90.62				
Pyrene		1,800	269.70	211.40		0.0001		0.0001
Total Estimates					**3E-06**	**0.02**	**2E-06**	**0.02**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	45.29	25.37	**0.1**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436019

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	53.18	31.17		0.02		0.01
Zinc		23,000	50.20	50.13		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	24.76	13.58		0.0001		0.00006
Acenaphthene		3,600	85.05	44.95		0.000024		0.00001
Anthracene		18,000	438.20	235.10		0.00002		0.00001
Benzo(a)anthracene	1.10E+00		1804.00	1035.00	2E-06		9E-07	
Benzo(a)pyrene	1.10E-01	18	2065.00	1176.00	2E-05	0.1	1E-05	0.07
Benzo(b)fluoranthene	1.10E+00		2610.00	1506.00	2E-06		1E-06	
Benzo(g,h,i)perylene	not available		1383.00	794.80				
Benzo(k)fluoranthene	1.10E+01		1079.00	606.70	1E-07		6E-08	
Chrysene	1.10E+02		2258.00	1298.00	2E-08		1E-08	
Dibenz(a,h)anthracene	1.10E-01		340.30	194.00	3E-06		2E-06	
Fluoranthene		2,400	3851.00	2175.00		0.002		0.0009
Fluorene		2,400	55.74	27.75		0.00002		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		1601.00	923.50	1E-06		8E-07	
Naphthalene	2.00E+00	130	79.99	43.74	4E-08	0.0006	2E-08	0.0003
Phenanthrene	not available		1911.00	1074.00				
Pyrene		1,800	3514.00	1978.00		0.002		0.001
Total Estimates					**3E-05**	**0.1**	**2E-05**	**0.08**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	50.46	65.47	**0.1**	**0.2**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32436020

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Antimony		31	1.61	1.01				
Copper		3,100	22.18	16.73		0.01		0.01
Zinc		23,000	67.70	53.84		0.003		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	31.70	14.77		0.0001		0.00006
Acenaphthene		3,600	105.40	48.51		0.00003		0.00001
Anthracene		18,000	203.20	104.30		0.00001		0.00001
Benzo(a)anthracene	1.10E+00		882.20	488.50	8E-07		4E-07	
Benzo(a)pyrene	1.10E-01	18	932.10	503.20	8E-06	0.1	5E-06	0.03
Benzo(b)fluoranthene	1.10E+00		1223.00	676.30	1E-06		6E-07	
Benzo(g,h,i)perylene	not available		661.10	367.40				
Benzo(k)fluoranthene	1.10E+01		480.90	274.10	4E-08		2E-08	
Chrysene	1.10E+02		1161.00	621.90	1E-08		6E-09	
Dibenz(a,h)anthracene	1.10E-01		158.50	85.19	1E-06		8E-07	
Fluoranthene		2,400	1484.00	813.50		0.001		0.0003
Fluorene		2,400	50.56	23.31		0.00002		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		708.80	390.20	6E-07		4E-07	
Naphthalene	2.00E+00	130	102.40	46.76	5E-08	0.0008	2E-08	0.0004
Phenanthrene	not available		800.00	428.60				
Pyrene		1,800	1462.00	782.10		0.001		0.0004
Total Estimates					**1E-05**	**0.1**	**7E-06**	**0.04**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res\text{-}lead}$	$EPC_{as}/RSL_{res\text{-}lead}$
Lead	400	92.26	50.93	**0.2**	**0.1**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32437016

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg				EPC_{ss}/ RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/ RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	22.89	20.81		0.007		0.007
Zinc		23,000	52.74	51.89		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		(EPC_{ss}x0.001)/ RSL_c*1x10^{-6}	EPC_{ss}x0.001/ RSL_{nc}	EPC_{as} x0.001/ RSL_c*1x10^{-6}	EPC_{as}/ RSL_{nc}
Benzo(a)anthracene	1.10E+00		8.20	6.97	7E-09		6E-09	
Benzo(a)pyrene	1.10E-01	18	11.20	9.43	1E-07	0.0006	9E-08	0.0005
Benzo(b)fluoranthene	1.10E+00		14.77	12.44	1E-08		1E-08	
Benzo(g,h,i)perylene	not available		8.70	7.14				
Benzo(k)fluoranthene	1.10E+01		5.46	4.56	5E-10		4E-10	
Chrysene	1.10E+02		12.75	10.99	1E-10		1E-10	
Fluoranthene		2,400	14.21	12.54		0.000006		0.000005
Indeno(1,2,3-c,d)pyrene	1.10E+00		9.44	7.75	9E-09		7E-09	
Phenanthrene	not available		6.37	5.36				
Pyrene		1,800	14.38	12.27		0.000008		0.000007
Total Estimates					**1E-07**	**0.01**	**1E-07**	**0.01**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	12.98	12.51	**0.03**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN32439031

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Risk	Hazard	Risk	Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3100	16.58	16.07		0.005		0.005
Zinc		23000	52.44	52.84		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	79.56	37.04		0.0003		0.0002
Acenaphthene		3600	241.70	111.40		0.0001		0.00003
Anthracene		18000	695.90	315.90		0.00004		0.00002
Benzo(a)anthracene	1.10E+00		3806.00	1755.00	3E-06		2E-06	
Benzo(a)pyrene	1.10E-01	18	5051.00	2206.00	5E-05	0.281	2E-05	0.1
Benzo(b)fluoranthene	1.10E+00		6656.00	2869.00	6E-06		3E-06	
Benzo(g,h,i)perylene			3519.00	1501.00				
Benzo(k)fluoranthene	1.10E+01		2635.00	1157.00	2E-07		1E-07	
Chrysene	1.10E+02		5316.00	2416.00	5E-08		2E-08	
Dibenz(a,h)anthracene	1.10E-01		783.60	362.40	7E-06		3E-06	
Fluoranthene		2400	6770.00	3138.00		0.003		0.001
Fluorene		2400	116.80	49.60		0.000		0.00002
Indeno(1,2,3-c,d)pyrene	1.10E+00		3611.00	1590.00	3E-06		1E-06	
Naphthalene	2.00E+00	130	282.40	125.50	1E-07	0.002	6E-08	0.001
Phenanthrene			3315.00	1544.00				
Pyrene		1800	6660.00	3130.00		0.004		0.002
Total Estimates					**7E-05**	**0.3**	**3E-05**	**0.1**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	39.45	21.49	**0.1**	**0.05**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32439036

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	72.68	56.14		0.02		0.02
Zinc		23,000	43.60	39.64		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	8.65	7.71		0.00004		0.00003
Acenaphthene		3,600	29.08	24.90		0.000008		0.000007
Anthracene		18,000	146.40	108.60		0.000008		0.000006
Benzo(a)anthracene	1.10E+00		706.00	539.10	6E-07		5E-07	
Benzo(a)pyrene	1.10E-01	18	805.20	610.70	7E-06	0.04	6E-06	0.03
Benzo(b)fluoranthene	1.10E+00		1019.00	775.70	9E-07		7E-07	
Benzo(g,h,i)perylene	not available		552.00	412.00				
Benzo(k)fluoranthene	1.10E+01		400.50	306.70	4E-08		3E-08	
Chrysene	1.10E+02		865.90	668.10	8E-09		6E-09	
Dibenz(a,h)anthracene	1.10E-01		108.20	84.57	1E-06		8E-07	
Fluoranthene		2,400	1474.00	1090.00		0.0006		0.0005
Fluorene		2,400	15.66	13.35		0.000007		0.000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		597.90	443.00	5E-07		4E-07	
Naphthalene	2.00E+00	130	23.35	22.91	1E-08	0.0002	1E-08	0.0002
Phenanthrene	not available		739.50	545.40				
Pyrene		1,800	1309.00	986.60		0.0007		0.0005
Total Estimates					**1E-05**	**0.07**	**8E-06**	**0.05**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	10.44	17.58	**0.03**	**0.04**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Site: Kingman APN 32439037

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration		Surface Soil Health Risk Estimates		All Depths Health Risk Estimates	
	Cancer	Noncancer	Surface (0-1)	All Depths	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg		EPC_{ss}/RSL_c*1x10^{-6}	EPC_{ss}/RSL_{nc}	EPC_{as}/RSL_c*1x10^{-6}	EPC_{as}/RSL_{nc}
Copper		3,100	40.70	32.02		0.01		0.01
Zinc		23,000	33.69	32.27		0.001		0.001
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg		$(EPC_{ss}x0.001)/RSL_c*1x10^{-6}$	$EPC_{ss}x0.001/RSL_{nc}$	$EPC_{as}x0.001/RSL_c*1x10^{-6}$	EPC_{as}/RSL_{nc}
2-Methylnaphthalene		240	45.66	31.29		0.0002		0.0001
Acenaphthene		3,600	141.60	95.92		0.00004		0.00003
Anthracene		18,000	264.00	184.40		0.00001		0.00001
Benzo(a)anthracene	1.10E+00		1604.00	1115.00	1E-06		1E-06	
Benzo(a)pyrene	1.10E-01	18	1987.00	1378.00	2E-05	0.1	1E-05	0.08
Benzo(b)fluoranthene	1.10E+00		2398.00	1666.00	2E-06		2E-06	
Benzo(g,h,i)perylene	not available		1202.00	839.20				
Benzo(k)fluoranthene	1.10E+01		1058.00	732.80	1E-07		7E-08	
Chrysene	1.10E+02		2237.00	1545.00	2E-08		1E-08	
Dibenz(a,h)anthracene	1.10E-01		419.30	289.40	4E-06		3E-06	
Fluoranthene		2,400	2409.00	1685.00		0.001		0.0007
Fluorene		2,400	59.51	40.92		0.00002		0.00002
Indeno(1,2,3-c,d)pyrene	1.10E+00		1397.00	974.40	1E-06		9E-07	
Naphthalene	2.00E+00	130	131.20	89.04	7E-08	0.001	4E-08	0.0007
Phenanthrene	not available		1103.00	773.80				
Pyrene		1,800	2644.00	1837.00		0.001		0.001
Total Estimates					**3E-05**	**0.13**	**2E-05**	**0.09**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration		Surface Soil Lead Ratio#	All Depth Lead Ratio#
		Surface (0-1)	All Depths		
	mg/kg	mg/kg		$EPC_{ss}/RSL_{res-lead}$	$EPC_{as}/RSL_{res-lead}$
Lead	400	8.17	7.88	**0.02**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC
= Lead ratio represents the EPC divided by the USEPA residential screening level of 400 mg/kg.
*U.S. EPA Residential Screening Levels. May 2020. Values obtained from Residential Soil (Res Soil) Table.

Exhibit 2 ProUCL Output for 0-1 Foot BGS Soil Interval

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:59:06 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 31021063) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.733	Mean	0.915
Maximum	1.05	Median	0.917
SD	0.109	Std. Error of Mean	0.0446
Coefficient of Variation	0.119	Skewness	-0.701
Mean of logged Data	-0.0953	SD of logged Data	0.124

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.005	95% Adjusted-CLT UCL (Chen-1995)	0.975
		95% Modified-t UCL (Johnson-1978)	1.003

Nonparametric Distribution Free UCLs

95% CLT UCL	0.988	95% Jackknife UCL	1.005
95% Standard Bootstrap UCL	0.983	95% Bootstrap-t UCL	0.993
95% Hall's Bootstrap UCL	0.987	95% Percentile Bootstrap UCL	0.981
95% BCA Bootstrap UCL	0.974		
90% Chebyshev(Mean, Sd) UCL	1.049	95% Chebyshev(Mean, Sd) UCL	1.109
97.5% Chebyshev(Mean, Sd) UCL	1.193	99% Chebyshev(Mean, Sd) UCL	1.359

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.472	Mean	0.708
Maximum	1.61	Median	0.53
SD	0.445	Std. Error of Mean	0.181
Coefficient of Variation	0.628	Skewness	2.382
Mean of logged Data	-0.456	SD of logged Data	0.466

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.074	95% Adjusted-CLT UCL (Chen-1995)	1.195
		95% Modified-t UCL (Johnson-1978)	1.103

Nonparametric Distribution Free UCLs

95% CLT UCL	1.007	95% Jackknife UCL	1.074
95% Standard Bootstrap UCL	0.983	95% Bootstrap-t UCL	3.634
95% Hall's Bootstrap UCL	2.637	95% Percentile Bootstrap UCL	1.06
95% BCA Bootstrap UCL	1.092		
90% Chebyshev(Mean, Sd) UCL	1.253	95% Chebyshev(Mean, Sd) UCL	1.499
97.5% Chebyshev(Mean, Sd) UCL	1.842	99% Chebyshev(Mean, Sd) UCL	2.514

Suggested UCL to Use

95% Student's-t UCL	1.074	or 95% Modified-t UCL	1.103

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.73	Mean	2.391
Maximum	4.48	Median	2.04
SD	1.033	Std. Error of Mean	0.422
Coefficient of Variation	0.432	Skewness	2.344
Mean of logged Data	0.814	SD of logged Data	0.344

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.241	95% Adjusted-CLT UCL (Chen-1995)	3.516
		95% Modified-t UCL (Johnson-1978)	3.308

Nonparametric Distribution Free UCLs

95% CLT UCL	3.085	95% Jackknife UCL	3.241
95% Standard Bootstrap UCL	3.017	95% Bootstrap-t UCL	6.985
95% Hall's Bootstrap UCL	7.477	95% Percentile Bootstrap UCL	3.153
95% BCA Bootstrap UCL	3.277		
90% Chebyshev(Mean, Sd) UCL	3.656	95% Chebyshev(Mean, Sd) UCL	4.229
97.5% Chebyshev(Mean, Sd) UCL	5.025	99% Chebyshev(Mean, Sd) UCL	6.588

Suggested UCL to Use

95% Student's-t UCL	3.241	or 95% Modified-t UCL	3.308

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.29	Mean	14.95
Maximum	29.2	Median	13.33
SD	9.465	Std. Error of Mean	3.864
Coefficient of Variation	0.633	Skewness	0.538
Mean of logged Data	2.519	SD of logged Data	0.683

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.73	95% Adjusted-CLT UCL (Chen-1995)	22.21
		95% Modified-t UCL (Johnson-1978)	22.87

Nonparametric Distribution Free UCLs

95% CLT UCL	21.3	95% Jackknife UCL	22.73
95% Standard Bootstrap UCL	20.84	95% Bootstrap-t UCL	24.09
95% Hall's Bootstrap UCL	20.02	95% Percentile Bootstrap UCL	21.09
95% BCA Bootstrap UCL	21.09		
90% Chebyshev(Mean, Sd) UCL	26.54	95% Chebyshev(Mean, Sd) UCL	31.79
97.5% Chebyshev(Mean, Sd) UCL	39.08	99% Chebyshev(Mean, Sd) UCL	53.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.99	Mean	20.18
Maximum	37.4	Median	18.6
SD	11.89	Std. Error of Mean	4.853
Coefficient of Variation	0.589	Skewness	0.425
Mean of logged Data	2.845	SD of logged Data	0.632

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.96	95% Adjusted-CLT UCL (Chen-1995)	29.06
		95% Modified-t UCL (Johnson-1978)	30.1

Nonparametric Distribution Free UCLs

95% CLT UCL	28.16	95% Jackknife UCL	29.96
95% Standard Bootstrap UCL	27.33	95% Bootstrap-t UCL	33.76
95% Hall's Bootstrap UCL	25.82	95% Percentile Bootstrap UCL	28
95% BCA Bootstrap UCL	27.83		
90% Chebyshev(Mean, Sd) UCL	34.74	95% Chebyshev(Mean, Sd) UCL	41.33
97.5% Chebyshev(Mean, Sd) UCL	50.49	99% Chebyshev(Mean, Sd) UCL	68.47

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.34	Mean	26.02
Maximum	48.5	Median	24.3

SD	15.86	Std. Error of Mean	6.474
Coefficient of Variation	0.609	Skewness	0.354
Mean of logged Data	3.083	SD of logged Data	0.67

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.07	95% Adjusted-CLT UCL (Chen-1995)	37.67
		95% Modified-t UCL (Johnson-1978)	39.23

Nonparametric Distribution Free UCLs

95% CLT UCL	36.67	95% Jackknife UCL	39.07
95% Standard Bootstrap UCL	35.54	95% Bootstrap-t UCL	42.4
95% Hall's Bootstrap UCL	33.31	95% Percentile Bootstrap UCL	35.98
95% BCA Bootstrap UCL	36.23		
90% Chebyshev(Mean, Sd) UCL	45.45	95% Chebyshev(Mean, Sd) UCL	54.24
97.5% Chebyshev(Mean, Sd) UCL	66.46	99% Chebyshev(Mean, Sd) UCL	90.44

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.9	Mean	14.72
Maximum	27.8	Median	13.21
SD	8.851	Std. Error of Mean	3.613
Coefficient of Variation	0.601	Skewness	0.502
Mean of logged Data	2.525	SD of logged Data	0.638

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22	95% Adjusted-CLT UCL (Chen-1995)	21.46
		95% Modified-t UCL (Johnson-1978)	22.13

Nonparametric Distribution Free UCLs

95% CLT UCL	20.66	95% Jackknife UCL	22
95% Standard Bootstrap UCL	20.14	95% Bootstrap-t UCL	25.37
95% Hall's Bootstrap UCL	19.18	95% Percentile Bootstrap UCL	20.45
95% BCA Bootstrap UCL	20.6		
90% Chebyshev(Mean, Sd) UCL	25.56	95% Chebyshev(Mean, Sd) UCL	30.47
97.5% Chebyshev(Mean, Sd) UCL	37.29	99% Chebyshev(Mean, Sd) UCL	50.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.03	Mean	9.942
Maximum	18.7	Median	8.98
SD	5.895	Std. Error of Mean	2.407
Coefficient of Variation	0.593	Skewness	0.512
Mean of logged Data	2.138	SD of logged Data	0.628

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.79	95% Adjusted-CLT UCL (Chen-1995)	14.44
		95% Modified-t UCL (Johnson-1978)	14.87

Nonparametric Distribution Free UCLs

95% CLT UCL	13.9	95% Jackknife UCL	14.79
95% Standard Bootstrap UCL	13.53	95% Bootstrap-t UCL	15.61
95% Hall's Bootstrap UCL	12.86	95% Percentile Bootstrap UCL	13.57
95% BCA Bootstrap UCL	14.09		
90% Chebyshev(Mean, Sd) UCL	17.16	95% Chebyshev(Mean, Sd) UCL	20.43
97.5% Chebyshev(Mean, Sd) UCL	24.97	99% Chebyshev(Mean, Sd) UCL	33.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.22	Mean	20.59
Maximum	38	Median	19.05
SD	12.57	Std. Error of Mean	5.131
Coefficient of Variation	0.61	Skewness	0.308
Mean of logged Data	2.845	SD of logged Data	0.677

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.92	95% Adjusted-CLT UCL (Chen-1995)	29.71
		95% Modified-t UCL (Johnson-1978)	31.03

Nonparametric Distribution Free UCLs

95% CLT UCL	29.03	95% Jackknife UCL	30.92
95% Standard Bootstrap UCL	28.4	95% Bootstrap-t UCL	33.82
95% Hall's Bootstrap UCL	26.13	95% Percentile Bootstrap UCL	28.82
95% BCA Bootstrap UCL	28.4		
90% Chebyshev(Mean, Sd) UCL	35.98	95% Chebyshev(Mean, Sd) UCL	42.95
97.5% Chebyshev(Mean, Sd) UCL	52.63	99% Chebyshev(Mean, Sd) UCL	71.63

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

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.945	Mean	4.323
Maximum	7.16	Median	3.908
SD	1.626	Std. Error of Mean	0.664
Coefficient of Variation	0.376	Skewness	1.195
Mean of logged Data	1.411	SD of logged Data	0.35

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

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.661	95% Adjusted-CLT UCL (Chen-1995)	5.761
		95% Modified-t UCL (Johnson-1978)	5.714

Nonparametric Distribution Free UCLs

95% CLT UCL	5.415	95% Jackknife UCL	5.661
95% Standard Bootstrap UCL	5.312	95% Bootstrap-t UCL	6.767
95% Hall's Bootstrap UCL	5.743	95% Percentile Bootstrap UCL	5.401
95% BCA Bootstrap UCL	5.664		
90% Chebyshev(Mean, Sd) UCL	6.314	95% Chebyshev(Mean, Sd) UCL	7.216
97.5% Chebyshev(Mean, Sd) UCL	8.468	99% Chebyshev(Mean, Sd) UCL	10.93

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.73	Mean	26.22
Maximum	53.3	Median	23.5
SD	17.65	Std. Error of Mean	7.208
Coefficient of Variation	0.673	Skewness	0.58
Mean of logged Data	3.05	SD of logged Data	0.747

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.75	95% Adjusted-CLT UCL (Chen-1995)	39.9
		95% Modified-t UCL (Johnson-1978)	41.03

Nonparametric Distribution Free UCLs

95% CLT UCL	38.08	95% Jackknife UCL	40.75
95% Standard Bootstrap UCL	37.21	95% Bootstrap-t UCL	44.25
95% Hall's Bootstrap UCL	36.39	95% Percentile Bootstrap UCL	37.08

95% BCA Bootstrap UCL	37.58		
90% Chebyshev(Mean, Sd) UCL	47.84	95% Chebyshev(Mean, Sd) UCL	57.64
97.5% Chebyshev(Mean, Sd) UCL	71.23	99% Chebyshev(Mean, Sd) UCL	97.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.18	Mean	1.223
Maximum	1.265	Median	1.225
SD	0.0304	Std. Error of Mean	0.0124
Coefficient of Variation	0.0249	Skewness	-0.123
Mean of logged Data	0.201	SD of logged Data	0.0249

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.248	95% Adjusted-CLT UCL (Chen-1995)	1.243
		95% Modified-t UCL (Johnson-1978)	1.248

Nonparametric Distribution Free UCLs

95% CLT UCL	1.244	95% Jackknife UCL	1.248
95% Standard Bootstrap UCL	1.242	95% Bootstrap-t UCL	1.247
95% Hall's Bootstrap UCL	1.248	95% Percentile Bootstrap UCL	1.241
95% BCA Bootstrap UCL	1.238		
90% Chebyshev(Mean, Sd) UCL	1.261	95% Chebyshev(Mean, Sd) UCL	1.278
97.5% Chebyshev(Mean, Sd) UCL	1.301	99% Chebyshev(Mean, Sd) UCL	1.347

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.19	Mean	16.04
Maximum	32.3	Median	14.11
SD	10.11	Std. Error of Mean	4.128
Coefficient of Variation	0.63	Skewness	0.779
Mean of logged Data	2.602	SD of logged Data	0.651

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.36	95% Adjusted-CLT UCL (Chen-1995)	24.24
		95% Modified-t UCL (Johnson-1978)	24.58

Nonparametric Distribution Free UCLs

95% CLT UCL	22.83	95% Jackknife UCL	24.36
95% Standard Bootstrap UCL	22.28	95% Bootstrap-t UCL	27.4
95% Hall's Bootstrap UCL	22.31	95% Percentile Bootstrap UCL	22.56
95% BCA Bootstrap UCL	22.57		
90% Chebyshev(Mean, Sd) UCL	28.43	95% Chebyshev(Mean, Sd) UCL	34.04
97.5% Chebyshev(Mean, Sd) UCL	41.82	99% Chebyshev(Mean, Sd) UCL	57.12

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.4	Mean	1.647
Maximum	1.99	Median	1.635
SD	0.226	Std. Error of Mean	0.0922
Coefficient of Variation	0.137	Skewness	0.467
Mean of logged Data	0.491	SD of logged Data	0.136

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.832	95% Adjusted-CLT UCL (Chen-1995)	1.817
		95% Modified-t UCL (Johnson-1978)	1.835

Nonparametric Distribution Free UCLs

95% CLT UCL	1.798	95% Jackknife UCL	1.832
95% Standard Bootstrap UCL	1.786	95% Bootstrap-t UCL	1.859
95% Hall's Bootstrap UCL	1.813	95% Percentile Bootstrap UCL	1.783
95% BCA Bootstrap UCL	1.802		
90% Chebyshev(Mean, Sd) UCL	1.923	95% Chebyshev(Mean, Sd) UCL	2.048
97.5% Chebyshev(Mean, Sd) UCL	2.222	99% Chebyshev(Mean, Sd) UCL	2.564

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.33	Mean	11.4
Maximum	26.6	Median	9.505
SD	8.634	Std. Error of Mean	3.525
Coefficient of Variation	0.757	Skewness	1.225
Mean of logged Data	2.193	SD of logged Data	0.769

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.51	95% Adjusted-CLT UCL (Chen-1995)	19.08
		95% Modified-t UCL (Johnson-1978)	18.8

Nonparametric Distribution Free UCLs

95% CLT UCL	17.2	95% Jackknife UCL	18.51
95% Standard Bootstrap UCL	16.7	95% Bootstrap-t UCL	22.3
95% Hall's Bootstrap UCL	20.38	95% Percentile Bootstrap UCL	17.1
95% BCA Bootstrap UCL	18.87		
90% Chebyshev(Mean, Sd) UCL	21.98	95% Chebyshev(Mean, Sd) UCL	26.77

97.5% Chebyshev(Mean, Sd) UCL	33.42	99% Chebyshev(Mean, Sd) UCL	46.47

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.73	Mean	24.67
Maximum	48	Median	22.75
SD	15.86	Std. Error of Mean	6.474
Coefficient of Variation	0.643	Skewness	0.442
Mean of logged Data	3.006	SD of logged Data	0.717

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.72	95% Adjusted-CLT UCL (Chen-1995)	36.57
		95% Modified-t UCL (Johnson-1978)	37.91

Nonparametric Distribution Free UCLs

95% CLT UCL	35.32	95% Jackknife UCL	37.72
95% Standard Bootstrap UCL	34.52	95% Bootstrap-t UCL	40.83
95% Hall's Bootstrap UCL	32.61	95% Percentile Bootstrap UCL	34.57
95% BCA Bootstrap UCL	34.88		
90% Chebyshev(Mean, Sd) UCL	44.09	95% Chebyshev(Mean, Sd) UCL	52.89
97.5% Chebyshev(Mean, Sd) UCL	65.1	99% Chebyshev(Mean, Sd) UCL	89.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	12.4	Mean	13.48
Maximum	14.6	Median	13.3
SD	0.833	Std. Error of Mean	0.34
Coefficient of Variation	0.0618	Skewness	0.258
Mean of logged Data	2.6	SD of logged Data	0.0616

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.17	95% Adjusted-CLT UCL (Chen-1995)	14.08
		95% Modified-t UCL (Johnson-1978)	14.17

Nonparametric Distribution Free UCLs

95% CLT UCL	14.04	95% Jackknife UCL	14.17
95% Standard Bootstrap UCL	14	95% Bootstrap-t UCL	14.54
95% Hall's Bootstrap UCL	14.5	95% Percentile Bootstrap UCL	14.02
95% BCA Bootstrap UCL	14		
90% Chebyshev(Mean, Sd) UCL	14.5	95% Chebyshev(Mean, Sd) UCL	14.97
97.5% Chebyshev(Mean, Sd) UCL	15.61	99% Chebyshev(Mean, Sd) UCL	16.87

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.7	Mean	24.95
Maximum	63.4	Median	16.65
SD	19.19	Std. Error of Mean	7.833
Coefficient of Variation	0.769	Skewness	2.265
Mean of logged Data	3.049	SD of logged Data	0.573

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.73	95% Adjusted-CLT UCL (Chen-1995)	45.57
		95% Modified-t UCL (Johnson-1978)	41.94

Nonparametric Distribution Free UCLs

95% CLT UCL	37.83	95% Jackknife UCL	40.73
95% Standard Bootstrap UCL	36.63	95% Bootstrap-t UCL	164.7
95% Hall's Bootstrap UCL	121.4	95% Percentile Bootstrap UCL	39.55
95% BCA Bootstrap UCL	41.28		
90% Chebyshev(Mean, Sd) UCL	48.45	95% Chebyshev(Mean, Sd) UCL	59.09
97.5% Chebyshev(Mean, Sd) UCL	73.86	99% Chebyshev(Mean, Sd) UCL	102.9

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	44.6	Mean	47.4
Maximum	54.2	Median	46.9
SD	3.535	Std. Error of Mean	1.443
Coefficient of Variation	0.0746	Skewness	1.835
Mean of logged Data	3.856	SD of logged Data	0.0716

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

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.31	95% Adjusted-CLT UCL (Chen-1995)	50.93
		95% Modified-t UCL (Johnson-1978)	50.49

Nonparametric Distribution Free UCLs

95% CLT UCL	49.77	95% Jackknife UCL	50.31
95% Standard Bootstrap UCL	49.64	95% Bootstrap-t UCL	53.08
95% Hall's Bootstrap UCL	60.23	95% Percentile Bootstrap UCL	49.8
95% BCA Bootstrap UCL	50.57		
90% Chebyshev(Mean, Sd) UCL	51.73	95% Chebyshev(Mean, Sd) UCL	53.69
97.5% Chebyshev(Mean, Sd) UCL	56.41	99% Chebyshev(Mean, Sd) UCL	61.76

Suggested UCL to Use

95% Student's-t UCL	50.31	or 95% Modified-t UCL	50.49

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:01:22 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 31021078) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.843	Mean	1.505
Maximum	4.04	Median	0.97
SD	1.249	Std. Error of Mean	0.51
Coefficient of Variation	0.83	Skewness	2.391
Mean of logged Data	0.224	SD of logged Data	0.588

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.532	95% Adjusted-CLT UCL (Chen-1995)	2.875
		95% Modified-t UCL (Johnson-1978)	2.615

Nonparametric Distribution Free UCLs

95% CLT UCL	2.343	95% Jackknife UCL	2.532
95% Standard Bootstrap UCL	2.254	95% Bootstrap-t UCL	13.29
95% Hall's Bootstrap UCL	11.21	95% Percentile Bootstrap UCL	2.482
95% BCA Bootstrap UCL	2.596		
90% Chebyshev(Mean, Sd) UCL	3.034	95% Chebyshev(Mean, Sd) UCL	3.727
97.5% Chebyshev(Mean, Sd) UCL	4.689	99% Chebyshev(Mean, Sd) UCL	6.578

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	3.727

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.462	Mean	0.726
Maximum	1.13	Median	0.671
SD	0.269	Std. Error of Mean	0.11
Coefficient of Variation	0.37	Skewness	0.564
Mean of logged Data	-0.377	SD of logged Data	0.367

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.946	95% Adjusted-CLT UCL (Chen-1995)	0.933
		95% Modified-t UCL (Johnson-1978)	0.951

Nonparametric Distribution Free UCLs

95% CLT UCL	0.906	95% Jackknife UCL	0.946
95% Standard Bootstrap UCL	0.887	95% Bootstrap-t UCL	1
95% Hall's Bootstrap UCL	0.861	95% Percentile Bootstrap UCL	0.89
95% BCA Bootstrap UCL	0.915		
90% Chebyshev(Mean, Sd) UCL	1.054	95% Chebyshev(Mean, Sd) UCL	1.204
97.5% Chebyshev(Mean, Sd) UCL	1.41	99% Chebyshev(Mean, Sd) UCL	1.817

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

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.02	Mean	2.243
Maximum	2.81	Median	2.103
SD	0.298	Std. Error of Mean	0.122
Coefficient of Variation	0.133	Skewness	1.831
Mean of logged Data	0.801	SD of logged Data	0.124

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

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

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	2.489	95% Adjusted-CLT UCL (Chen-1995)	2.541
		95% Modified-t UCL (Johnson-1978)	2.504

Nonparametric Distribution Free UCLs

95% CLT UCL	2.444	95% Jackknife UCL	2.489
95% Standard Bootstrap UCL	2.422	95% Bootstrap-t UCL	3.607
95% Hall's Bootstrap UCL	4.039	95% Percentile Bootstrap UCL	2.453
95% BCA Bootstrap UCL	2.534		
90% Chebyshev(Mean, Sd) UCL	2.609	95% Chebyshev(Mean, Sd) UCL	2.774
97.5% Chebyshev(Mean, Sd) UCL	3.004	99% Chebyshev(Mean, Sd) UCL	3.455

Suggested UCL to Use

95% Student's-t UCL	2.489	or 95% Modified-t UCL	2.504

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.72	Mean	15.31
Maximum	23.5	Median	17.2
SD	7.937	Std. Error of Mean	3.24
Coefficient of Variation	0.518	Skewness	-0.578
Mean of logged Data	2.557	SD of logged Data	0.718

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.84	95% Adjusted-CLT UCL (Chen-1995)	19.82
		95% Modified-t UCL (Johnson-1978)	21.71

Nonparametric Distribution Free UCLs

95% CLT UCL	20.64	95% Jackknife UCL	21.84
95% Standard Bootstrap UCL	20.26	95% Bootstrap-t UCL	20.51
95% Hall's Bootstrap UCL	19.02	95% Percentile Bootstrap UCL	20.23
95% BCA Bootstrap UCL	19.51		
90% Chebyshev(Mean, Sd) UCL	25.03	95% Chebyshev(Mean, Sd) UCL	29.44
97.5% Chebyshev(Mean, Sd) UCL	35.55	99% Chebyshev(Mean, Sd) UCL	47.55

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

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.19	Mean	17.85
Maximum	28	Median	20.3
SD	9.217	Std. Error of Mean	3.763
Coefficient of Variation	0.516	Skewness	-0.633
Mean of logged Data	2.707	SD of logged Data	0.73

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.43	95% Adjusted-CLT UCL (Chen-1995)	23
		95% Modified-t UCL (Johnson-1978)	25.27

Nonparametric Distribution Free UCLs

95% CLT UCL	24.04	95% Jackknife UCL	25.43
95% Standard Bootstrap UCL	23.58	95% Bootstrap-t UCL	23.95
95% Hall's Bootstrap UCL	22.32	95% Percentile Bootstrap UCL	23.27
95% BCA Bootstrap UCL	22.88		
90% Chebyshev(Mean, Sd) UCL	29.14	95% Chebyshev(Mean, Sd) UCL	34.25
97.5% Chebyshev(Mean, Sd) UCL	41.35	99% Chebyshev(Mean, Sd) UCL	55.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	6.87	Mean	26
Maximum	39	Median	30.2
SD	13.02	Std. Error of Mean	5.315
Coefficient of Variation	0.501	Skewness	-0.694
Mean of logged Data	3.099	SD of logged Data	0.687

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.71	95% Adjusted-CLT UCL (Chen-1995)	33.13
		95% Modified-t UCL (Johnson-1978)	36.45

Nonparametric Distribution Free UCLs

95% CLT UCL	34.74	95% Jackknife UCL	36.71
95% Standard Bootstrap UCL	33.99	95% Bootstrap-t UCL	34.61
95% Hall's Bootstrap UCL	31.98	95% Percentile Bootstrap UCL	33.95
95% BCA Bootstrap UCL	33.17		
90% Chebyshev(Mean, Sd) UCL	41.94	95% Chebyshev(Mean, Sd) UCL	49.16
97.5% Chebyshev(Mean, Sd) UCL	59.19	99% Chebyshev(Mean, Sd) UCL	78.88

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

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.41	Mean	13.25
Maximum	20	Median	15.7
SD	6.688	Std. Error of Mean	2.73
Coefficient of Variation	0.505	Skewness	-0.745
Mean of logged Data	2.419	SD of logged Data	0.702

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.75	95% Adjusted-CLT UCL (Chen-1995)	16.85
		95% Modified-t UCL (Johnson-1978)	18.61

Nonparametric Distribution Free UCLs

95% CLT UCL	17.74	95% Jackknife UCL	18.75
95% Standard Bootstrap UCL	17.36	95% Bootstrap-t UCL	17.88
95% Hall's Bootstrap UCL	16.2	95% Percentile Bootstrap UCL	17.22
95% BCA Bootstrap UCL	16.78		
90% Chebyshev(Mean, Sd) UCL	21.44	95% Chebyshev(Mean, Sd) UCL	25.15
97.5% Chebyshev(Mean, Sd) UCL	30.3	99% Chebyshev(Mean, Sd) UCL	40.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.39	Mean	10.03
Maximum	15	Median	11.75
SD	5.155	Std. Error of Mean	2.104
Coefficient of Variation	0.514	Skewness	-0.72
Mean of logged Data	2.131	SD of logged Data	0.728

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.27	95% Adjusted-CLT UCL (Chen-1995)	12.83
		95% Modified-t UCL (Johnson-1978)	14.16

Nonparametric Distribution Free UCLs

95% CLT UCL	13.49	95% Jackknife UCL	14.27
95% Standard Bootstrap UCL	13.11	95% Bootstrap-t UCL	13.21
95% Hall's Bootstrap UCL	12.39	95% Percentile Bootstrap UCL	13.03
95% BCA Bootstrap UCL	12.83		

90% Chebyshev(Mean, Sd) UCL	16.34	95% Chebyshev(Mean, Sd) UCL	19.2
97.5% Chebyshev(Mean, Sd) UCL	23.17	99% Chebyshev(Mean, Sd) UCL	30.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.8	Mean	21.78
Maximum	33.8	Median	24.35
SD	11.24	Std. Error of Mean	4.59
Coefficient of Variation	0.516	Skewness	-0.494
Mean of logged Data	2.919	SD of logged Data	0.689

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.03	95% Adjusted-CLT UCL (Chen-1995)	28.34
		95% Modified-t UCL (Johnson-1978)	30.88

Nonparametric Distribution Free UCLs

95% CLT UCL	29.33	95% Jackknife UCL	31.03
95% Standard Bootstrap UCL	28.71	95% Bootstrap-t UCL	30.1
95% Hall's Bootstrap UCL	26.91	95% Percentile Bootstrap UCL	28.23
95% BCA Bootstrap UCL	28.1		
90% Chebyshev(Mean, Sd) UCL	35.55	95% Chebyshev(Mean, Sd) UCL	41.79
97.5% Chebyshev(Mean, Sd) UCL	50.45	99% Chebyshev(Mean, Sd) UCL	67.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.74	Mean	3.685
Maximum	4.64	Median	3.623
SD	0.727	Std. Error of Mean	0.297
Coefficient of Variation	0.197	Skewness	0.0515
Mean of logged Data	1.288	SD of logged Data	0.2

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.283	95% Adjusted-CLT UCL (Chen-1995)	4.18
		95% Modified-t UCL (Johnson-1978)	4.284

Nonparametric Distribution Free UCLs

95% CLT UCL	4.173	95% Jackknife UCL	4.283
95% Standard Bootstrap UCL	4.137	95% Bootstrap-t UCL	4.407
95% Hall's Bootstrap UCL	4.111	95% Percentile Bootstrap UCL	4.131
95% BCA Bootstrap UCL	4.13		
90% Chebyshev(Mean, Sd) UCL	4.575	95% Chebyshev(Mean, Sd) UCL	4.978
97.5% Chebyshev(Mean, Sd) UCL	5.538	99% Chebyshev(Mean, Sd) UCL	6.637

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.23	Mean	23.07
Maximum	35.7	Median	24.3
SD	11.78	Std. Error of Mean	4.809
Coefficient of Variation	0.511	Skewness	-0.378
Mean of logged Data	2.984	SD of logged Data	0.67

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

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.76	95% Adjusted-CLT UCL (Chen-1995)	30.19
		95% Modified-t UCL (Johnson-1978)	32.64

Nonparametric Distribution Free UCLs

95% CLT UCL	30.98	95% Jackknife UCL	32.76
95% Standard Bootstrap UCL	30.46	95% Bootstrap-t UCL	32.43
95% Hall's Bootstrap UCL	28.57	95% Percentile Bootstrap UCL	29.92
95% BCA Bootstrap UCL	29.89		
90% Chebyshev(Mean, Sd) UCL	37.5	95% Chebyshev(Mean, Sd) UCL	44.03
97.5% Chebyshev(Mean, Sd) UCL	53.1	99% Chebyshev(Mean, Sd) UCL	70.92

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

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

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.65	Mean	14.24
Maximum	22.9	Median	16.2
SD	7.518	Std. Error of Mean	3.069
Coefficient of Variation	0.528	Skewness	-0.539
Mean of logged Data	2.481	SD of logged Data	0.72

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.42	95% Adjusted-CLT UCL (Chen-1995)	18.56
		95% Modified-t UCL (Johnson-1978)	20.31

Nonparametric Distribution Free UCLs

95% CLT UCL	19.28	95% Jackknife UCL	20.42
95% Standard Bootstrap UCL	18.86	95% Bootstrap-t UCL	19.46
95% Hall's Bootstrap UCL	18	95% Percentile Bootstrap UCL	18.77
95% BCA Bootstrap UCL	18.61		
90% Chebyshev(Mean, Sd) UCL	23.44	95% Chebyshev(Mean, Sd) UCL	27.61
97.5% Chebyshev(Mean, Sd) UCL	33.4	99% Chebyshev(Mean, Sd) UCL	44.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.975	Mean	1.958
Maximum	4.35	Median	1.525
SD	1.227	Std. Error of Mean	0.501
Coefficient of Variation	0.627	Skewness	1.991
Mean of logged Data	0.546	SD of logged Data	0.517

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.967	95% Adjusted-CLT UCL (Chen-1995)	3.217
		95% Modified-t UCL (Johnson-1978)	3.035

Nonparametric Distribution Free UCLs

95% CLT UCL	2.782	95% Jackknife UCL	2.967
95% Standard Bootstrap UCL	2.719	95% Bootstrap-t UCL	5.097
95% Hall's Bootstrap UCL	6.82	95% Percentile Bootstrap UCL	2.83
95% BCA Bootstrap UCL	3.08		
90% Chebyshev(Mean, Sd) UCL	3.46	95% Chebyshev(Mean, Sd) UCL	4.141
97.5% Chebyshev(Mean, Sd) UCL	5.086	99% Chebyshev(Mean, Sd) UCL	6.942

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.21	Mean	11.76
Maximum	20	Median	10.95
SD	7.064	Std. Error of Mean	2.884
Coefficient of Variation	0.601	Skewness	0.0634
Mean of logged Data	2.272	SD of logged Data	0.724

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.57	95% Adjusted-CLT UCL (Chen-1995)	16.58
		95% Modified-t UCL (Johnson-1978)	17.58

Nonparametric Distribution Free UCLs

95% CLT UCL	16.5	95% Jackknife UCL	17.57
95% Standard Bootstrap UCL	16.12	95% Bootstrap-t UCL	17.19
95% Hall's Bootstrap UCL	15.41	95% Percentile Bootstrap UCL	15.95
95% BCA Bootstrap UCL	15.87		
90% Chebyshev(Mean, Sd) UCL	20.41	95% Chebyshev(Mean, Sd) UCL	24.33
97.5% Chebyshev(Mean, Sd) UCL	29.76	99% Chebyshev(Mean, Sd) UCL	40.45

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

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.95	Mean	21.09
Maximum	33.1	Median	22.55
SD	10.52	Std. Error of Mean	4.295
Coefficient of Variation	0.499	Skewness	-0.393
Mean of logged Data	2.903	SD of logged Data	0.65

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.75	95% Adjusted-CLT UCL (Chen-1995)	27.42
		95% Modified-t UCL (Johnson-1978)	29.63

Nonparametric Distribution Free UCLs

95% CLT UCL	28.16	95% Jackknife UCL	29.75
95% Standard Bootstrap UCL	27.56	95% Bootstrap-t UCL	29.27
95% Hall's Bootstrap UCL	26.43	95% Percentile Bootstrap UCL	27.35
95% BCA Bootstrap UCL	27.07		
90% Chebyshev(Mean, Sd) UCL	33.98	95% Chebyshev(Mean, Sd) UCL	39.81
97.5% Chebyshev(Mean, Sd) UCL	47.91	99% Chebyshev(Mean, Sd) UCL	63.82

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

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26.3	Mean	42.37
Maximum	71.7	Median	38.65
SD	15.45	Std. Error of Mean	6.309
Coefficient of Variation	0.365	Skewness	1.68
Mean of logged Data	3.699	SD of logged Data	0.328

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.08	95% Adjusted-CLT UCL (Chen-1995)	57.37
		95% Modified-t UCL (Johnson-1978)	55.8

Nonparametric Distribution Free UCLs

95% CLT UCL	52.74	95% Jackknife UCL	55.08
95% Standard Bootstrap UCL	51.86	95% Bootstrap-t UCL	65.14
95% Hall's Bootstrap UCL	108	95% Percentile Bootstrap UCL	52.73
95% BCA Bootstrap UCL	55.25		
90% Chebyshev(Mean, Sd) UCL	61.29	95% Chebyshev(Mean, Sd) UCL	69.87
97.5% Chebyshev(Mean, Sd) UCL	81.76	99% Chebyshev(Mean, Sd) UCL	105.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	62.9	Mean	64.15
Maximum	67.4	Median	63.45
SD	1.719	Std. Error of Mean	0.702
Coefficient of Variation	0.0268	Skewness	1.786
Mean of logged Data	4.161	SD of logged Data	0.0264

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	65.56	95% Adjusted-CLT UCL (Chen-1995)	65.85
		95% Modified-t UCL (Johnson-1978)	65.65

Nonparametric Distribution Free UCLs

95% CLT UCL	65.3	95% Jackknife UCL	65.56
95% Standard Bootstrap UCL	65.15	95% Bootstrap-t UCL	70.06
95% Hall's Bootstrap UCL	70.67	95% Percentile Bootstrap UCL	65.28
95% BCA Bootstrap UCL	65.6		
90% Chebyshev(Mean, Sd) UCL	66.26	95% Chebyshev(Mean, Sd) UCL	67.21
97.5% Chebyshev(Mean, Sd) UCL	68.53	99% Chebyshev(Mean, Sd) UCL	71.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:03:20 AM
From File	Table 1. Parcel Analytical Results (APN31021080) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Sample ID

General Statistics

Total Number of Observations	0	Number of Distinct Observations	0
		Number of Missing Observations	6
Minimum	N/A	Mean	N/A
Maximum	N/A	Median	N/A

Warning: This data set only has 0 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable Sample ID was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.75	Mean	1.982
Maximum	2.125	Median	1.978
SD	0.133	Std. Error of Mean	0.0544
Coefficient of Variation	0.0673	Skewness	-0.994
Mean of logged Data	0.682	SD of logged Data	0.069

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

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.091	95% Adjusted-CLT UCL (Chen-1995)	2.048
		95% Modified-t UCL (Johnson-1978)	2.088

Nonparametric Distribution Free UCLs

95% CLT UCL	2.071	95% Jackknife UCL	2.091
95% Standard Bootstrap UCL	2.065	95% Bootstrap-t UCL	2.074
95% Hall's Bootstrap UCL	2.07	95% Percentile Bootstrap UCL	2.063
95% BCA Bootstrap UCL	2.048		

90% Chebyshev(Mean, Sd) UCL	2.145	95% Chebyshev(Mean, Sd) UCL	2.219
97.5% Chebyshev(Mean, Sd) UCL	2.321	99% Chebyshev(Mean, Sd) UCL	2.523

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.86	Mean	2
Maximum	2.125	Median	1.978
SD	0.0979	Std. Error of Mean	0.04
Coefficient of Variation	0.049	Skewness	0.0367
Mean of logged Data	0.692	SD of logged Data	0.049

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.081	95% Adjusted-CLT UCL (Chen-1995)	2.066
		95% Modified-t UCL (Johnson-1978)	2.081

Nonparametric Distribution Free UCLs

95% CLT UCL	2.066	95% Jackknife UCL	2.081
95% Standard Bootstrap UCL	2.06	95% Bootstrap-t UCL	2.111
95% Hall's Bootstrap UCL	2.152	95% Percentile Bootstrap UCL	2.059
95% BCA Bootstrap UCL	2.062		
90% Chebyshev(Mean, Sd) UCL	2.12	95% Chebyshev(Mean, Sd) UCL	2.174
97.5% Chebyshev(Mean, Sd) UCL	2.25	99% Chebyshev(Mean, Sd) UCL	2.398

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.63	Mean	3.078
Maximum	4.06	Median	2.95
SD	0.505	Std. Error of Mean	0.206
Coefficient of Variation	0.164	Skewness	1.943
Mean of logged Data	1.114	SD of logged Data	0.151

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.493	95% Adjusted-CLT UCL (Chen-1995)	3.591
		95% Modified-t UCL (Johnson-1978)	3.52

Nonparametric Distribution Free UCLs

95% CLT UCL	3.417	95% Jackknife UCL	3.493
95% Standard Bootstrap UCL	3.39	95% Bootstrap-t UCL	3.974
95% Hall's Bootstrap UCL	4.911	95% Percentile Bootstrap UCL	3.442
95% BCA Bootstrap UCL	3.518		
90% Chebyshev(Mean, Sd) UCL	3.696	95% Chebyshev(Mean, Sd) UCL	3.976
97.5% Chebyshev(Mean, Sd) UCL	4.365	99% Chebyshev(Mean, Sd) UCL	5.128

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.45	Mean	3.009
Maximum	3.27	Median	3.043
SD	0.294	Std. Error of Mean	0.12
Coefficient of Variation	0.0977	Skewness	-1.726
Mean of logged Data	1.097	SD of logged Data	0.104

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.251	95% Adjusted-CLT UCL (Chen-1995)	3.116
		95% Modified-t UCL (Johnson-1978)	3.237

Nonparametric Distribution Free UCLs

95% CLT UCL	3.207	95% Jackknife UCL	3.251
95% Standard Bootstrap UCL	3.189	95% Bootstrap-t UCL	3.177
95% Hall's Bootstrap UCL	3.14	95% Percentile Bootstrap UCL	3.173
95% BCA Bootstrap UCL	3.145		
90% Chebyshev(Mean, Sd) UCL	3.369	95% Chebyshev(Mean, Sd) UCL	3.532
97.5% Chebyshev(Mean, Sd) UCL	3.759	99% Chebyshev(Mean, Sd) UCL	4.203

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.96	Mean	2.297
Maximum	3.18	Median	2.113
SD	0.464	Std. Error of Mean	0.189
Coefficient of Variation	0.202	Skewness	1.833
Mean of logged Data	0.817	SD of logged Data	0.183

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.678	95% Adjusted-CLT UCL (Chen-1995)	2.76
		95% Modified-t UCL (Johnson-1978)	2.702

Nonparametric Distribution Free UCLs

95% CLT UCL	2.608	95% Jackknife UCL	2.678
95% Standard Bootstrap UCL	2.576	95% Bootstrap-t UCL	3.85
95% Hall's Bootstrap UCL	4.393	95% Percentile Bootstrap UCL	2.617

95% BCA Bootstrap UCL	2.676		
90% Chebyshev(Mean, Sd) UCL	2.865	95% Chebyshev(Mean, Sd) UCL	3.122
97.5% Chebyshev(Mean, Sd) UCL	3.48	99% Chebyshev(Mean, Sd) UCL	4.182

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.9	Mean	2.491
Maximum	3.78	Median	2.043
SD	0.804	Std. Error of Mean	0.328
Coefficient of Variation	0.323	Skewness	1.145
Mean of logged Data	0.874	SD of logged Data	0.297

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

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.152	95% Adjusted-CLT UCL (Chen-1995)	3.195
		95% Modified-t UCL (Johnson-1978)	3.178

Nonparametric Distribution Free UCLs

95% CLT UCL	3.031	95% Jackknife UCL	3.152
95% Standard Bootstrap UCL	2.982	95% Bootstrap-t UCL	7.939
95% Hall's Bootstrap UCL	8.359	95% Percentile Bootstrap UCL	3.033
95% BCA Bootstrap UCL	3.074		
90% Chebyshev(Mean, Sd) UCL	3.476	95% Chebyshev(Mean, Sd) UCL	3.922
97.5% Chebyshev(Mean, Sd) UCL	4.541	99% Chebyshev(Mean, Sd) UCL	5.757

Suggested UCL to Use

95% Student's-t UCL	3.152	or 95% Modified-t UCL	3.178

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.16	Mean	2.961
Maximum	3.27	Median	3.043
SD	0.407	Std. Error of Mean	0.166
Coefficient of Variation	0.137	Skewness	-2.067
Mean of logged Data	1.076	SD of logged Data	0.154

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.295	95% Adjusted-CLT UCL (Chen-1995)	3.084
		95% Modified-t UCL (Johnson-1978)	3.272

Nonparametric Distribution Free UCLs

95% CLT UCL	3.234	95% Jackknife UCL	3.295
95% Standard Bootstrap UCL	3.21	95% Bootstrap-t UCL	3.169
95% Hall's Bootstrap UCL	3.127	95% Percentile Bootstrap UCL	3.157
95% BCA Bootstrap UCL	3.141		
90% Chebyshev(Mean, Sd) UCL	3.459	95% Chebyshev(Mean, Sd) UCL	3.684
97.5% Chebyshev(Mean, Sd) UCL	3.997	99% Chebyshev(Mean, Sd) UCL	4.612

Suggested UCL to Use

95% Student's-t UCL	3.295	or 95% Modified-t UCL	3.272

Recommended UCL exceeds the maximum observation

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

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.35	Mean	2.996
Maximum	3.29	Median	3.043
SD	0.336	Std. Error of Mean	0.137
Coefficient of Variation	0.112	Skewness	-1.829
Mean of logged Data	1.091	SD of logged Data	0.121

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

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.272	95% Adjusted-CLT UCL (Chen-1995)	3.112
		95% Modified-t UCL (Johnson-1978)	3.255

Nonparametric Distribution Free UCLs

95% CLT UCL	3.221	95% Jackknife UCL	3.272
95% Standard Bootstrap UCL	3.204	95% Bootstrap-t UCL	3.181
95% Hall's Bootstrap UCL	3.143	95% Percentile Bootstrap UCL	3.17
95% BCA Bootstrap UCL	3.148		
90% Chebyshev(Mean, Sd) UCL	3.407	95% Chebyshev(Mean, Sd) UCL	3.593
97.5% Chebyshev(Mean, Sd) UCL	3.852	99% Chebyshev(Mean, Sd) UCL	4.36

Suggested UCL to Use

95% Student's-t UCL	3.272	or 95% Modified-t UCL	3.255

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

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.545	Mean	6.733
Maximum	10	Median	6.72
SD	3.195	Std. Error of Mean	1.304
Coefficient of Variation	0.474	Skewness	0.00592
Mean of logged Data	1.803	SD of logged Data	0.509

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.361	95% Adjusted-CLT UCL (Chen-1995)	8.882
		95% Modified-t UCL (Johnson-1978)	9.362

Nonparametric Distribution Free UCLs

95% CLT UCL	8.879	95% Jackknife UCL	9.361
95% Standard Bootstrap UCL	8.706	95% Bootstrap-t UCL	9.47
95% Hall's Bootstrap UCL	7.803	95% Percentile Bootstrap UCL	8.699
95% BCA Bootstrap UCL	8.695		
90% Chebyshev(Mean, Sd) UCL	10.65	95% Chebyshev(Mean, Sd) UCL	12.42
97.5% Chebyshev(Mean, Sd) UCL	14.88	99% Chebyshev(Mean, Sd) UCL	19.71

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.99	Mean	8.94
Maximum	15.5	Median	7.645
SD	3.276	Std. Error of Mean	1.337
Coefficient of Variation	0.366	Skewness	2.253
Mean of logged Data	2.147	SD of logged Data	0.302

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.63	95% Adjusted-CLT UCL (Chen-1995)	12.45
		95% Modified-t UCL (Johnson-1978)	11.84

Nonparametric Distribution Free UCLs

95% CLT UCL	11.14	95% Jackknife UCL	11.63
95% Standard Bootstrap UCL	10.94	95% Bootstrap-t UCL	20.25
95% Hall's Bootstrap UCL	21.46	95% Percentile Bootstrap UCL	11.42
95% BCA Bootstrap UCL	11.75		
90% Chebyshev(Mean, Sd) UCL	12.95	95% Chebyshev(Mean, Sd) UCL	14.77
97.5% Chebyshev(Mean, Sd) UCL	17.29	99% Chebyshev(Mean, Sd) UCL	22.25

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	26.1	Mean	29.95
Maximum	33.9	Median	30.15
SD	3.64	Std. Error of Mean	1.486
Coefficient of Variation	0.122	Skewness	-0.0108
Mean of logged Data	3.393	SD of logged Data	0.122

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.94	95% Adjusted-CLT UCL (Chen-1995)	32.39
		95% Modified-t UCL (Johnson-1978)	32.94

Nonparametric Distribution Free UCLs

95% CLT UCL	32.39	95% Jackknife UCL	32.94
95% Standard Bootstrap UCL	32.16	95% Bootstrap-t UCL	33.05
95% Hall's Bootstrap UCL	31.27	95% Percentile Bootstrap UCL	32.17
95% BCA Bootstrap UCL	32.15		
90% Chebyshev(Mean, Sd) UCL	34.41	95% Chebyshev(Mean, Sd) UCL	36.43
97.5% Chebyshev(Mean, Sd) UCL	39.23	99% Chebyshev(Mean, Sd) UCL	44.73

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

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

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:07:08 AM
From File	Table 1. Parcel Analytical Results (APN31021080A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.66	Mean	0.957
Maximum	1.43	Median	0.861
SD	0.293	Std. Error of Mean	0.12
Coefficient of Variation	0.307	Skewness	0.899
Mean of logged Data	-0.0812	SD of logged Data	0.294

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.198	95% Adjusted-CLT UCL (Chen-1995)	1.201
		95% Modified-t UCL (Johnson-1978)	1.205

Nonparametric Distribution Free UCLs

95% CLT UCL	1.154	95% Jackknife UCL	1.198
95% Standard Bootstrap UCL	1.134	95% Bootstrap-t UCL	1.362
95% Hall's Bootstrap UCL	1.356	95% Percentile Bootstrap UCL	1.146
95% BCA Bootstrap UCL	1.165		
90% Chebyshev(Mean, Sd) UCL	1.316	95% Chebyshev(Mean, Sd) UCL	1.479
97.5% Chebyshev(Mean, Sd) UCL	1.705	99% Chebyshev(Mean, Sd) UCL	2.149

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	0.442	Mean	0.635
Maximum	0.967	Median	0.497
SD	0.289	Std. Error of Mean	0.167
Coefficient of Variation	0.454	Skewness	1.662
Mean of logged Data	-0.516	SD of logged Data	0.422

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.122	95% Adjusted-CLT UCL (Chen-1995)	1.08
		95% Modified-t UCL (Johnson-1978)	1.148

Nonparametric Distribution Free UCLs

95% CLT UCL	0.909	95% Jackknife UCL	1.122
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.135	95% Chebyshev(Mean, Sd) UCL	1.361
97.5% Chebyshev(Mean, Sd) UCL	1.676	99% Chebyshev(Mean, Sd) UCL	2.293

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

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

ANTHRACENE

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	2.27	Mean	3.125
Maximum	3.98	Median	3.125

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable ANTHRACENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.89	Mean	28.55
Maximum	69.4	Median	19.85
SD	22.8	Std. Error of Mean	9.309
Coefficient of Variation	0.799	Skewness	1.428
Mean of logged Data	3.107	SD of logged Data	0.756

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.31	95% Adjusted-CLT UCL (Chen-1995)	49.66
		95% Modified-t UCL (Johnson-1978)	48.21

Nonparametric Distribution Free UCLs

95% CLT UCL	43.86	95% Jackknife UCL	47.31
95% Standard Bootstrap UCL	42.71	95% Bootstrap-t UCL	79.96
95% Hall's Bootstrap UCL	127.6	95% Percentile Bootstrap UCL	43.08
95% BCA Bootstrap UCL	47.53		
90% Chebyshev(Mean, Sd) UCL	56.48	95% Chebyshev(Mean, Sd) UCL	69.13
97.5% Chebyshev(Mean, Sd) UCL	86.69	99% Chebyshev(Mean, Sd) UCL	121.2

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

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.5	Mean	62.93
Maximum	172	Median	34.5
SD	59.11	Std. Error of Mean	24.13
Coefficient of Variation	0.939	Skewness	1.654
Mean of logged Data	3.83	SD of logged Data	0.825

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	111.6	95% Adjusted-CLT UCL (Chen-1995)	120
		95% Modified-t UCL (Johnson-1978)	114.3

Nonparametric Distribution Free UCLs

95% CLT UCL	102.6	95% Jackknife UCL	111.6
95% Standard Bootstrap UCL	98.29	95% Bootstrap-t UCL	343.7
95% Hall's Bootstrap UCL	327.6	95% Percentile Bootstrap UCL	101.9
95% BCA Bootstrap UCL	112.5		
90% Chebyshev(Mean, Sd) UCL	135.3	95% Chebyshev(Mean, Sd) UCL	168.1
97.5% Chebyshev(Mean, Sd) UCL	213.6	99% Chebyshev(Mean, Sd) UCL	303.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	29.6	Mean	91.07
Maximum	237	Median	56.75
SD	79.28	Std. Error of Mean	32.37
Coefficient of Variation	0.871	Skewness	1.617
Mean of logged Data	4.239	SD of logged Data	0.78

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	156.3	95% Adjusted-CLT UCL (Chen-1995)	167.1
		95% Modified-t UCL (Johnson-1978)	159.8

Nonparametric Distribution Free UCLs

95% CLT UCL	144.3	95% Jackknife UCL	156.3
95% Standard Bootstrap UCL	139.7	95% Bootstrap-t UCL	327.6
95% Hall's Bootstrap UCL	424.3	95% Percentile Bootstrap UCL	144.1
95% BCA Bootstrap UCL	158.4		
90% Chebyshev(Mean, Sd) UCL	188.2	95% Chebyshev(Mean, Sd) UCL	232.2
97.5% Chebyshev(Mean, Sd) UCL	293.2	99% Chebyshev(Mean, Sd) UCL	413.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.1	Mean	75.1
Maximum	193	Median	47.9
SD	64.75	Std. Error of Mean	26.43
Coefficient of Variation	0.862	Skewness	1.561
Mean of logged Data	4.048	SD of logged Data	0.78

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	128.4	95% Adjusted-CLT UCL (Chen-1995)	136.6
		95% Modified-t UCL (Johnson-1978)	131.2

Nonparametric Distribution Free UCLs

95% CLT UCL	118.6	95% Jackknife UCL	128.4
95% Standard Bootstrap UCL	115.5	95% Bootstrap-t UCL	299.8
95% Hall's Bootstrap UCL	405.1	95% Percentile Bootstrap UCL	117.1
95% BCA Bootstrap UCL	127.5		
90% Chebyshev(Mean, Sd) UCL	154.4	95% Chebyshev(Mean, Sd) UCL	190.3
97.5% Chebyshev(Mean, Sd) UCL	240.2	99% Chebyshev(Mean, Sd) UCL	338.1

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

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	32.95
Maximum	87.2	Median	21.15
SD	28.54	Std. Error of Mean	11.65

Coefficient of Variation	0.866	Skewness	1.82
Mean of logged Data	3.242	SD of logged Data	0.742

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.43	95% Adjusted-CLT UCL (Chen-1995)	61.37
		95% Modified-t UCL (Johnson-1978)	57.87

Nonparametric Distribution Free UCLs

95% CLT UCL	52.12	95% Jackknife UCL	56.43
95% Standard Bootstrap UCL	50.74	95% Bootstrap-t UCL	115.6
95% Hall's Bootstrap UCL	141	95% Percentile Bootstrap UCL	52.83
95% BCA Bootstrap UCL	57.52		
90% Chebyshev(Mean, Sd) UCL	67.91	95% Chebyshev(Mean, Sd) UCL	83.74
97.5% Chebyshev(Mean, Sd) UCL	105.7	99% Chebyshev(Mean, Sd) UCL	148.9

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

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.6	Mean	39.35
Maximum	95.9	Median	27
SD	31.19	Std. Error of Mean	12.74
Coefficient of Variation	0.793	Skewness	1.5
Mean of logged Data	3.437	SD of logged Data	0.736

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	65.01	95% Adjusted-CLT UCL (Chen-1995)	68.63
		95% Modified-t UCL (Johnson-1978)	66.31

Nonparametric Distribution Free UCLs

95% CLT UCL	60.3	95% Jackknife UCL	65.01
95% Standard Bootstrap UCL	58.79	95% Bootstrap-t UCL	121.7
95% Hall's Bootstrap UCL	180.5	95% Percentile Bootstrap UCL	59.05
95% BCA Bootstrap UCL	63.48		
90% Chebyshev(Mean, Sd) UCL	77.56	95% Chebyshev(Mean, Sd) UCL	94.86
97.5% Chebyshev(Mean, Sd) UCL	118.9	99% Chebyshev(Mean, Sd) UCL	166.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.27	Mean	16.92
Maximum	42.7	Median	11.15
SD	14.3	Std. Error of Mean	5.84
Coefficient of Variation	0.845	Skewness	1.489
Mean of logged Data	2.56	SD of logged Data	0.785

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.69	95% Adjusted-CLT UCL (Chen-1995)	30.32
		95% Modified-t UCL (Johnson-1978)	29.28

Nonparametric Distribution Free UCLs

95% CLT UCL	26.53	95% Jackknife UCL	28.69
95% Standard Bootstrap UCL	25.51	95% Bootstrap-t UCL	58.54
95% Hall's Bootstrap UCL	84.73	95% Percentile Bootstrap UCL	26.05
95% BCA Bootstrap UCL	28.43		
90% Chebyshev(Mean, Sd) UCL	34.44	95% Chebyshev(Mean, Sd) UCL	42.38
97.5% Chebyshev(Mean, Sd) UCL	53.39	99% Chebyshev(Mean, Sd) UCL	75.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.98	Mean	25.73
Maximum	59.2	Median	18.15
SD	19.3	Std. Error of Mean	7.878
Coefficient of Variation	0.75	Skewness	1.282
Mean of logged Data	3.029	SD of logged Data	0.713

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.6	95% Adjusted-CLT UCL (Chen-1995)	43.09
		95% Modified-t UCL (Johnson-1978)	42.29

Nonparametric Distribution Free UCLs

95% CLT UCL	38.69	95% Jackknife UCL	41.6
95% Standard Bootstrap UCL	37.6	95% Bootstrap-t UCL	76.23
95% Hall's Bootstrap UCL	113.5	95% Percentile Bootstrap UCL	38.35
95% BCA Bootstrap UCL	41.08		
90% Chebyshev(Mean, Sd) UCL	49.36	95% Chebyshev(Mean, Sd) UCL	60.07
97.5% Chebyshev(Mean, Sd) UCL	74.93	99% Chebyshev(Mean, Sd) UCL	104.1

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

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.7	Mean	72.97
Maximum	188	Median	45.15
SD	63.25	Std. Error of Mean	25.82
Coefficient of Variation	0.867	Skewness	1.564
Mean of logged Data	4.019	SD of logged Data	0.778

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

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	125	95% Adjusted-CLT UCL (Chen-1995)	133.1
		95% Modified-t UCL (Johnson-1978)	127.7

Nonparametric Distribution Free UCLs

95% CLT UCL	115.4	95% Jackknife UCL	125
95% Standard Bootstrap UCL	112.1	95% Bootstrap-t UCL	321.1
95% Hall's Bootstrap UCL	417.3	95% Percentile Bootstrap UCL	119.3
95% BCA Bootstrap UCL	126.4		
90% Chebyshev(Mean, Sd) UCL	150.4	95% Chebyshev(Mean, Sd) UCL	185.5
97.5% Chebyshev(Mean, Sd) UCL	234.2	99% Chebyshev(Mean, Sd) UCL	329.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.04	Mean	2.42
Maximum	4.46	Median	2.045
SD	1.254	Std. Error of Mean	0.512
Coefficient of Variation	0.518	Skewness	0.858
Mean of logged Data	0.772	SD of logged Data	0.523

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

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.452	95% Adjusted-CLT UCL (Chen-1995)	3.454
		95% Modified-t UCL (Johnson-1978)	3.482

Nonparametric Distribution Free UCLs

95% CLT UCL	3.262	95% Jackknife UCL	3.452
95% Standard Bootstrap UCL	3.198	95% Bootstrap-t UCL	4.487
95% Hall's Bootstrap UCL	5.733	95% Percentile Bootstrap UCL	3.228
95% BCA Bootstrap UCL	3.317		

90% Chebyshev(Mean, Sd) UCL	3.956	95% Chebyshev(Mean, Sd) UCL	4.652
97.5% Chebyshev(Mean, Sd) UCL	5.618	99% Chebyshev(Mean, Sd) UCL	7.515

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.5	Mean	8.355
Maximum	19.3	Median	5.7
SD	5.944	Std. Error of Mean	2.427
Coefficient of Variation	0.711	Skewness	1.62
Mean of logged Data	1.947	SD of logged Data	0.623

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.24	95% Adjusted-CLT UCL (Chen-1995)	14.06
		95% Modified-t UCL (Johnson-1978)	13.51

Nonparametric Distribution Free UCLs

95% CLT UCL	12.35	95% Jackknife UCL	13.24
95% Standard Bootstrap UCL	12.08	95% Bootstrap-t UCL	29.11
95% Hall's Bootstrap UCL	41.27	95% Percentile Bootstrap UCL	12.52
95% BCA Bootstrap UCL	13.34		
90% Chebyshev(Mean, Sd) UCL	15.63	95% Chebyshev(Mean, Sd) UCL	18.93
97.5% Chebyshev(Mean, Sd) UCL	23.51	99% Chebyshev(Mean, Sd) UCL	32.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.55	Mean	24.86
Maximum	57.7	Median	17.7
SD	18.95	Std. Error of Mean	7.736
Coefficient of Variation	0.762	Skewness	1.275
Mean of logged Data	2.985	SD of logged Data	0.73

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.45	95% Adjusted-CLT UCL (Chen-1995)	41.88
		95% Modified-t UCL (Johnson-1978)	41.12

Nonparametric Distribution Free UCLs

95% CLT UCL	37.58	95% Jackknife UCL	40.45
95% Standard Bootstrap UCL	36.39	95% Bootstrap-t UCL	73.12
95% Hall's Bootstrap UCL	114	95% Percentile Bootstrap UCL	36.57
95% BCA Bootstrap UCL	39.79		
90% Chebyshev(Mean, Sd) UCL	48.07	95% Chebyshev(Mean, Sd) UCL	58.58
97.5% Chebyshev(Mean, Sd) UCL	73.17	99% Chebyshev(Mean, Sd) UCL	101.8

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

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34.3	Mean	139.6
Maximum	238	Median	152
SD	77.13	Std. Error of Mean	31.49
Coefficient of Variation	0.553	Skewness	-0.217
Mean of logged Data	4.757	SD of logged Data	0.73

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	203	95% Adjusted-CLT UCL (Chen-1995)	188.4
		95% Modified-t UCL (Johnson-1978)	202.6

Nonparametric Distribution Free UCLs

95% CLT UCL	191.4	95% Jackknife UCL	203
95% Standard Bootstrap UCL	186.8	95% Bootstrap-t UCL	197
95% Hall's Bootstrap UCL	182.9	95% Percentile Bootstrap UCL	191.7
95% BCA Bootstrap UCL	183.5		
90% Chebyshev(Mean, Sd) UCL	234	95% Chebyshev(Mean, Sd) UCL	276.8
97.5% Chebyshev(Mean, Sd) UCL	336.2	99% Chebyshev(Mean, Sd) UCL	452.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	50.8	Mean	98.08
Maximum	157	Median	90.85
SD	37.77	Std. Error of Mean	15.42
Coefficient of Variation	0.385	Skewness	0.574
Mean of logged Data	4.522	SD of logged Data	0.396

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	129.2	95% Adjusted-CLT UCL (Chen-1995)	127.3
		95% Modified-t UCL (Johnson-1978)	129.8

Nonparametric Distribution Free UCLs

95% CLT UCL	123.4	95% Jackknife UCL	129.2
95% Standard Bootstrap UCL	121.2	95% Bootstrap-t UCL	141.5
95% Hall's Bootstrap UCL	204.4	95% Percentile Bootstrap UCL	123.4
95% BCA Bootstrap UCL	123.3		
90% Chebyshev(Mean, Sd) UCL	144.3	95% Chebyshev(Mean, Sd) UCL	165.3
97.5% Chebyshev(Mean, Sd) UCL	194.4	99% Chebyshev(Mean, Sd) UCL	251.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	76.8	Mean	174.5
Maximum	283	Median	164
SD	84.24	Std. Error of Mean	34.39
Coefficient of Variation	0.483	Skewness	0.18
Mean of logged Data	5.054	SD of logged Data	0.522

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	243.8	95% Adjusted-CLT UCL (Chen-1995)	233.7
		95% Modified-t UCL (Johnson-1978)	244.2

Nonparametric Distribution Free UCLs

95% CLT UCL	231	95% Jackknife UCL	243.8
95% Standard Bootstrap UCL	227.8	95% Bootstrap-t UCL	245.8
95% Hall's Bootstrap UCL	219.3	95% Percentile Bootstrap UCL	225.5
95% BCA Bootstrap UCL	224.2		
90% Chebyshev(Mean, Sd) UCL	277.6	95% Chebyshev(Mean, Sd) UCL	324.4
97.5% Chebyshev(Mean, Sd) UCL	389.2	99% Chebyshev(Mean, Sd) UCL	516.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:05:08 AM
From File	Table 1. Parcel Analytical Results (Kingman APN31021080B) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.11	Mean	4.377
Maximum	6.53	Median	4.49
SD	2.212	Std. Error of Mean	1.277
Coefficient of Variation	0.505	Skewness	-0.23
Mean of logged Data	1.375	SD of logged Data	0.575

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.106	95% Adjusted-CLT UCL (Chen-1995)	6.296
		95% Modified-t UCL (Johnson-1978)	8.078

Nonparametric Distribution Free UCLs

95% CLT UCL	6.477	95% Jackknife UCL	8.106
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	8.208	95% Chebyshev(Mean, Sd) UCL	9.944
97.5% Chebyshev(Mean, Sd) UCL	12.35	99% Chebyshev(Mean, Sd) UCL	17.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(A)PYRENE

General Statistics			
Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.64	Mean	12.19
Maximum	44.8	Median	4.7
SD	18.39	Std. Error of Mean	8.223
Coefficient of Variation	1.509	Skewness	2.143
Mean of logged Data	1.728	SD of logged Data	1.313

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.72	95% Adjusted-CLT UCL (Chen-1995)	34.14
		95% Modified-t UCL (Johnson-1978)	31.03

Nonparametric Distribution Free UCLs

95% CLT UCL	25.71	95% Jackknife UCL	29.72
95% Standard Bootstrap UCL	24.23	95% Bootstrap-t UCL	123.3
95% Hall's Bootstrap UCL	119.4	95% Percentile Bootstrap UCL	27.63
95% BCA Bootstrap UCL	28.84		
90% Chebyshev(Mean, Sd) UCL	36.86	95% Chebyshev(Mean, Sd) UCL	48.03
97.5% Chebyshev(Mean, Sd) UCL	63.54	99% Chebyshev(Mean, Sd) UCL	94.01

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

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

BENZO(B)FLUORANTHENE

General Statistics			
Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.28	Mean	16.06
Maximum	56.4	Median	6.61
SD	22.75	Std. Error of Mean	10.18
Coefficient of Variation	1.417	Skewness	2.139
Mean of logged Data	2.136	SD of logged Data	1.171

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.76	95% Adjusted-CLT UCL (Chen-1995)	43.2
		95% Modified-t UCL (Johnson-1978)	39.38

Nonparametric Distribution Free UCLs

95% CLT UCL	32.8	95% Jackknife UCL	37.76
95% Standard Bootstrap UCL	30.91	95% Bootstrap-t UCL	159.9
95% Hall's Bootstrap UCL	150.8	95% Percentile Bootstrap UCL	35.15
95% BCA Bootstrap UCL	37.3		
90% Chebyshev(Mean, Sd) UCL	46.59	95% Chebyshev(Mean, Sd) UCL	60.42
97.5% Chebyshev(Mean, Sd) UCL	79.61	99% Chebyshev(Mean, Sd) UCL	117.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.3	Mean	30.94
Maximum	110	Median	5.725
SD	52.73	Std. Error of Mean	26.37
Coefficient of Variation	1.705	Skewness	1.994
Mean of logged Data	2.256	SD of logged Data	1.686

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	92.99	95% Adjusted-CLT UCL (Chen-1995)	102.4
		95% Modified-t UCL (Johnson-1978)	97.37

Nonparametric Distribution Free UCLs

95% CLT UCL	74.31	95% Jackknife UCL	92.99
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	110	95% Chebyshev(Mean, Sd) UCL	145.9
97.5% Chebyshev(Mean, Sd) UCL	195.6	99% Chebyshev(Mean, Sd) UCL	293.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	3.96	Mean	11.18
Maximum	18.4	Median	11.18

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable BENZO(K)FLUORANTHENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.9	Mean	6.18
Maximum	8.25	Median	7.39
SD	2.873	Std. Error of Mean	1.659
Coefficient of Variation	0.465	Skewness	-1.559
Mean of logged Data	1.725	SD of logged Data	0.574

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.02	95% Adjusted-CLT UCL (Chen-1995)	7.313
		95% Modified-t UCL (Johnson-1978)	10.77

Nonparametric Distribution Free UCLs

95% CLT UCL	8.908	95% Jackknife UCL	11.02
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.16	95% Chebyshev(Mean, Sd) UCL	13.41
97.5% Chebyshev(Mean, Sd) UCL	16.54	99% Chebyshev(Mean, Sd) UCL	22.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	19.4	Mean	19.4
Maximum	19.4	Median	19.4

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable DIBENZ(A,H)ANTHRACENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.09	Mean	5.065
Maximum	12.3	Median	2.935
SD	4.847	Std. Error of Mean	2.423
Coefficient of Variation	0.957	Skewness	1.943
Mean of logged Data	1.347	SD of logged Data	0.796

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

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.77	95% Adjusted-CLT UCL (Chen-1995)	11.57
		95% Modified-t UCL (Johnson-1978)	11.16

Nonparametric Distribution Free UCLs

95% CLT UCL	9.051	95% Jackknife UCL	10.77

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.33	95% Chebyshev(Mean, Sd) UCL	15.63
97.5% Chebyshev(Mean, Sd) UCL	20.2	99% Chebyshev(Mean, Sd) UCL	29.18

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.3	Mean	28.12
Maximum	99.5	Median	5.345
SD	47.61	Std. Error of Mean	23.8
Coefficient of Variation	1.693	Skewness	1.994
Mean of logged Data	2.194	SD of logged Data	1.653

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	84.14	95% Adjusted-CLT UCL (Chen-1995)	92.64
		95% Modified-t UCL (Johnson-1978)	88.1

Nonparametric Distribution Free UCLs

95% CLT UCL	67.28	95% Jackknife UCL	84.14
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	99.53	95% Chebyshev(Mean, Sd) UCL	131.9
97.5% Chebyshev(Mean, Sd) UCL	176.8	99% Chebyshev(Mean, Sd) UCL	265

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

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

PHENANTHRENE

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	6.75	Mean	6.75
Maximum	6.75	Median	6.75

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable PHENANTHRENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

PYRENE

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	2.86	Mean	6.48
Maximum	10.1	Median	6.48

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable PYRENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.89	Mean	17
Maximum	35.2	Median	14.1
SD	9.453	Std. Error of Mean	3.859
Coefficient of Variation	0.556	Skewness	1.87
Mean of logged Data	2.73	SD of logged Data	0.474

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.78	95% Adjusted-CLT UCL (Chen-1995)	26.49

		95% Modified-t UCL (Johnson-1978)	25.27

Nonparametric Distribution Free UCLs

95% CLT UCL	23.35	95% Jackknife UCL	24.78
95% Standard Bootstrap UCL	22.76	95% Bootstrap-t UCL	36.42
95% Hall's Bootstrap UCL	52.56	95% Percentile Bootstrap UCL	23.78
95% BCA Bootstrap UCL	24.88		
90% Chebyshev(Mean, Sd) UCL	28.58	95% Chebyshev(Mean, Sd) UCL	33.82
97.5% Chebyshev(Mean, Sd) UCL	41.1	99% Chebyshev(Mean, Sd) UCL	55.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.3	Mean	14.9
Maximum	26.9	Median	12.2
SD	7.148	Std. Error of Mean	2.918
Coefficient of Variation	0.48	Skewness	1.146
Mean of logged Data	2.614	SD of logged Data	0.447

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.77	95% Adjusted-CLT UCL (Chen-1995)	21.15
		95% Modified-t UCL (Johnson-1978)	21

Nonparametric Distribution Free UCLs

95% CLT UCL	19.69	95% Jackknife UCL	20.77
95% Standard Bootstrap UCL	19.43	95% Bootstrap-t UCL	31.97
95% Hall's Bootstrap UCL	55.77	95% Percentile Bootstrap UCL	19.67
95% BCA Bootstrap UCL	20.32		
90% Chebyshev(Mean, Sd) UCL	23.65	95% Chebyshev(Mean, Sd) UCL	27.61
97.5% Chebyshev(Mean, Sd) UCL	33.12	99% Chebyshev(Mean, Sd) UCL	43.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34.5	Mean	42.88
Maximum	47.9	Median	43.8
SD	4.881	Std. Error of Mean	1.993
Coefficient of Variation	0.114	Skewness	-1.054
Mean of logged Data	3.753	SD of logged Data	0.12

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	46.9	95% Adjusted-CLT UCL (Chen-1995)	45.24
		95% Modified-t UCL (Johnson-1978)	46.76

Nonparametric Distribution Free UCLs

95% CLT UCL	46.16	95% Jackknife UCL	46.9
95% Standard Bootstrap UCL	45.86	95% Bootstrap-t UCL	45.82
95% Hall's Bootstrap UCL	45.32	95% Percentile Bootstrap UCL	45.82
95% BCA Bootstrap UCL	45.2		
90% Chebyshev(Mean, Sd) UCL	48.86	95% Chebyshev(Mean, Sd) UCL	51.57
97.5% Chebyshev(Mean, Sd) UCL	55.33	99% Chebyshev(Mean, Sd) UCL	62.71

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

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

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:09:08 AM
From File	Table 1 APN31038002 - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.646	Mean	0.827
Maximum	0.995	Median	0.788
SD	0.142	Std. Error of Mean	0.058
Coefficient of Variation	0.172	Skewness	0.283
Mean of logged Data	-0.202	SD of logged Data	0.172

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.944	95% Adjusted-CLT UCL (Chen-1995)	0.929
		95% Modified-t UCL (Johnson-1978)	0.945

Nonparametric Distribution Free UCLs

95% CLT UCL	0.922	95% Jackknife UCL	0.944
95% Standard Bootstrap UCL	0.911	95% Bootstrap-t UCL	0.994
95% Hall's Bootstrap UCL	1.024	95% Percentile Bootstrap UCL	0.914
95% BCA Bootstrap UCL	0.914		
90% Chebyshev(Mean, Sd) UCL	1.001	95% Chebyshev(Mean, Sd) UCL	1.08
97.5% Chebyshev(Mean, Sd) UCL	1.189	99% Chebyshev(Mean, Sd) UCL	1.404

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0

Minimum	0.505	Mean	0.532
Maximum	0.57	Median	0.53
SD	0.0211	Std. Error of Mean	0.00863
Coefficient of Variation	0.0398	Skewness	1.178
Mean of logged Data	-0.632	SD of logged Data	0.0392

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.549	95% Adjusted-CLT UCL (Chen-1995)	0.55
		95% Modified-t UCL (Johnson-1978)	0.55

Nonparametric Distribution Free UCLs

95% CLT UCL	0.546	95% Jackknife UCL	0.549
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.558	95% Chebyshev(Mean, Sd) UCL	0.569
97.5% Chebyshev(Mean, Sd) UCL	0.586	99% Chebyshev(Mean, Sd) UCL	0.618

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

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.045	Mean	2.262
Maximum	2.92	Median	2.155
SD	0.325	Std. Error of Mean	0.133
Coefficient of Variation	0.144	Skewness	2.347
Mean of logged Data	0.809	SD of logged Data	0.131

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

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

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.529	95% Adjusted-CLT UCL (Chen-1995)	2.616
		95% Modified-t UCL (Johnson-1978)	2.551

Nonparametric Distribution Free UCLs

95% CLT UCL	2.48	95% Jackknife UCL	2.529
95% Standard Bootstrap UCL	2.456	95% Bootstrap-t UCL	5.689
95% Hall's Bootstrap UCL	4.508	95% Percentile Bootstrap UCL	2.517
95% BCA Bootstrap UCL	2.536		
90% Chebyshev(Mean, Sd) UCL	2.66	95% Chebyshev(Mean, Sd) UCL	2.841
97.5% Chebyshev(Mean, Sd) UCL	3.091	99% Chebyshev(Mean, Sd) UCL	3.584

Suggested UCL to Use

95% Student's-t UCL	2.529	or 95% Modified-t UCL	2.551

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.52	Mean	7.572
Maximum	23.6	Median	4.205
SD	8.047	Std. Error of Mean	3.285
Coefficient of Variation	1.063	Skewness	2.206
Mean of logged Data	1.695	SD of logged Data	0.808

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.19	95% Adjusted-CLT UCL (Chen-1995)	16.14
		95% Modified-t UCL (Johnson-1978)	14.68

Nonparametric Distribution Free UCLs

95% CLT UCL	12.98	95% Jackknife UCL	14.19
95% Standard Bootstrap UCL	12.46	95% Bootstrap-t UCL	48.73
95% Hall's Bootstrap UCL	42.93	95% Percentile Bootstrap UCL	13.52
95% BCA Bootstrap UCL	14.76		
90% Chebyshev(Mean, Sd) UCL	17.43	95% Chebyshev(Mean, Sd) UCL	21.89
97.5% Chebyshev(Mean, Sd) UCL	28.09	99% Chebyshev(Mean, Sd) UCL	40.26

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

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.12	Mean	10.37
Maximum	32.6	Median	6.07
SD	11.27	Std. Error of Mean	4.599
Coefficient of Variation	1.086	Skewness	2.116
Mean of logged Data	1.97	SD of logged Data	0.876

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.64	95% Adjusted-CLT UCL (Chen-1995)	22.18
		95% Modified-t UCL (Johnson-1978)	20.3

Nonparametric Distribution Free UCLs

95% CLT UCL	17.93	95% Jackknife UCL	19.64
95% Standard Bootstrap UCL	17.23	95% Bootstrap-t UCL	46.54
95% Hall's Bootstrap UCL	50.64	95% Percentile Bootstrap UCL	19.11
95% BCA Bootstrap UCL	20.84		
90% Chebyshev(Mean, Sd) UCL	24.17	95% Chebyshev(Mean, Sd) UCL	30.42
97.5% Chebyshev(Mean, Sd) UCL	39.09	99% Chebyshev(Mean, Sd) UCL	56.13

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.99	Mean	14.44
Maximum	44.1	Median	8.73
SD	14.87	Std. Error of Mean	6.071
Coefficient of Variation	1.03	Skewness	2.208
Mean of logged Data	2.352	SD of logged Data	0.809

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.68	95% Adjusted-CLT UCL (Chen-1995)	30.28
		95% Modified-t UCL (Johnson-1978)	27.59

Nonparametric Distribution Free UCLs

95% CLT UCL	24.43	95% Jackknife UCL	26.68
95% Standard Bootstrap UCL	23.56	95% Bootstrap-t UCL	67.3
95% Hall's Bootstrap UCL	86.41	95% Percentile Bootstrap UCL	25.33
95% BCA Bootstrap UCL	27.26		
90% Chebyshev(Mean, Sd) UCL	32.65	95% Chebyshev(Mean, Sd) UCL	40.9
97.5% Chebyshev(Mean, Sd) UCL	52.36	99% Chebyshev(Mean, Sd) UCL	74.85

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.31	Mean	8.333
Maximum	25.3	Median	4.82
SD	8.59	Std. Error of Mean	3.507
Coefficient of Variation	1.031	Skewness	2.125
Mean of logged Data	1.792	SD of logged Data	0.828

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.4	95% Adjusted-CLT UCL (Chen-1995)	17.35
		95% Modified-t UCL (Johnson-1978)	15.91

Nonparametric Distribution Free UCLs

95% CLT UCL	14.1	95% Jackknife UCL	15.4

95% Standard Bootstrap UCL	13.69	95% Bootstrap-t UCL	42.13
95% Hall's Bootstrap UCL	50.53	95% Percentile Bootstrap UCL	14.82
95% BCA Bootstrap UCL	15.98		
90% Chebyshev(Mean, Sd) UCL	18.85	95% Chebyshev(Mean, Sd) UCL	23.62
97.5% Chebyshev(Mean, Sd) UCL	30.23	99% Chebyshev(Mean, Sd) UCL	43.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.16	Mean	5.69
Maximum	16.6	Median	3.58
SD	5.461	Std. Error of Mean	2.229
Coefficient of Variation	0.96	Skewness	2.229
Mean of logged Data	1.473	SD of logged Data	0.725

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

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.18	95% Adjusted-CLT UCL (Chen-1995)	11.53
		95% Modified-t UCL (Johnson-1978)	10.52

Nonparametric Distribution Free UCLs

95% CLT UCL	9.357	95% Jackknife UCL	10.18
95% Standard Bootstrap UCL	9.053	95% Bootstrap-t UCL	28.99
95% Hall's Bootstrap UCL	28.68	95% Percentile Bootstrap UCL	9.917
95% BCA Bootstrap UCL	10.4		
90% Chebyshev(Mean, Sd) UCL	12.38	95% Chebyshev(Mean, Sd) UCL	15.41
97.5% Chebyshev(Mean, Sd) UCL	19.61	99% Chebyshev(Mean, Sd) UCL	27.87

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.99	Mean	11.06
Maximum	33.5	Median	6.445
SD	11.31	Std. Error of Mean	4.619
Coefficient of Variation	1.023	Skewness	2.158
Mean of logged Data	2.082	SD of logged Data	0.819

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.37	95% Adjusted-CLT UCL (Chen-1995)	23.01
		95% Modified-t UCL (Johnson-1978)	21.04

Nonparametric Distribution Free UCLs

95% CLT UCL	18.66	95% Jackknife UCL	20.37
95% Standard Bootstrap UCL	17.84	95% Bootstrap-t UCL	51.15
95% Hall's Bootstrap UCL	63.55	95% Percentile Bootstrap UCL	19.65
95% BCA Bootstrap UCL	24.01		
90% Chebyshev(Mean, Sd) UCL	24.92	95% Chebyshev(Mean, Sd) UCL	31.19
97.5% Chebyshev(Mean, Sd) UCL	39.91	99% Chebyshev(Mean, Sd) UCL	57.02

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

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.145	Mean	3.804
Maximum	6.44	Median	3.315
SD	1.293	Std. Error of Mean	0.528
Coefficient of Variation	0.34	Skewness	2.434
Mean of logged Data	1.299	SD of logged Data	0.277

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

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.868	95% Adjusted-CLT UCL (Chen-1995)	5.233
		95% Modified-t UCL (Johnson-1978)	4.955

Nonparametric Distribution Free UCLs

95% CLT UCL	4.672	95% Jackknife UCL	4.868
95% Standard Bootstrap UCL	4.586	95% Bootstrap-t UCL	45.21
95% Hall's Bootstrap UCL	33.23	95% Percentile Bootstrap UCL	4.846
95% BCA Bootstrap UCL	4.878		
90% Chebyshev(Mean, Sd) UCL	5.388	95% Chebyshev(Mean, Sd) UCL	6.105
97.5% Chebyshev(Mean, Sd) UCL	7.101	99% Chebyshev(Mean, Sd) UCL	9.057

Suggested UCL to Use

95% Student's-t UCL	4.868	or 95% Modified-t UCL	4.955

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.6	Mean	12.61
Maximum	39.1	Median	7.995
SD	13.33	Std. Error of Mean	5.442
Coefficient of Variation	1.057	Skewness	2.176
Mean of logged Data	2.193	SD of logged Data	0.842

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

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.57	95% Adjusted-CLT UCL (Chen-1995)	26.72
		95% Modified-t UCL (Johnson-1978)	24.38

Nonparametric Distribution Free UCLs

95% CLT UCL	21.56	95% Jackknife UCL	23.57
95% Standard Bootstrap UCL	20.68	95% Bootstrap-t UCL	52.02
95% Hall's Bootstrap UCL	63.39	95% Percentile Bootstrap UCL	22.82
95% BCA Bootstrap UCL	24.45		
90% Chebyshev(Mean, Sd) UCL	28.93	95% Chebyshev(Mean, Sd) UCL	36.32
97.5% Chebyshev(Mean, Sd) UCL	46.59	99% Chebyshev(Mean, Sd) UCL	66.75

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.69	Mean	9.063
Maximum	28.1	Median	4.98
SD	9.586	Std. Error of Mean	3.913
Coefficient of Variation	1.058	Skewness	2.178
Mean of logged Data	1.871	SD of logged Data	0.821

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

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.95	95% Adjusted-CLT UCL (Chen-1995)	19.22
		95% Modified-t UCL (Johnson-1978)	17.53

Nonparametric Distribution Free UCLs

95% CLT UCL	15.5	95% Jackknife UCL	16.95
95% Standard Bootstrap UCL	14.78	95% Bootstrap-t UCL	53.42
95% Hall's Bootstrap UCL	61.36	95% Percentile Bootstrap UCL	16.29
95% BCA Bootstrap UCL	18.02		
90% Chebyshev(Mean, Sd) UCL	20.8	95% Chebyshev(Mean, Sd) UCL	26.12
97.5% Chebyshev(Mean, Sd) UCL	33.5	99% Chebyshev(Mean, Sd) UCL	48

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0

Minimum	0.995	Mean	1.123
Maximum	1.33	Median	1.095
SD	0.146	Std. Error of Mean	0.0596
Coefficient of Variation	0.13	Skewness	0.408
Mean of logged Data	0.109	SD of logged Data	0.129

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.243	95% Adjusted-CLT UCL (Chen-1995)	1.232
		95% Modified-t UCL (Johnson-1978)	1.245

Nonparametric Distribution Free UCLs

95% CLT UCL	1.221	95% Jackknife UCL	1.243
95% Standard Bootstrap UCL	1.212	95% Bootstrap-t UCL	1.259
95% Hall's Bootstrap UCL	1.186	95% Percentile Bootstrap UCL	1.208
95% BCA Bootstrap UCL	1.218		
90% Chebyshev(Mean, Sd) UCL	1.302	95% Chebyshev(Mean, Sd) UCL	1.383
97.5% Chebyshev(Mean, Sd) UCL	1.496	99% Chebyshev(Mean, Sd) UCL	1.717

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.12	Mean	5.783
Maximum	16.5	Median	3.418
SD	5.306	Std. Error of Mean	2.166
Coefficient of Variation	0.918	Skewness	2.341
Mean of logged Data	1.527	SD of logged Data	0.653

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

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

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	10.15	95% Adjusted-CLT UCL (Chen-1995)	11.56
		95% Modified-t UCL (Johnson-1978)	10.49

Nonparametric Distribution Free UCLs

95% CLT UCL	9.346	95% Jackknife UCL	10.15
95% Standard Bootstrap UCL	9.108	95% Bootstrap-t UCL	52.08
95% Hall's Bootstrap UCL	30.19	95% Percentile Bootstrap UCL	9.82
95% BCA Bootstrap UCL	10.47		
90% Chebyshev(Mean, Sd) UCL	12.28	95% Chebyshev(Mean, Sd) UCL	15.22
97.5% Chebyshev(Mean, Sd) UCL	19.31	99% Chebyshev(Mean, Sd) UCL	27.34

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.89	Mean	11.96
Maximum	37.5	Median	7.61
SD	12.93	Std. Error of Mean	5.28
Coefficient of Variation	1.082	Skewness	2.114
Mean of logged Data	2.104	SD of logged Data	0.904

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

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.6	95% Adjusted-CLT UCL (Chen-1995)	25.51
		95% Modified-t UCL (Johnson-1978)	23.36

Nonparametric Distribution Free UCLs

95% CLT UCL	20.64	95% Jackknife UCL	22.6
95% Standard Bootstrap UCL	19.86	95% Bootstrap-t UCL	48.56
95% Hall's Bootstrap UCL	61.59	95% Percentile Bootstrap UCL	21.29
95% BCA Bootstrap UCL	23.3		
90% Chebyshev(Mean, Sd) UCL	27.8	95% Chebyshev(Mean, Sd) UCL	34.97
97.5% Chebyshev(Mean, Sd) UCL	44.93	99% Chebyshev(Mean, Sd) UCL	64.49

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	12.58
Maximum	14.2	Median	12.05
SD	1.201	Std. Error of Mean	0.49
Coefficient of Variation	0.0954	Skewness	0.801
Mean of logged Data	2.529	SD of logged Data	0.0934

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.57	95% Adjusted-CLT UCL (Chen-1995)	13.56
		95% Modified-t UCL (Johnson-1978)	13.6

Nonparametric Distribution Free UCLs

95% CLT UCL	13.39	95% Jackknife UCL	13.57
95% Standard Bootstrap UCL	13.3	95% Bootstrap-t UCL	15.71
95% Hall's Bootstrap UCL	23.26	95% Percentile Bootstrap UCL	13.38
95% BCA Bootstrap UCL	13.37		
90% Chebyshev(Mean, Sd) UCL	14.05	95% Chebyshev(Mean, Sd) UCL	14.72
97.5% Chebyshev(Mean, Sd) UCL	15.64	99% Chebyshev(Mean, Sd) UCL	17.46

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	21.27
Maximum	49.2	Median	12.65
SD	15.38	Std. Error of Mean	6.28
Coefficient of Variation	0.723	Skewness	1.596
Mean of logged Data	2.88	SD of logged Data	0.614

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.92	95% Adjusted-CLT UCL (Chen-1995)	35.97
		95% Modified-t UCL (Johnson-1978)	34.6

Nonparametric Distribution Free UCLs

95% CLT UCL	31.6	95% Jackknife UCL	33.92
95% Standard Bootstrap UCL	30.93	95% Bootstrap-t UCL	277.2
95% Hall's Bootstrap UCL	231.3	95% Percentile Bootstrap UCL	30.7
95% BCA Bootstrap UCL	33.72		
90% Chebyshev(Mean, Sd) UCL	40.11	95% Chebyshev(Mean, Sd) UCL	48.64
97.5% Chebyshev(Mean, Sd) UCL	60.48	99% Chebyshev(Mean, Sd) UCL	83.75

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	48.64

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41	Mean	46.42
Maximum	54.8	Median	43.9
SD	5.837	Std. Error of Mean	2.383
Coefficient of Variation	0.126	Skewness	0.82
Mean of logged Data	3.831	SD of logged Data	0.122

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.22	95% Adjusted-CLT UCL (Chen-1995)	51.19
		95% Modified-t UCL (Johnson-1978)	51.35

Nonparametric Distribution Free UCLs

95% CLT UCL	50.34	95% Jackknife UCL	51.22

95% Standard Bootstrap UCL	49.93	95% Bootstrap-t UCL	58.16
95% Hall's Bootstrap UCL	80.06	95% Percentile Bootstrap UCL	50.15
95% BCA Bootstrap UCL	50.43		
90% Chebyshev(Mean, Sd) UCL	53.57	95% Chebyshev(Mean, Sd) UCL	56.8
97.5% Chebyshev(Mean, Sd) UCL	61.3	99% Chebyshev(Mean, Sd) UCL	70.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.16/11/2020 10:16:16 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404206A) - HRA _a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.752	Mean	4.693
Maximum	19.8	Median	1.33
SD	7.507	Std. Error of Mean	3.065
Coefficient of Variation	1.6	Skewness	2.305

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.364	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.87	95% Adjusted-CLT UCL (Chen-1995)	12.82
		95% Modified-t UCL (Johnson-1978)	11.35

Gamma GOF Test

A-D Test Statistic	0.734	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.721	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.308	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.344	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.745	k star (bias corrected MLE)	0.483
Theta hat (MLE)	6.302	Theta star (bias corrected MLE)	9.707
nu hat (MLE)	8.936	nu star (bias corrected)	5.801
MLE Mean (bias corrected)	4.693	MLE Sd (bias corrected)	6.749
		Approximate Chi Square Value (0.05)	1.539
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	0.88

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	17.69	95% Adjusted Gamma UCL (use when n<50)	30.94

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.843	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.244	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.285	Mean of logged Data	0.741
Maximum of Logged Data	2.986	SD of logged Data	1.263

Assuming Lognormal Distribution

95% H-UCL	80	90% Chebyshev (MVUE) UCL	9.64
95% Chebyshev (MVUE) UCL	12.25	97.5% Chebyshev (MVUE) UCL	15.88
99% Chebyshev (MVUE) UCL	23.01		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	9.734	95% Jackknife UCL	10.87
95% Standard Bootstrap UCL	9.402	95% Bootstrap-t UCL	85.15
95% Hall's Bootstrap UCL	44.57	95% Percentile Bootstrap UCL	10.45
95% BCA Bootstrap UCL	11.4		
90% Chebyshev(Mean, Sd) UCL	13.89	95% Chebyshev(Mean, Sd) UCL	18.05
97.5% Chebyshev(Mean, Sd) UCL	23.83	99% Chebyshev(Mean, Sd) UCL	35.19

Suggested UCL to Use

95% Adjusted Gamma UCL	30.94

Recommended UCL exceeds the maximum observation

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.479	Mean	1.001
Maximum	1.86	Median	0.847
SD	0.576	Std. Error of Mean	0.235
Coefficient of Variation	0.576	Skewness	0.622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.872	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.271	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.474	95% Adjusted-CLT UCL (Chen-1995)	1.451
		95% Modified-t UCL (Johnson-1978)	1.484

Gamma GOF Test

A-D Test Statistic	0.462	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.7	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.286	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.334	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.666	k star (bias corrected MLE)	1.944
Theta hat (MLE)	0.273	Theta star (bias corrected MLE)	0.515
nu hat (MLE)	44	nu star (bias corrected)	23.33
MLE Mean (bias corrected)	1.001	MLE Sd (bias corrected)	0.718
		Approximate Chi Square Value (0.05)	13.34
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	10.72

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.75	95% Adjusted Gamma UCL (use when n<50)	2.178

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.872	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.736	Mean of logged Data	-0.142
Maximum of Logged Data	0.621	SD of logged Data	0.587

Assuming Lognormal Distribution

95% H-UCL	2.183	90% Chebyshev (MVUE) UCL	1.715
95% Chebyshev (MVUE) UCL	2.04	97.5% Chebyshev (MVUE) UCL	2.49
99% Chebyshev (MVUE) UCL	3.375		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	1.387	95% Jackknife UCL	1.474
95% Standard Bootstrap UCL	1.348	95% Bootstrap-t UCL	1.52
95% Hall's Bootstrap UCL	1.384	95% Percentile Bootstrap UCL	1.383
95% BCA Bootstrap UCL	1.378		

90% Chebyshev(Mean, Sd) UCL	1.706	95% Chebyshev(Mean, Sd) UCL	2.025
97.5% Chebyshev(Mean, Sd) UCL	2.469	99% Chebyshev(Mean, Sd) UCL	3.34

Suggested UCL to Use

95% Student's-t UCL	1.474

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.95	Mean	3.463
Maximum	7.54	Median	2.7
SD	2.135	Std. Error of Mean	0.871
Coefficient of Variation	0.616	Skewness	1.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.768	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.269	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.219	95% Adjusted-CLT UCL (Chen-1995)	5.591
		95% Modified-t UCL (Johnson-1978)	5.328

Gamma GOF Test

A-D Test Statistic	0.542	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.7	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.274	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.333	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	4.127	k star (bias corrected MLE)	2.175
Theta hat (MLE)	0.839	Theta star (bias corrected MLE)	1.593
nu hat (MLE)	49.53	nu star (bias corrected)	26.1
MLE Mean (bias corrected)	3.463	MLE Sd (bias corrected)	2.349
		Approximate Chi Square Value (0.05)	15.45
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	12.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	5.849	95% Adjusted Gamma UCL (use when n<50)	7.176

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.859	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.258	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.668	Mean of logged Data	1.116
Maximum of Logged Data	2.02	SD of logged Data	0.52

Assuming Lognormal Distribution

95% H-UCL	6.531	90% Chebyshev (MVUE) UCL	5.582
95% Chebyshev (MVUE) UCL	6.565	97.5% Chebyshev (MVUE) UCL	7.929
99% Chebyshev (MVUE) UCL	10.61		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	4.897	95% Jackknife UCL	5.219
95% Standard Bootstrap UCL	4.759	95% Bootstrap-t UCL	6.855
95% Hall's Bootstrap UCL	10.11	95% Percentile Bootstrap UCL	4.965
95% BCA Bootstrap UCL	5.105		
90% Chebyshev(Mean, Sd) UCL	6.078	95% Chebyshev(Mean, Sd) UCL	7.262
97.5% Chebyshev(Mean, Sd) UCL	8.905	99% Chebyshev(Mean, Sd) UCL	12.13

Suggested UCL to Use

95% Student's-t UCL	5.219

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.5	Mean	27.43
Maximum	57.8	Median	23.7
SD	18.8	Std. Error of Mean	7.675
Coefficient of Variation	0.685	Skewness	0.777

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

guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.9	95% Adjusted-CLT UCL (Chen-1995)	42.66
		95% Modified-t UCL (Johnson-1978)	43.3

Gamma GOF Test

A-D Test Statistic	0.249	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.222	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.432	k star (bias corrected MLE)	1.327
Theta hat (MLE)	11.28	Theta star (bias corrected MLE)	20.67
nu hat (MLE)	29.18	nu star (bias corrected)	15.93
MLE Mean (bias corrected)	27.43	MLE Sd (bias corrected)	23.81
		Approximate Chi Square Value (0.05)	7.91
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	5.986

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	55.23	95% Adjusted Gamma UCL (use when n<50)	72.99

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.961	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.188	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.015	Mean of logged Data	3.092
Maximum of Logged Data	4.057	SD of logged Data	0.754

Assuming Lognormal Distribution

95% H-UCL	90.08	90% Chebyshev (MVUE) UCL	53.14
95% Chebyshev (MVUE) UCL	64.65	97.5% Chebyshev (MVUE) UCL	80.64
99% Chebyshev (MVUE) UCL	112		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	40.06	95% Jackknife UCL	42.9
95% Standard Bootstrap UCL	38.9	95% Bootstrap-t UCL	47.36
95% Hall's Bootstrap UCL	41.3	95% Percentile Bootstrap UCL	38.78
95% BCA Bootstrap UCL	40.37		

90% Chebyshev(Mean, Sd) UCL	50.46	95% Chebyshev(Mean, Sd) UCL	60.89
97.5% Chebyshev(Mean, Sd) UCL	75.36	99% Chebyshev(Mean, Sd) UCL	103.8

Suggested UCL to Use

95% Student's-t UCL	42.9

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.3	Mean	37.88
Maximum	76.1	Median	32.95
SD	25.37	Std. Error of Mean	10.36
Coefficient of Variation	0.67	Skewness	0.55

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.262	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.75	95% Adjusted-CLT UCL (Chen-1995)	57.4
		95% Modified-t UCL (Johnson-1978)	59.14

Gamma GOF Test

A-D Test Statistic	0.344	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.258	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.488	k star (bias corrected MLE)	1.355
Theta hat (MLE)	15.23	Theta star (bias corrected MLE)	27.96
nu hat (MLE)	29.85	nu star (bias corrected)	16.26
MLE Mean (bias corrected)	37.88	MLE Sd (bias corrected)	32.54
		Approximate Chi Square Value (0.05)	8.146
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	6.188

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	75.62	95% Adjusted Gamma UCL (use when n<50)	99.56

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.425	Mean of logged Data	3.42
Maximum of Logged Data	4.332	SD of logged Data	0.743

Assuming Lognormal Distribution

95% H-UCL	120.5	90% Chebyshev (MVUE) UCL	72.76
95% Chebyshev (MVUE) UCL	88.41	97.5% Chebyshev (MVUE) UCL	110.1
99% Chebyshev (MVUE) UCL	152.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	54.92	95% Jackknife UCL	58.75
95% Standard Bootstrap UCL	53.47	95% Bootstrap-t UCL	63.76
95% Hall's Bootstrap UCL	51.7	95% Percentile Bootstrap UCL	53.68
95% BCA Bootstrap UCL	54.72		
90% Chebyshev(Mean, Sd) UCL	68.96	95% Chebyshev(Mean, Sd) UCL	83.03
97.5% Chebyshev(Mean, Sd) UCL	102.6	99% Chebyshev(Mean, Sd) UCL	140.9

Suggested UCL to Use

95% Student's-t UCL	58.75

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14	Mean	49.55
Maximum	99.1	Median	43.8
SD	33.26	Std. Error of Mean	13.58
Coefficient of Variation	0.671	Skewness	0.501

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**

5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.91	95% Adjusted-CLT UCL (Chen-1995)	74.85
		95% Modified-t UCL (Johnson-1978)	77.37

Gamma GOF Test

A-D Test Statistic	0.336	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.249	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.426	k star (bias corrected MLE)	1.324
Theta hat (MLE)	20.42	Theta star (bias corrected MLE)	37.42
nu hat (MLE)	29.11	nu star (bias corrected)	15.89
MLE Mean (bias corrected)	49.55	MLE Sd (bias corrected)	43.06
		Approximate Chi Square Value (0.05)	7.885
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	5.964

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	99.86	95% Adjusted Gamma UCL (use when n<50)	132

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.217	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.639	Mean of logged Data	3.683
Maximum of Logged Data	4.596	SD of logged Data	0.758

Assuming Lognormal Distribution

95% H-UCL	164.5	90% Chebyshev (MVUE) UCL	96.33
95% Chebyshev (MVUE) UCL	117.3	97.5% Chebyshev (MVUE) UCL	146.3
99% Chebyshev (MVUE) UCL	203.4		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	71.88	95% Jackknife UCL	76.91
95% Standard Bootstrap UCL	70.11	95% Bootstrap-t UCL	80.75
95% Hall's Bootstrap UCL	67.08	95% Percentile Bootstrap UCL	70.02
95% BCA Bootstrap UCL	71.63		
90% Chebyshev(Mean, Sd) UCL	90.29	95% Chebyshev(Mean, Sd) UCL	108.7
97.5% Chebyshev(Mean, Sd) UCL	134.3	99% Chebyshev(Mean, Sd) UCL	184.7

Suggested UCL to Use

95% Student's-t UCL	76.91

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.72	Mean	27.25
Maximum	57.1	Median	23.6
SD	19.37	Std. Error of Mean	7.907
Coefficient of Variation	0.711	Skewness	0.629

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.906	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.19	95% Adjusted-CLT UCL (Chen-1995)	42.43
		95% Modified-t UCL (Johnson-1978)	43.52

Gamma GOF Test

A-D Test Statistic	0.335	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.704	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.248	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.336	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.222	k star (bias corrected MLE)	1.222
Theta hat (MLE)	12.27	Theta star (bias corrected MLE)	22.3
nu hat (MLE)	26.66	nu star (bias corrected)	14.66
MLE Mean (bias corrected)	27.25	MLE Sd (bias corrected)	24.65
		Approximate Chi Square Value (0.05)	7.029
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	5.238

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	56.86	95% Adjusted Gamma UCL (use when n<50)	76.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.212	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.044	Mean of logged Data	3.064
Maximum of Logged Data	4.045	SD of logged Data	0.788

Assuming Lognormal Distribution

95% H-UCL	98.22	90% Chebyshev (MVUE) UCL	53.83
95% Chebyshev (MVUE) UCL	65.76	97.5% Chebyshev (MVUE) UCL	82.32
99% Chebyshev (MVUE) UCL	114.9		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	40.26	95% Jackknife UCL	43.19
95% Standard Bootstrap UCL	39.22	95% Bootstrap-t UCL	46.69
95% Hall's Bootstrap UCL	38.01	95% Percentile Bootstrap UCL	39.07
95% BCA Bootstrap UCL	41.63		
90% Chebyshev(Mean, Sd) UCL	50.97	95% Chebyshev(Mean, Sd) UCL	61.72
97.5% Chebyshev(Mean, Sd) UCL	76.63	99% Chebyshev(Mean, Sd) UCL	105.9

Suggested UCL to Use

95% Student's-t UCL	43.19

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.28	Mean	19.34
Maximum	42.4	Median	16.3
SD	13.93	Std. Error of Mean	5.688
Coefficient of Variation	0.721	Skewness	0.898

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.906	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.249	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.8	95% Adjusted-CLT UCL (Chen-1995)	30.92
		95% Modified-t UCL (Johnson-1978)	31.14

Gamma GOF Test

A-D Test Statistic	0.289	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.246	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.266	k star (bias corrected MLE)	1.244
Theta hat (MLE)	8.533	Theta star (bias corrected MLE)	15.54
nu hat (MLE)	27.19	nu star (bias corrected)	14.93
MLE Mean (bias corrected)	19.34	MLE Sd (bias corrected)	17.34
		Approximate Chi Square Value (0.05)	7.212
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	5.392

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	40.02	95% Adjusted Gamma UCL (use when n<50)	53.53

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.952	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.664	Mean of logged Data	2.725
Maximum of Logged Data	3.747	SD of logged Data	0.777

Assuming Lognormal Distribution

95% H-UCL	67.33	90% Chebyshev (MVUE) UCL	37.85
95% Chebyshev (MVUE) UCL	46.17	97.5% Chebyshev (MVUE) UCL	57.73
99% Chebyshev (MVUE) UCL	80.44		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	28.69	95% Jackknife UCL	30.8
95% Standard Bootstrap UCL	27.95	95% Bootstrap-t UCL	34.45
95% Hall's Bootstrap UCL	29.17	95% Percentile Bootstrap UCL	28.14
95% BCA Bootstrap UCL	28.82		
90% Chebyshev(Mean, Sd) UCL	36.4	95% Chebyshev(Mean, Sd) UCL	44.13
97.5% Chebyshev(Mean, Sd) UCL	54.86	99% Chebyshev(Mean, Sd) UCL	75.93

Suggested UCL to Use

95% Student's-t UCL	30.8

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.2	Mean	37.85
Maximum	76.2	Median	32.65
SD	25.34	Std. Error of Mean	10.35
Coefficient of Variation	0.67	Skewness	0.57

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.7	95% Adjusted-CLT UCL (Chen-1995)	57.44
		95% Modified-t UCL (Johnson-1978)	59.1

Gamma GOF Test

A-D Test Statistic	0.327	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.255	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.496	k star (bias corrected MLE)	1.359
Theta hat (MLE)	15.16	Theta star (bias corrected MLE)	27.85
nu hat (MLE)	29.95	nu star (bias corrected)	16.31
MLE Mean (bias corrected)	37.85	MLE Sd (bias corrected)	32.47
		Approximate Chi Square Value (0.05)	8.181
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	6.217

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	75.46	95% Adjusted Gamma UCL (use when n<50)	99.29

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.934	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.216	**Lilliefors Lognormal GOF Test**

5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.416	Mean of logged Data	3.42
Maximum of Logged Data	4.333	SD of logged Data	0.742

Assuming Lognormal Distribution

95% H-UCL	120.1	90% Chebyshev (MVUE) UCL	72.65
95% Chebyshev (MVUE) UCL	88.26	97.5% Chebyshev (MVUE) UCL	109.9
99% Chebyshev (MVUE) UCL	152.5		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	54.87	95% Jackknife UCL	58.7
95% Standard Bootstrap UCL	53.22	95% Bootstrap-t UCL	62.47
95% Hall's Bootstrap UCL	52.11	95% Percentile Bootstrap UCL	53.98
95% BCA Bootstrap UCL	54.72		
90% Chebyshev(Mean, Sd) UCL	68.89	95% Chebyshev(Mean, Sd) UCL	82.95
97.5% Chebyshev(Mean, Sd) UCL	102.5	99% Chebyshev(Mean, Sd) UCL	140.8

Suggested UCL to Use

95% Student's-t UCL	58.7

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3	Mean	8.048
Maximum	17.2	Median	6.535
SD	5.611	Std. Error of Mean	2.291
Coefficient of Variation	0.697	Skewness	0.89

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.878	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.66	95% Adjusted-CLT UCL (Chen-1995)	12.71
		95% Modified-t UCL (Johnson-1978)	12.8

Gamma GOF Test

A-D Test Statistic	0.399	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.281	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.542	k star (bias corrected MLE)	1.382
Theta hat (MLE)	3.166	Theta star (bias corrected MLE)	5.824
nu hat (MLE)	30.5	nu star (bias corrected)	16.58
MLE Mean (bias corrected)	8.048	MLE Sd (bias corrected)	6.846
		Approximate Chi Square Value (0.05)	8.376
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	6.384

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	15.94	95% Adjusted Gamma UCL (use when n<50)	20.91

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.253	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.099	Mean of logged Data	1.876
Maximum of Logged Data	2.845	SD of logged Data	0.714

Assuming Lognormal Distribution

95% H-UCL	23.47	90% Chebyshev (MVUE) UCL	15
95% Chebyshev (MVUE) UCL	18.16	97.5% Chebyshev (MVUE) UCL	22.54
99% Chebyshev (MVUE) UCL	31.16		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	11.82	95% Jackknife UCL	12.66
95% Standard Bootstrap UCL	11.53	95% Bootstrap-t UCL	16.74
95% Hall's Bootstrap UCL	11.55	95% Percentile Bootstrap UCL	11.67
95% BCA Bootstrap UCL	11.71		
90% Chebyshev(Mean, Sd) UCL	14.92	95% Chebyshev(Mean, Sd) UCL	18.03
97.5% Chebyshev(Mean, Sd) UCL	22.35	99% Chebyshev(Mean, Sd) UCL	30.84

Suggested UCL to Use

95% Student's-t UCL	12.66

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.9	Mean	44.55
Maximum	99.1	Median	36.7
SD	34.18	Std. Error of Mean	13.95
Coefficient of Variation	0.767	Skewness	0.785

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.25	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.67	95% Adjusted-CLT UCL (Chen-1995)	72.28
		95% Modified-t UCL (Johnson-1978)	73.41

Gamma GOF Test

A-D Test Statistic	0.321	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.705	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.244	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.336	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.948	k star (bias corrected MLE)	1.085
Theta hat (MLE)	22.86	Theta star (bias corrected MLE)	41.05
nu hat (MLE)	23.38	nu star (bias corrected)	13.02
MLE Mean (bias corrected)	44.55	MLE Sd (bias corrected)	42.76
		Approximate Chi Square Value (0.05)	5.909
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	4.299

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	98.2	95% Adjusted Gamma UCL (use when n<50)	135

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.203	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.477	Mean of logged Data	3.519
Maximum of Logged Data	4.596	SD of logged Data	0.843

Assuming Lognormal Distribution

95% H-UCL	187.3	90% Chebyshev (MVUE) UCL	90.71
95% Chebyshev (MVUE) UCL	111.5	97.5% Chebyshev (MVUE) UCL	140.3
99% Chebyshev (MVUE) UCL	197		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	67.5	95% Jackknife UCL	72.67
95% Standard Bootstrap UCL	65.55	95% Bootstrap-t UCL	78.73
95% Hall's Bootstrap UCL	67.37	95% Percentile Bootstrap UCL	66.1
95% BCA Bootstrap UCL	69.57		
90% Chebyshev(Mean, Sd) UCL	86.41	95% Chebyshev(Mean, Sd) UCL	105.4
97.5% Chebyshev(Mean, Sd) UCL	131.7	99% Chebyshev(Mean, Sd) UCL	183.4

Suggested UCL to Use

95% Student's-t UCL	72.67

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

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.02	Mean	1.213
Maximum	1.3	Median	1.24
SD	0.106	Std. Error of Mean	0.0432
Coefficient of Variation	0.0872	Skewness	-1.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.827	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.246	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.3	95% Adjusted-CLT UCL (Chen-1995)	1.256
		95% Modified-t UCL (Johnson-1978)	1.296

Gamma GOF Test

A-D Test Statistic	0.583	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.696	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.253	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.332	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	148.1	k star (bias corrected MLE)	74.14
Theta hat (MLE)	0.00819	Theta star (bias corrected MLE)	0.0164
nu hat (MLE)	1777	nu star (bias corrected)	889.7
MLE Mean (bias corrected)	1.213	MLE Sd (bias corrected)	0.141
		Approximate Chi Square Value (0.05)	821.5
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	797.5

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.314	95% Adjusted Gamma UCL (use when n<50)	1.354

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.81	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.264	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.0198	Mean of logged Data	0.19
Maximum of Logged Data	0.262	SD of logged Data	0.0916

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	1.35
95% Chebyshev (MVUE) UCL	1.411	97.5% Chebyshev (MVUE) UCL	1.497
99% Chebyshev (MVUE) UCL	1.665		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	1.284	95% Jackknife UCL	1.3
95% Standard Bootstrap UCL	1.278	95% Bootstrap-t UCL	1.275
95% Hall's Bootstrap UCL	1.263	95% Percentile Bootstrap UCL	1.273
95% BCA Bootstrap UCL	1.262		
90% Chebyshev(Mean, Sd) UCL	1.343	95% Chebyshev(Mean, Sd) UCL	1.402
97.5% Chebyshev(Mean, Sd) UCL	1.483	99% Chebyshev(Mean, Sd) UCL	1.643

Suggested UCL to Use

95% Student's-t UCL	1.3

Recommended UCL exceeds the maximum observation

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

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.6	Mean	30.33
Maximum	62.5	Median	26.25
SD	21.11	Std. Error of Mean	8.619
Coefficient of Variation	0.696	Skewness	0.589

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.908	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.7	95% Adjusted-CLT UCL (Chen-1995)	46.72
		95% Modified-t UCL (Johnson-1978)	48.05

Gamma GOF Test

A-D Test Statistic	0.342	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.256	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.301	k star (bias corrected MLE)	1.262
Theta hat (MLE)	13.18	Theta star (bias corrected MLE)	24.04
nu hat (MLE)	27.61	nu star (bias corrected)	15.14
MLE Mean (bias corrected)	30.33	MLE Sd (bias corrected)	27.01
		Approximate Chi Square Value (0.05)	7.358
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	5.517

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	62.41	95% Adjusted Gamma UCL (use when n<50)	83.24

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.93	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.217	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.152	Mean of logged Data	3.179
Maximum of Logged Data	4.135	SD of logged Data	0.775

Assuming Lognormal Distribution

95% H-UCL	105.4	90% Chebyshev (MVUE) UCL	59.48
95% Chebyshev (MVUE) UCL	72.55	97.5% Chebyshev (MVUE) UCL	90.7
99% Chebyshev (MVUE) UCL	126.3		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	44.51	95% Jackknife UCL	47.7
95% Standard Bootstrap UCL	43.41	95% Bootstrap-t UCL	51.51
95% Hall's Bootstrap UCL	41.82	95% Percentile Bootstrap UCL	44.12
95% BCA Bootstrap UCL	43.35		
90% Chebyshev(Mean, Sd) UCL	56.19	95% Chebyshev(Mean, Sd) UCL	67.9
97.5% Chebyshev(Mean, Sd) UCL	84.16	99% Chebyshev(Mean, Sd) UCL	116.1

Suggested UCL to Use

95% Student's-t UCL	47.7

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.39	Mean	3.998
Maximum	11.5	Median	2.65
SD	3.816	Std. Error of Mean	1.558
Coefficient of Variation	0.954	Skewness	2.073

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.725	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.331	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	7.137	95% Adjusted-CLT UCL (Chen-1995)	7.969
		95% Modified-t UCL (Johnson-1978)	7.357

Gamma GOF Test

A-D Test Statistic	0.512	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.705	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.246	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.336	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.902	k star (bias corrected MLE)	1.062
Theta hat (MLE)	2.103	Theta star (bias corrected MLE)	3.765
nu hat (MLE)	22.82	nu star (bias corrected)	12.74
MLE Mean (bias corrected)	3.998	MLE Sd (bias corrected)	3.88
		Approximate Chi Square Value (0.05)	5.72
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	4.143

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	8.907	95% Adjusted Gamma UCL (use when n<50)	12.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.9	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.329	Mean of logged Data	1.1
Maximum of Logged Data	2.442	SD of logged Data	0.773

Assuming Lognormal Distribution

95% H-UCL	13.08	90% Chebyshev (MVUE) UCL	7.416
95% Chebyshev (MVUE) UCL	9.044	97.5% Chebyshev (MVUE) UCL	11.3
99% Chebyshev (MVUE) UCL	15.74		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	6.56	95% Jackknife UCL	7.137
95% Standard Bootstrap UCL	6.29	95% Bootstrap-t UCL	11.68
95% Hall's Bootstrap UCL	16	95% Percentile Bootstrap UCL	6.677
95% BCA Bootstrap UCL	7.658		
90% Chebyshev(Mean, Sd) UCL	8.671	95% Chebyshev(Mean, Sd) UCL	10.79
97.5% Chebyshev(Mean, Sd) UCL	13.73	99% Chebyshev(Mean, Sd) UCL	19.5

Suggested UCL to Use

95% Adjusted Gamma UCL	12.3

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.18	Mean	17.44
Maximum	43.3	Median	13.43
SD	15.19	Std. Error of Mean	6.2
Coefficient of Variation	0.871	Skewness	1.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.93	95% Adjusted-CLT UCL (Chen-1995)	30.58
		95% Modified-t UCL (Johnson-1978)	30.39

Gamma GOF Test

A-D Test Statistic	0.296	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.707	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.206	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.337	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.57	k star (bias corrected MLE)	0.896
Theta hat (MLE)	11.11	Theta star (bias corrected MLE)	19.46
nu hat (MLE)	18.84	nu star (bias corrected)	10.75
MLE Mean (bias corrected)	17.44	MLE Sd (bias corrected)	18.42
		Approximate Chi Square Value (0.05)	4.419
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	3.078

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	42.44	95% Adjusted Gamma UCL (use when n<50)	60.94

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.93	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.173	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.43	Mean of logged Data	2.508
Maximum of Logged Data	3.768	SD of logged Data	0.947

Assuming Lognormal Distribution

95% H-UCL	101.4	90% Chebyshev (MVUE) UCL	37.55
95% Chebyshev (MVUE) UCL	46.62	97.5% Chebyshev (MVUE) UCL	59.22
99% Chebyshev (MVUE) UCL	83.96		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	27.64	95% Jackknife UCL	29.93
95% Standard Bootstrap UCL	26.98	95% Bootstrap-t UCL	34.83
95% Hall's Bootstrap UCL	36.98	95% Percentile Bootstrap UCL	27.41
95% BCA Bootstrap UCL	29.68		
90% Chebyshev(Mean, Sd) UCL	36.04	95% Chebyshev(Mean, Sd) UCL	44.46
97.5% Chebyshev(Mean, Sd) UCL	56.15	99% Chebyshev(Mean, Sd) UCL	79.12

Suggested UCL to Use

95% Student's-t UCL	29.93

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.6	Mean	44.03
Maximum	93.1	Median	37.55
SD	32.14	Std. Error of Mean	13.12
Coefficient of Variation	0.73	Skewness	0.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.902	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.251	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.48	95% Adjusted-CLT UCL (Chen-1995)	69.18

		95% Modified-t UCL (Johnson-1978)	71.03

Gamma GOF Test

A-D Test Statistic	0.343	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.704	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.24	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.336	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.102	k star (bias corrected MLE)	1.162
Theta hat (MLE)	20.95	Theta star (bias corrected MLE)	37.89
nu hat (MLE)	25.23	nu star (bias corrected)	13.95
MLE Mean (bias corrected)	44.03	MLE Sd (bias corrected)	40.85
		Approximate Chi Square Value (0.05)	6.534
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	4.822

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	93.98	95% Adjusted Gamma UCL (use when n<50)	127.4

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.205	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.534	Mean of logged Data	3.529
Maximum of Logged Data	4.534	SD of logged Data	0.811

Assuming Lognormal Distribution

95% H-UCL	169.2	90% Chebyshev (MVUE) UCL	88.12
95% Chebyshev (MVUE) UCL	107.9	97.5% Chebyshev (MVUE) UCL	135.4
99% Chebyshev (MVUE) UCL	189.4		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	65.62	95% Jackknife UCL	70.48
95% Standard Bootstrap UCL	63.28	95% Bootstrap-t UCL	75.25
95% Hall's Bootstrap UCL	61.9	95% Percentile Bootstrap UCL	64.03
95% BCA Bootstrap UCL	67		
90% Chebyshev(Mean, Sd) UCL	83.4	95% Chebyshev(Mean, Sd) UCL	101.2
97.5% Chebyshev(Mean, Sd) UCL	126	99% Chebyshev(Mean, Sd) UCL	174.6

Suggested UCL to Use

95% Student's-t UCL	70.48

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

COPPER

General Statistics			
Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	14.03
Maximum	14.9	Median	13.85
SD	0.55	Std. Error of Mean	0.225
Coefficient of Variation	0.0392	Skewness	0.909

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test		
Shapiro Wilk Test Statistic	0.892	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.262	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.49	95% Adjusted-CLT UCL (Chen-1995)	14.49
		95% Modified-t UCL (Johnson-1978)	14.5

Gamma GOF Test		
A-D Test Statistic	0.409	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.696	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.268	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.332	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	792.6	k star (bias corrected MLE)	396.4
Theta hat (MLE)	0.0177	Theta star (bias corrected MLE)	0.0354
nu hat (MLE)	9511	nu star (bias corrected)	4757
MLE Mean (bias corrected)	14.03	MLE Sd (bias corrected)	0.705
		Approximate Chi Square Value (0.05)	4597
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	4540

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	14.52	95% Adjusted Gamma UCL (use when n<50)	14.7

Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.896	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.258	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics			
Minimum of Logged Data	2.603	Mean of logged Data	2.641

Maximum of Logged Data	2.701	SD of logged Data	0.0388

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	14.7
95% Chebyshev (MVUE) UCL	15	97.5% Chebyshev (MVUE) UCL	15.42
99% Chebyshev (MVUE) UCL	16.24		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	14.4	95% Jackknife UCL	14.49
95% Standard Bootstrap UCL	14.37	95% Bootstrap-t UCL	15.13
95% Hall's Bootstrap UCL	17.4	95% Percentile Bootstrap UCL	14.4
95% BCA Bootstrap UCL	14.42		
90% Chebyshev(Mean, Sd) UCL	14.71	95% Chebyshev(Mean, Sd) UCL	15.01
97.5% Chebyshev(Mean, Sd) UCL	15.44	99% Chebyshev(Mean, Sd) UCL	16.27

Suggested UCL to Use

95% Student's-t UCL	14.49

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30.5	Mean	64.03
Maximum	92.2	Median	66.25
SD	23.53	Std. Error of Mean	9.607
Coefficient of Variation	0.368	Skewness	-0.326

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.949	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.197	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	83.39	95% Adjusted-CLT UCL (Chen-1995)	78.47
		95% Modified-t UCL (Johnson-1978)	83.18

Gamma GOF Test

A-D Test Statistic	0.312	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.698	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.244	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.333	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	7.643	k star (bias corrected MLE)	3.933
Theta hat (MLE)	8.378	Theta star (bias corrected MLE)	16.28
nu hat (MLE)	91.71	nu star (bias corrected)	47.19
MLE Mean (bias corrected)	64.03	MLE Sd (bias corrected)	32.29
		Approximate Chi Square Value (0.05)	32.43
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	28.08

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	93.19	95% Adjusted Gamma UCL (use when n<50)	107.6

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.916	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.255	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.418	Mean of logged Data	4.093
Maximum of Logged Data	4.524	SD of logged Data	0.419

Assuming Lognormal Distribution

95% H-UCL	103.7	90% Chebyshev (MVUE) UCL	97.46
95% Chebyshev (MVUE) UCL	112.4	97.5% Chebyshev (MVUE) UCL	133.2
99% Chebyshev (MVUE) UCL	174		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	79.84	95% Jackknife UCL	83.39
95% Standard Bootstrap UCL	78.35	95% Bootstrap-t UCL	81.22
95% Hall's Bootstrap UCL	80.84	95% Percentile Bootstrap UCL	78.32
95% BCA Bootstrap UCL	77.37		
90% Chebyshev(Mean, Sd) UCL	92.86	95% Chebyshev(Mean, Sd) UCL	105.9
97.5% Chebyshev(Mean, Sd) UCL	124	99% Chebyshev(Mean, Sd) UCL	159.6

Suggested UCL to Use

95% Student's-t UCL	83.39

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

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	49.4	Mean	62.7
Maximum	75.1	Median	63.4
SD	12.42	Std. Error of Mean	5.071
Coefficient of Variation	0.198	Skewness	-0.0321

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.773	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.305	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.92	95% Adjusted-CLT UCL (Chen-1995)	70.97
		95% Modified-t UCL (Johnson-1978)	72.91

Gamma GOF Test

A-D Test Statistic	0.784	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.697	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.328	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.332	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	30.12	k star (bias corrected MLE)	15.17
Theta hat (MLE)	2.082	Theta star (bias corrected MLE)	4.133
nu hat (MLE)	361.4	nu star (bias corrected)	182
MLE Mean (bias corrected)	62.7	MLE Sd (bias corrected)	16.1
		Approximate Chi Square Value (0.05)	151.8
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	141.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	75.17	95% Adjusted Gamma UCL (use when n<50)	80.47

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.779	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.307	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.325	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.9	Mean of logged Data	4.122

Maximum of Logged Data	4.319	SD of logged Data	0.201

Assuming Lognormal Distribution

95% H-UCL	75.79	90% Chebyshev (MVUE) UCL	78.14
95% Chebyshev (MVUE) UCL	85.13	97.5% Chebyshev (MVUE) UCL	94.83
99% Chebyshev (MVUE) UCL	113.9		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	71.04	95% Jackknife UCL	72.92
95% Standard Bootstrap UCL	70.31	95% Bootstrap-t UCL	73.04
95% Hall's Bootstrap UCL	67.02	95% Percentile Bootstrap UCL	70.32
95% BCA Bootstrap UCL	70.07		
90% Chebyshev(Mean, Sd) UCL	77.91	95% Chebyshev(Mean, Sd) UCL	84.81
97.5% Chebyshev(Mean, Sd) UCL	94.37	99% Chebyshev(Mean, Sd) UCL	113.2

Suggested UCL to Use

95% Student's-t UCL	72.92

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 7:56:11 AM
From File	Table 1 APN32404208A - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.14	Mean	2.472
Maximum	3.75	Median	2.64
SD	1.039	Std. Error of Mean	0.424
Coefficient of Variation	0.42	Skewness	-0.285
Mean of logged Data	0.816	SD of logged Data	0.485

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.326	95% Adjusted-CLT UCL (Chen-1995)	3.117
		95% Modified-t UCL (Johnson-1978)	3.318

Nonparametric Distribution Free UCLs

95% CLT UCL	3.169	95% Jackknife UCL	3.326
95% Standard Bootstrap UCL	3.101	95% Bootstrap-t UCL	3.229
95% Hall's Bootstrap UCL	3.065	95% Percentile Bootstrap UCL	3.127
95% BCA Bootstrap UCL	3.033		
90% Chebyshev(Mean, Sd) UCL	3.744	95% Chebyshev(Mean, Sd) UCL	4.32
97.5% Chebyshev(Mean, Sd) UCL	5.12	99% Chebyshev(Mean, Sd) UCL	6.691

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

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.411	Mean	2.895
Maximum	5.77	Median	2.57
SD	2.67	Std. Error of Mean	1.09
Coefficient of Variation	0.922	Skewness	0.0797
Mean of logged Data	0.466	SD of logged Data	1.318

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.091	95% Adjusted-CLT UCL (Chen-1995)	4.726
		95% Modified-t UCL (Johnson-1978)	5.097

Nonparametric Distribution Free UCLs

95% CLT UCL	4.688	95% Jackknife UCL	5.091
95% Standard Bootstrap UCL	4.518	95% Bootstrap-t UCL	4.949
95% Hall's Bootstrap UCL	3.815	95% Percentile Bootstrap UCL	4.605
95% BCA Bootstrap UCL	4.565		
90% Chebyshev(Mean, Sd) UCL	6.165	95% Chebyshev(Mean, Sd) UCL	7.646
97.5% Chebyshev(Mean, Sd) UCL	9.702	99% Chebyshev(Mean, Sd) UCL	13.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.58	Mean	3.813
Maximum	7.83	Median	2.448
SD	2.721	Std. Error of Mean	1.111
Coefficient of Variation	0.714	Skewness	0.953
Mean of logged Data	1.137	SD of logged Data	0.68

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.051	95% Adjusted-CLT UCL (Chen-1995)	6.102
		95% Modified-t UCL (Johnson-1978)	6.123

Nonparametric Distribution Free UCLs

95% CLT UCL	5.64	95% Jackknife UCL	6.051
95% Standard Bootstrap UCL	5.496	95% Bootstrap-t UCL	13.97
95% Hall's Bootstrap UCL	21.26	95% Percentile Bootstrap UCL	5.653
95% BCA Bootstrap UCL	5.691		
90% Chebyshev(Mean, Sd) UCL	7.146	95% Chebyshev(Mean, Sd) UCL	8.655
97.5% Chebyshev(Mean, Sd) UCL	10.75	99% Chebyshev(Mean, Sd) UCL	14.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.2	Mean	25.75
Maximum	63.3	Median	20.35
SD	19.33	Std. Error of Mean	7.892
Coefficient of Variation	0.751	Skewness	1.955
Mean of logged Data	3.066	SD of logged Data	0.625

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.65	95% Adjusted-CLT UCL (Chen-1995)	45.46
		95% Modified-t UCL (Johnson-1978)	42.7

Nonparametric Distribution Free UCLs

95% CLT UCL	38.73	95% Jackknife UCL	41.65
95% Standard Bootstrap UCL	37.51	95% Bootstrap-t UCL	66.86
95% Hall's Bootstrap UCL	87.47	95% Percentile Bootstrap UCL	38.22
95% BCA Bootstrap UCL	42.8		
90% Chebyshev(Mean, Sd) UCL	49.43	95% Chebyshev(Mean, Sd) UCL	60.15
97.5% Chebyshev(Mean, Sd) UCL	75.03	99% Chebyshev(Mean, Sd) UCL	104.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.8	Mean	34.27
Maximum	82.1	Median	25.05
SD	25.21	Std. Error of Mean	10.29
Coefficient of Variation	0.736	Skewness	1.79
Mean of logged Data	3.352	SD of logged Data	0.629

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.01	95% Adjusted-CLT UCL (Chen-1995)	59.24
		95% Modified-t UCL (Johnson-1978)	56.26

Nonparametric Distribution Free UCLs

95% CLT UCL	51.2	95% Jackknife UCL	55.01
95% Standard Bootstrap UCL	49.53	95% Bootstrap-t UCL	96.82
95% Hall's Bootstrap UCL	128.9	95% Percentile Bootstrap UCL	52.33
95% BCA Bootstrap UCL	55.5		
90% Chebyshev(Mean, Sd) UCL	65.15	95% Chebyshev(Mean, Sd) UCL	79.13
97.5% Chebyshev(Mean, Sd) UCL	98.55	99% Chebyshev(Mean, Sd) UCL	136.7

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.9	Mean	42.9
Maximum	88.6	Median	34.9

SD	25.57	Std. Error of Mean	10.44
Coefficient of Variation	0.596	Skewness	1.372
Mean of logged Data	3.626	SD of logged Data	0.551

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	63.93	95% Adjusted-CLT UCL (Chen-1995)	66.32
		95% Modified-t UCL (Johnson-1978)	64.91

Nonparametric Distribution Free UCLs

95% CLT UCL	60.07	95% Jackknife UCL	63.93
95% Standard Bootstrap UCL	58.5	95% Bootstrap-t UCL	94.1
95% Hall's Bootstrap UCL	150	95% Percentile Bootstrap UCL	59.3
95% BCA Bootstrap UCL	61.72		
90% Chebyshev(Mean, Sd) UCL	74.22	95% Chebyshev(Mean, Sd) UCL	88.4
97.5% Chebyshev(Mean, Sd) UCL	108.1	99% Chebyshev(Mean, Sd) UCL	146.8

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.7	Mean	19.5
Maximum	33.6	Median	18.1
SD	8.071	Std. Error of Mean	3.295
Coefficient of Variation	0.414	Skewness	1.115
Mean of logged Data	2.903	SD of logged Data	0.398

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.14	95% Adjusted-CLT UCL (Chen-1995)	26.52
		95% Modified-t UCL (Johnson-1978)	26.39

Nonparametric Distribution Free UCLs

95% CLT UCL	24.92	95% Jackknife UCL	26.14
95% Standard Bootstrap UCL	24.42	95% Bootstrap-t UCL	29.61
95% Hall's Bootstrap UCL	59.21	95% Percentile Bootstrap UCL	24.83
95% BCA Bootstrap UCL	25.73		
90% Chebyshev(Mean, Sd) UCL	29.38	95% Chebyshev(Mean, Sd) UCL	33.86
97.5% Chebyshev(Mean, Sd) UCL	40.08	99% Chebyshev(Mean, Sd) UCL	52.28

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.25	Mean	17.07
Maximum	39.4	Median	12.55
SD	12.04	Std. Error of Mean	4.916
Coefficient of Variation	0.705	Skewness	1.635
Mean of logged Data	2.663	SD of logged Data	0.622

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.98	95% Adjusted-CLT UCL (Chen-1995)	28.66
		95% Modified-t UCL (Johnson-1978)	27.53

Nonparametric Distribution Free UCLs

95% CLT UCL	25.16	95% Jackknife UCL	26.98
95% Standard Bootstrap UCL	24.46	95% Bootstrap-t UCL	49.45
95% Hall's Bootstrap UCL	63.41	95% Percentile Bootstrap UCL	25.4
95% BCA Bootstrap UCL	28.41		
90% Chebyshev(Mean, Sd) UCL	31.82	95% Chebyshev(Mean, Sd) UCL	38.5
97.5% Chebyshev(Mean, Sd) UCL	47.77	99% Chebyshev(Mean, Sd) UCL	65.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.7	Mean	35.68
Maximum	88.4	Median	29.25
SD	27.12	Std. Error of Mean	11.07
Coefficient of Variation	0.76	Skewness	1.952
Mean of logged Data	3.385	SD of logged Data	0.64

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58	95% Adjusted-CLT UCL (Chen-1995)	63.33
		95% Modified-t UCL (Johnson-1978)	59.47

Nonparametric Distribution Free UCLs

95% CLT UCL	53.9	95% Jackknife UCL	58
95% Standard Bootstrap UCL	51.92	95% Bootstrap-t UCL	87
95% Hall's Bootstrap UCL	125.8	95% Percentile Bootstrap UCL	53.65
95% BCA Bootstrap UCL	59.62		
90% Chebyshev(Mean, Sd) UCL	68.9	95% Chebyshev(Mean, Sd) UCL	83.95
97.5% Chebyshev(Mean, Sd) UCL	104.8	99% Chebyshev(Mean, Sd) UCL	145.9

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

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.195	Mean	6.534
Maximum	14.8	Median	4.555
SD	4.585	Std. Error of Mean	1.872
Coefficient of Variation	0.702	Skewness	1.489
Mean of logged Data	1.701	SD of logged Data	0.625

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

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.31	95% Adjusted-CLT UCL (Chen-1995)	10.83
		95% Modified-t UCL (Johnson-1978)	10.5

Nonparametric Distribution Free UCLs

95% CLT UCL	9.613	95% Jackknife UCL	10.31
95% Standard Bootstrap UCL	9.386	95% Bootstrap-t UCL	16.79
95% Hall's Bootstrap UCL	25.78	95% Percentile Bootstrap UCL	9.398
95% BCA Bootstrap UCL	10.33		
90% Chebyshev(Mean, Sd) UCL	12.15	95% Chebyshev(Mean, Sd) UCL	14.69
97.5% Chebyshev(Mean, Sd) UCL	18.22	99% Chebyshev(Mean, Sd) UCL	25.16

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.9	Mean	38.55
Maximum	84.8	Median	31.15
SD	24.93	Std. Error of Mean	10.18
Coefficient of Variation	0.647	Skewness	1.603
Mean of logged Data	3.503	SD of logged Data	0.578

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.06	95% Adjusted-CLT UCL (Chen-1995)	62.41
		95% Modified-t UCL (Johnson-1978)	60.17

Nonparametric Distribution Free UCLs

95% CLT UCL	55.29	95% Jackknife UCL	59.06
95% Standard Bootstrap UCL	54.1	95% Bootstrap-t UCL	83.46
95% Hall's Bootstrap UCL	134.1	95% Percentile Bootstrap UCL	54.53

95% BCA Bootstrap UCL	58.92		
90% Chebyshev(Mean, Sd) UCL	69.08	95% Chebyshev(Mean, Sd) UCL	82.91
97.5% Chebyshev(Mean, Sd) UCL	102.1	99% Chebyshev(Mean, Sd) UCL	139.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.275	Mean	2.148
Maximum	5.02	Median	1.443
SD	1.475	Std. Error of Mean	0.602
Coefficient of Variation	0.687	Skewness	2.02
Mean of logged Data	0.619	SD of logged Data	0.546

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.362	95% Adjusted-CLT UCL (Chen-1995)	3.669
		95% Modified-t UCL (Johnson-1978)	3.444

Nonparametric Distribution Free UCLs

95% CLT UCL	3.139	95% Jackknife UCL	3.362
95% Standard Bootstrap UCL	3.062	95% Bootstrap-t UCL	9.648
95% Hall's Bootstrap UCL	8.818	95% Percentile Bootstrap UCL	3.158
95% BCA Bootstrap UCL	3.533		
90% Chebyshev(Mean, Sd) UCL	3.955	95% Chebyshev(Mean, Sd) UCL	4.773
97.5% Chebyshev(Mean, Sd) UCL	5.909	99% Chebyshev(Mean, Sd) UCL	8.139

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.9	Mean	26.68
Maximum	56.6	Median	20.45
SD	16.88	Std. Error of Mean	6.893
Coefficient of Variation	0.633	Skewness	1.369
Mean of logged Data	3.136	SD of logged Data	0.581

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.57	95% Adjusted-CLT UCL (Chen-1995)	42.14
		95% Modified-t UCL (Johnson-1978)	41.21

Nonparametric Distribution Free UCLs

95% CLT UCL	38.02	95% Jackknife UCL	40.57
95% Standard Bootstrap UCL	37.2	95% Bootstrap-t UCL	64.51
95% Hall's Bootstrap UCL	103.7	95% Percentile Bootstrap UCL	37.6
95% BCA Bootstrap UCL	39.25		
90% Chebyshev(Mean, Sd) UCL	47.36	95% Chebyshev(Mean, Sd) UCL	56.73
97.5% Chebyshev(Mean, Sd) UCL	69.73	99% Chebyshev(Mean, Sd) UCL	95.26

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.3	Mean	4.07
Maximum	7.44	Median	3.795
SD	1.889	Std. Error of Mean	0.771
Coefficient of Variation	0.464	Skewness	1.26
Mean of logged Data	1.321	SD of logged Data	0.437

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.624	95% Adjusted-CLT UCL (Chen-1995)	5.762
		95% Modified-t UCL (Johnson-1978)	5.69

Nonparametric Distribution Free UCLs

95% CLT UCL	5.339	95% Jackknife UCL	5.624
95% Standard Bootstrap UCL	5.214	95% Bootstrap-t UCL	6.267
95% Hall's Bootstrap UCL	11.69	95% Percentile Bootstrap UCL	5.302
95% BCA Bootstrap UCL	5.493		
90% Chebyshev(Mean, Sd) UCL	6.384	95% Chebyshev(Mean, Sd) UCL	7.432
97.5% Chebyshev(Mean, Sd) UCL	8.886	99% Chebyshev(Mean, Sd) UCL	11.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.87	Mean	19.81
Maximum	39.2	Median	13.7
SD	14.27	Std. Error of Mean	5.826
Coefficient of Variation	0.72	Skewness	0.823
Mean of logged Data	2.768	SD of logged Data	0.722

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.55	95% Adjusted-CLT UCL (Chen-1995)	31.48
		95% Modified-t UCL (Johnson-1978)	31.88

Nonparametric Distribution Free UCLs

95% CLT UCL	29.39	95% Jackknife UCL	31.55
95% Standard Bootstrap UCL	28.43	95% Bootstrap-t UCL	57.63
95% Hall's Bootstrap UCL	123.2	95% Percentile Bootstrap UCL	29.1
95% BCA Bootstrap UCL	29.43		
90% Chebyshev(Mean, Sd) UCL	37.29	95% Chebyshev(Mean, Sd) UCL	45.21
97.5% Chebyshev(Mean, Sd) UCL	56.19	99% Chebyshev(Mean, Sd) UCL	77.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.2	Mean	40.7
Maximum	100	Median	31
SD	30.76	Std. Error of Mean	12.56
Coefficient of Variation	0.756	Skewness	1.898
Mean of logged Data	3.518	SD of logged Data	0.636

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	66.01	95% Adjusted-CLT UCL (Chen-1995)	71.76
		95% Modified-t UCL (Johnson-1978)	67.63

Nonparametric Distribution Free UCLs

95% CLT UCL	61.36	95% Jackknife UCL	66.01
95% Standard Bootstrap UCL	59.56	95% Bootstrap-t UCL	99.67
95% Hall's Bootstrap UCL	144.2	95% Percentile Bootstrap UCL	62.1
95% BCA Bootstrap UCL	70.85		
90% Chebyshev(Mean, Sd) UCL	78.38	95% Chebyshev(Mean, Sd) UCL	95.44
97.5% Chebyshev(Mean, Sd) UCL	119.1	99% Chebyshev(Mean, Sd) UCL	165.7

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

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

ANTIMONY

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.69	Mean	0.756
Maximum	0.961	Median	0.723

SD	0.102	Std. Error of Mean	0.0417
Coefficient of Variation	0.135	Skewness	2.272
Mean of logged Data	-0.286	SD of logged Data	0.124

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.84	95% Adjusted-CLT UCL (Chen-1995)	0.866
		95% Modified-t UCL (Johnson-1978)	0.846

Nonparametric Distribution Free UCLs

95% CLT UCL	0.825	95% Jackknife UCL	0.84
95% Standard Bootstrap UCL	0.821	95% Bootstrap-t UCL	1.057
95% Hall's Bootstrap UCL	1.155	95% Percentile Bootstrap UCL	0.836
95% BCA Bootstrap UCL	0.849		
90% Chebyshev(Mean, Sd) UCL	0.881	95% Chebyshev(Mean, Sd) UCL	0.938
97.5% Chebyshev(Mean, Sd) UCL	1.016	99% Chebyshev(Mean, Sd) UCL	1.171

Suggested UCL to Use

95% Student's-t UCL	0.84	or 95% Modified-t UCL	0.846

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	15.3	Mean	69.02
Maximum	142	Median	47.7
SD	60.59	Std. Error of Mean	24.74
Coefficient of Variation	0.878	Skewness	0.524
Mean of logged Data	3.825	SD of logged Data	1.036

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	118.9	95% Adjusted-CLT UCL (Chen-1995)	115.4
		95% Modified-t UCL (Johnson-1978)	119.7

Nonparametric Distribution Free UCLs

95% CLT UCL	109.7	95% Jackknife UCL	118.9
95% Standard Bootstrap UCL	106.5	95% Bootstrap-t UCL	135.4
95% Hall's Bootstrap UCL	121.9	95% Percentile Bootstrap UCL	110.3
95% BCA Bootstrap UCL	109.7		
90% Chebyshev(Mean, Sd) UCL	143.2	95% Chebyshev(Mean, Sd) UCL	176.8
97.5% Chebyshev(Mean, Sd) UCL	223.5	99% Chebyshev(Mean, Sd) UCL	315.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	25.5	Mean	30.9
Maximum	49	Median	27.9
SD	9.025	Std. Error of Mean	3.684
Coefficient of Variation	0.292	Skewness	2.263
Mean of logged Data	3.402	SD of logged Data	0.248

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

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.32	95% Adjusted-CLT UCL (Chen-1995)	40.6
		95% Modified-t UCL (Johnson-1978)	38.89

Nonparametric Distribution Free UCLs

95% CLT UCL	36.96	95% Jackknife UCL	38.32
95% Standard Bootstrap UCL	36.56	95% Bootstrap-t UCL	58.58
95% Hall's Bootstrap UCL	63.54	95% Percentile Bootstrap UCL	37.25
95% BCA Bootstrap UCL	38.57		
90% Chebyshev(Mean, Sd) UCL	41.95	95% Chebyshev(Mean, Sd) UCL	46.96
97.5% Chebyshev(Mean, Sd) UCL	53.91	99% Chebyshev(Mean, Sd) UCL	67.56

Suggested UCL to Use

95% Student's-t UCL	38.32	or 95% Modified-t UCL	38.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	52.8	Mean	65.17
Maximum	77.1	Median	65.4
SD	11.46	Std. Error of Mean	4.679
Coefficient of Variation	0.176	Skewness	-0.0263
Mean of logged Data	4.164	SD of logged Data	0.178

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	74.59	95% Adjusted-CLT UCL (Chen-1995)	72.81
		95% Modified-t UCL (Johnson-1978)	74.59

Nonparametric Distribution Free UCLs

95% CLT UCL	72.86	95% Jackknife UCL	74.59
95% Standard Bootstrap UCL	72.11	95% Bootstrap-t UCL	74.03
95% Hall's Bootstrap UCL	69.79	95% Percentile Bootstrap UCL	72.35
95% BCA Bootstrap UCL	72.17		
90% Chebyshev(Mean, Sd) UCL	79.2	95% Chebyshev(Mean, Sd) UCL	85.56
97.5% Chebyshev(Mean, Sd) UCL	94.39	99% Chebyshev(Mean, Sd) UCL	111.7

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

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

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:51:45 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404211C) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.791	Mean	2.143
Maximum	3.885	Median	2.075
SD	1.204	Std. Error of Mean	0.492
Coefficient of Variation	0.562	Skewness	0.333
Mean of logged Data	0.608	SD of logged Data	0.634

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.133	95% Adjusted-CLT UCL (Chen-1995)	3.023
		95% Modified-t UCL (Johnson-1978)	3.144

Nonparametric Distribution Free UCLs

95% CLT UCL	2.951	95% Jackknife UCL	3.133
95% Standard Bootstrap UCL	2.864	95% Bootstrap-t UCL	3.263
95% Hall's Bootstrap UCL	3.131	95% Percentile Bootstrap UCL	2.939
95% BCA Bootstrap UCL	2.919		
90% Chebyshev(Mean, Sd) UCL	3.618	95% Chebyshev(Mean, Sd) UCL	4.286
97.5% Chebyshev(Mean, Sd) UCL	5.213	99% Chebyshev(Mean, Sd) UCL	7.034

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.51	Mean	1.132
Maximum	2.075	Median	0.98
SD	0.609	Std. Error of Mean	0.248
Coefficient of Variation	0.538	Skewness	0.729
Mean of logged Data	0.00136	SD of logged Data	0.544

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.632	95% Adjusted-CLT UCL (Chen-1995)	1.619
		95% Modified-t UCL (Johnson-1978)	1.644

Nonparametric Distribution Free UCLs

95% CLT UCL	1.54	95% Jackknife UCL	1.632
95% Standard Bootstrap UCL	1.509	95% Bootstrap-t UCL	1.798
95% Hall's Bootstrap UCL	1.785	95% Percentile Bootstrap UCL	1.528
95% BCA Bootstrap UCL	1.559		
90% Chebyshev(Mean, Sd) UCL	1.877	95% Chebyshev(Mean, Sd) UCL	2.214
97.5% Chebyshev(Mean, Sd) UCL	2.683	99% Chebyshev(Mean, Sd) UCL	3.603

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

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.41	Mean	3.718
Maximum	8.4	Median	2.895
SD	2.568	Std. Error of Mean	1.048
Coefficient of Variation	0.691	Skewness	1.478
Mean of logged Data	1.135	SD of logged Data	0.642

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

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

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	5.831	95% Adjusted-CLT UCL (Chen-1995)	6.119
		95% Modified-t UCL (Johnson-1978)	5.936

Nonparametric Distribution Free UCLs

95% CLT UCL	5.443	95% Jackknife UCL	5.831
95% Standard Bootstrap UCL	5.314	95% Bootstrap-t UCL	8.837
95% Hall's Bootstrap UCL	13.41	95% Percentile Bootstrap UCL	5.58
95% BCA Bootstrap UCL	5.798		
90% Chebyshev(Mean, Sd) UCL	6.864	95% Chebyshev(Mean, Sd) UCL	8.288
97.5% Chebyshev(Mean, Sd) UCL	10.27	99% Chebyshev(Mean, Sd) UCL	14.15

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.2	Mean	16.8
Maximum	29.4	Median	14.55
SD	10.38	Std. Error of Mean	4.239
Coefficient of Variation	0.618	Skewness	0.0558
Mean of logged Data	2.556	SD of logged Data	0.945

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.34	95% Adjusted-CLT UCL (Chen-1995)	23.88
		95% Modified-t UCL (Johnson-1978)	25.36

Nonparametric Distribution Free UCLs

95% CLT UCL	23.77	95% Jackknife UCL	25.34
95% Standard Bootstrap UCL	23.1	95% Bootstrap-t UCL	28.9
95% Hall's Bootstrap UCL	33.53	95% Percentile Bootstrap UCL	23.63
95% BCA Bootstrap UCL	23.63		
90% Chebyshev(Mean, Sd) UCL	29.52	95% Chebyshev(Mean, Sd) UCL	35.28
97.5% Chebyshev(Mean, Sd) UCL	43.27	99% Chebyshev(Mean, Sd) UCL	58.98

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	22.63
Maximum	39.8	Median	19.85
SD	14.02	Std. Error of Mean	5.723
Coefficient of Variation	0.62	Skewness	0.0183
Mean of logged Data	2.838	SD of logged Data	0.987

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.16	95% Adjusted-CLT UCL (Chen-1995)	32.08
		95% Modified-t UCL (Johnson-1978)	34.16

Nonparametric Distribution Free UCLs

95% CLT UCL	32.04	95% Jackknife UCL	34.16
95% Standard Bootstrap UCL	31.31	95% Bootstrap-t UCL	38.06
95% Hall's Bootstrap UCL	45.95	95% Percentile Bootstrap UCL	31.9
95% BCA Bootstrap UCL	31.75		
90% Chebyshev(Mean, Sd) UCL	39.8	95% Chebyshev(Mean, Sd) UCL	47.57
97.5% Chebyshev(Mean, Sd) UCL	58.37	99% Chebyshev(Mean, Sd) UCL	79.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.23	Mean	32.86
Maximum	57.4	Median	28.5
SD	20.65	Std. Error of Mean	8.43
Coefficient of Variation	0.628	Skewness	0.093
Mean of logged Data	3.22	SD of logged Data	0.955

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.84	95% Adjusted-CLT UCL (Chen-1995)	47.06
		95% Modified-t UCL (Johnson-1978)	49.89

Nonparametric Distribution Free UCLs

95% CLT UCL	46.72	95% Jackknife UCL	49.84
95% Standard Bootstrap UCL	45.6	95% Bootstrap-t UCL	57.18
95% Hall's Bootstrap UCL	67.28	95% Percentile Bootstrap UCL	45.82
95% BCA Bootstrap UCL	45.82		
90% Chebyshev(Mean, Sd) UCL	58.14	95% Chebyshev(Mean, Sd) UCL	69.6
97.5% Chebyshev(Mean, Sd) UCL	85.5	99% Chebyshev(Mean, Sd) UCL	116.7

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.38	Mean	18.65
Maximum	33.2	Median	15.55
SD	11.96	Std. Error of Mean	4.882
Coefficient of Variation	0.641	Skewness	0.16
Mean of logged Data	2.647	SD of logged Data	0.962

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.48	95% Adjusted-CLT UCL (Chen-1995)	27.02
		95% Modified-t UCL (Johnson-1978)	28.54

Nonparametric Distribution Free UCLs

95% CLT UCL	26.68	95% Jackknife UCL	28.48

95% Standard Bootstrap UCL	25.97	95% Bootstrap-t UCL	34
95% Hall's Bootstrap UCL	37.55	95% Percentile Bootstrap UCL	26.3
95% BCA Bootstrap UCL	26.22		
90% Chebyshev(Mean, Sd) UCL	33.29	95% Chebyshev(Mean, Sd) UCL	39.93
97.5% Chebyshev(Mean, Sd) UCL	49.13	99% Chebyshev(Mean, Sd) UCL	67.22

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	1
Minimum	8.11	Mean	15.1
Maximum	23.2	Median	12
SD	6.953	Std. Error of Mean	3.109
Coefficient of Variation	0.46	Skewness	0.45
Mean of logged Data	2.628	SD of logged Data	0.467

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.73	95% Adjusted-CLT UCL (Chen-1995)	20.88
		95% Modified-t UCL (Johnson-1978)	21.83

Nonparametric Distribution Free UCLs

95% CLT UCL	20.22	95% Jackknife UCL	21.73
95% Standard Bootstrap UCL	19.71	95% Bootstrap-t UCL	34.88
95% Hall's Bootstrap UCL	92.18	95% Percentile Bootstrap UCL	20.1
95% BCA Bootstrap UCL	19.92		
90% Chebyshev(Mean, Sd) UCL	24.43	95% Chebyshev(Mean, Sd) UCL	28.66
97.5% Chebyshev(Mean, Sd) UCL	34.52	99% Chebyshev(Mean, Sd) UCL	46.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.23	Mean	26.34
Maximum	47.5	Median	22.3
SD	16.72	Std. Error of Mean	6.825
Coefficient of Variation	0.635	Skewness	0.141
Mean of logged Data	2.991	SD of logged Data	0.973

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.09	95% Adjusted-CLT UCL (Chen-1995)	37.98
		95% Modified-t UCL (Johnson-1978)	40.16

Nonparametric Distribution Free UCLs

95% CLT UCL	37.56	95% Jackknife UCL	40.09
95% Standard Bootstrap UCL	36.56	95% Bootstrap-t UCL	46.39
95% Hall's Bootstrap UCL	61.18	95% Percentile Bootstrap UCL	37.08
95% BCA Bootstrap UCL	36.11		
90% Chebyshev(Mean, Sd) UCL	46.81	95% Chebyshev(Mean, Sd) UCL	56.09
97.5% Chebyshev(Mean, Sd) UCL	68.96	99% Chebyshev(Mean, Sd) UCL	94.24

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

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	7.188
Maximum	12.95	Median	7.165
SD	3.614	Std. Error of Mean	1.475
Coefficient of Variation	0.503	Skewness	0.595
Mean of logged Data	1.86	SD of logged Data	0.531

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.16	95% Adjusted-CLT UCL (Chen-1995)	9.998
		95% Modified-t UCL (Johnson-1978)	10.22

Nonparametric Distribution Free UCLs

95% CLT UCL	9.615	95% Jackknife UCL	10.16
95% Standard Bootstrap UCL	9.391	95% Bootstrap-t UCL	10.89
95% Hall's Bootstrap UCL	10.02	95% Percentile Bootstrap UCL	9.608
95% BCA Bootstrap UCL	9.845		
90% Chebyshev(Mean, Sd) UCL	11.61	95% Chebyshev(Mean, Sd) UCL	13.62
97.5% Chebyshev(Mean, Sd) UCL	16.4	99% Chebyshev(Mean, Sd) UCL	21.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.19	Mean	28.67
Maximum	50.4	Median	24.95
SD	18.52	Std. Error of Mean	7.561
Coefficient of Variation	0.646	Skewness	0.104
Mean of logged Data	3.056	SD of logged Data	1.015

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.9	95% Adjusted-CLT UCL (Chen-1995)	41.45
		95% Modified-t UCL (Johnson-1978)	43.95

Nonparametric Distribution Free UCLs

95% CLT UCL	41.1	95% Jackknife UCL	43.9
95% Standard Bootstrap UCL	39.63	95% Bootstrap-t UCL	50.56
95% Hall's Bootstrap UCL	57.44	95% Percentile Bootstrap UCL	40.38
95% BCA Bootstrap UCL	40.97		
90% Chebyshev(Mean, Sd) UCL	51.35	95% Chebyshev(Mean, Sd) UCL	61.62
97.5% Chebyshev(Mean, Sd) UCL	75.88	99% Chebyshev(Mean, Sd) UCL	103.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.94	Mean	1.942
Maximum	5.2	Median	1.3
SD	1.611	Std. Error of Mean	0.658
Coefficient of Variation	0.83	Skewness	2.349
Mean of logged Data	0.474	SD of logged Data	0.601

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.267	95% Adjusted-CLT UCL (Chen-1995)	3.697
		95% Modified-t UCL (Johnson-1978)	3.372

Nonparametric Distribution Free UCLs

95% CLT UCL	3.024	95% Jackknife UCL	3.267
95% Standard Bootstrap UCL	2.944	95% Bootstrap-t UCL	8.913
95% Hall's Bootstrap UCL	13.89	95% Percentile Bootstrap UCL	3.187
95% BCA Bootstrap UCL	3.36		
90% Chebyshev(Mean, Sd) UCL	3.915	95% Chebyshev(Mean, Sd) UCL	4.809
97.5% Chebyshev(Mean, Sd) UCL	6.049	99% Chebyshev(Mean, Sd) UCL	8.486

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	2.58	Mean	19.48
Maximum	34.3	Median	16.7
SD	12.37	Std. Error of Mean	5.051
Coefficient of Variation	0.635	Skewness	0.143
Mean of logged Data	2.698	SD of logged Data	0.947

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.66	95% Adjusted-CLT UCL (Chen-1995)	28.1
		95% Modified-t UCL (Johnson-1978)	29.71

Nonparametric Distribution Free UCLs

95% CLT UCL	27.79	95% Jackknife UCL	29.66
95% Standard Bootstrap UCL	26.87	95% Bootstrap-t UCL	34.6
95% Hall's Bootstrap UCL	39.08	95% Percentile Bootstrap UCL	27.37
95% BCA Bootstrap UCL	27.37		
90% Chebyshev(Mean, Sd) UCL	34.63	95% Chebyshev(Mean, Sd) UCL	41.5
97.5% Chebyshev(Mean, Sd) UCL	51.02	99% Chebyshev(Mean, Sd) UCL	69.74

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.979	Mean	2.96
Maximum	5.01	Median	3.29
SD	1.469	Std. Error of Mean	0.6
Coefficient of Variation	0.496	Skewness	-0.133
Mean of logged Data	0.951	SD of logged Data	0.611

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	4.168	95% Adjusted-CLT UCL (Chen-1995)	3.912
		95% Modified-t UCL (Johnson-1978)	4.163

Nonparametric Distribution Free UCLs

95% CLT UCL	3.946	95% Jackknife UCL	4.168
95% Standard Bootstrap UCL	3.886	95% Bootstrap-t UCL	4.085
95% Hall's Bootstrap UCL	3.83	95% Percentile Bootstrap UCL	3.875
95% BCA Bootstrap UCL	3.853		
90% Chebyshev(Mean, Sd) UCL	4.759	95% Chebyshev(Mean, Sd) UCL	5.574
97.5% Chebyshev(Mean, Sd) UCL	6.706	99% Chebyshev(Mean, Sd) UCL	8.928

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.2	Mean	12.2
Maximum	19.4	Median	11.53
SD	6.349	Std. Error of Mean	2.592
Coefficient of Variation	0.52	Skewness	-0.0929
Mean of logged Data	2.347	SD of logged Data	0.671

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.42	95% Adjusted-CLT UCL (Chen-1995)	16.36
		95% Modified-t UCL (Johnson-1978)	17.41

Nonparametric Distribution Free UCLs

95% CLT UCL	16.47	95% Jackknife UCL	17.42
95% Standard Bootstrap UCL	16.17	95% Bootstrap-t UCL	17.51
95% Hall's Bootstrap UCL	18.08	95% Percentile Bootstrap UCL	16.39
95% BCA Bootstrap UCL	16.18		
90% Chebyshev(Mean, Sd) UCL	19.98	95% Chebyshev(Mean, Sd) UCL	23.5
97.5% Chebyshev(Mean, Sd) UCL	28.39	99% Chebyshev(Mean, Sd) UCL	37.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.28	Mean	30.96
Maximum	61.7	Median	25.35
SD	21.33	Std. Error of Mean	8.709
Coefficient of Variation	0.689	Skewness	0.41
Mean of logged Data	3.113	SD of logged Data	1.041

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.51	95% Adjusted-CLT UCL (Chen-1995)	46.85
		95% Modified-t UCL (Johnson-1978)	48.75

Nonparametric Distribution Free UCLs

95% CLT UCL	45.29	95% Jackknife UCL	48.51
95% Standard Bootstrap UCL	44.1	95% Bootstrap-t UCL	59.6
95% Hall's Bootstrap UCL	99.13	95% Percentile Bootstrap UCL	43.88
95% BCA Bootstrap UCL	44.27		
90% Chebyshev(Mean, Sd) UCL	57.09	95% Chebyshev(Mean, Sd) UCL	68.92
97.5% Chebyshev(Mean, Sd) UCL	85.35	99% Chebyshev(Mean, Sd) UCL	117.6

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

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	15.5	Mean	16.78
Maximum	18.5	Median	16.75
SD	1.102	Std. Error of Mean	0.45
Coefficient of Variation	0.0656	Skewness	0.497
Mean of logged Data	2.819	SD of logged Data	0.0651

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.69	95% Adjusted-CLT UCL (Chen-1995)	17.62
		95% Modified-t UCL (Johnson-1978)	17.7

Nonparametric Distribution Free UCLs

95% CLT UCL	17.52	95% Jackknife UCL	17.69
95% Standard Bootstrap UCL	17.45	95% Bootstrap-t UCL	17.85
95% Hall's Bootstrap UCL	17.75	95% Percentile Bootstrap UCL	17.47
95% BCA Bootstrap UCL	17.55		
90% Chebyshev(Mean, Sd) UCL	18.13	95% Chebyshev(Mean, Sd) UCL	18.74
97.5% Chebyshev(Mean, Sd) UCL	19.59	99% Chebyshev(Mean, Sd) UCL	21.26

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	51.27
Maximum	84.3	Median	51.95
SD	28.42	Std. Error of Mean	11.6
Coefficient of Variation	0.554	Skewness	-0.123
Mean of logged Data	3.766	SD of logged Data	0.695

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.64	95% Adjusted-CLT UCL (Chen-1995)	69.72
		95% Modified-t UCL (Johnson-1978)	74.55

Nonparametric Distribution Free UCLs

95% CLT UCL	70.35	95% Jackknife UCL	74.64
95% Standard Bootstrap UCL	68.19	95% Bootstrap-t UCL	73.15
95% Hall's Bootstrap UCL	65.99	95% Percentile Bootstrap UCL	69.18
95% BCA Bootstrap UCL	67.98		
90% Chebyshev(Mean, Sd) UCL	86.07	95% Chebyshev(Mean, Sd) UCL	101.8
97.5% Chebyshev(Mean, Sd) UCL	123.7	99% Chebyshev(Mean, Sd) UCL	166.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.9	Mean	65.38
Maximum	79.1	Median	59.7
SD	10.26	Std. Error of Mean	4.188
Coefficient of Variation	0.157	Skewness	0.927
Mean of logged Data	4.171	SD of logged Data	0.151

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

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	73.82	95% Adjusted-CLT UCL (Chen-1995)	73.97
		95% Modified-t UCL (Johnson-1978)	74.09

Nonparametric Distribution Free UCLs

95% CLT UCL	72.27	95% Jackknife UCL	73.82
95% Standard Bootstrap UCL	71.56	95% Bootstrap-t UCL	121.1
95% Hall's Bootstrap UCL	171.3	95% Percentile Bootstrap UCL	72.08
95% BCA Bootstrap UCL	72.18		
90% Chebyshev(Mean, Sd) UCL	77.95	95% Chebyshev(Mean, Sd) UCL	83.64
97.5% Chebyshev(Mean, Sd) UCL	91.54	99% Chebyshev(Mean, Sd) UCL	107.1

Suggested UCL to Use

95% Student's-t UCL	73.82	or 95% Modified-t UCL	74.09

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:47:01 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404213) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.87	Mean	2.727
Maximum	3.25	Median	3.06
SD	0.748	Std. Error of Mean	0.432
Coefficient of Variation	0.274	Skewness	-1.607
Mean of logged Data	0.974	SD of logged Data	0.303

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.988	95% Adjusted-CLT UCL (Chen-1995)	3.009
		95% Modified-t UCL (Johnson-1978)	3.921

Nonparametric Distribution Free UCLs

95% CLT UCL	3.437	95% Jackknife UCL	3.988
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.022	95% Chebyshev(Mean, Sd) UCL	4.609
97.5% Chebyshev(Mean, Sd) UCL	5.423	99% Chebyshev(Mean, Sd) UCL	7.023

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

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.53	Mean	1.075
Maximum	1.82	Median	0.876
SD	0.668	Std. Error of Mean	0.385
Coefficient of Variation	0.621	Skewness	1.224
Mean of logged Data	-0.0561	SD of logged Data	0.62

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.201	95% Adjusted-CLT UCL (Chen-1995)	2
		95% Modified-t UCL (Johnson-1978)	2.246

Nonparametric Distribution Free UCLs

95% CLT UCL	1.709	95% Jackknife UCL	2.201
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.232	95% Chebyshev(Mean, Sd) UCL	2.756
97.5% Chebyshev(Mean, Sd) UCL	3.483	99% Chebyshev(Mean, Sd) UCL	4.911

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

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

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.59	Mean	2.54
Maximum	3.23	Median	2.8
SD	0.85	Std. Error of Mean	0.491
Coefficient of Variation	0.335	Skewness	-1.247
Mean of logged Data	0.889	SD of logged Data	0.375

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.974	95% Adjusted-CLT UCL (Chen-1995)	2.97
		95% Modified-t UCL (Johnson-1978)	3.915

Nonparametric Distribution Free UCLs

95% CLT UCL	3.348	95% Jackknife UCL	3.974
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.013	95% Chebyshev(Mean, Sd) UCL	4.68
97.5% Chebyshev(Mean, Sd) UCL	5.606	99% Chebyshev(Mean, Sd) UCL	7.425

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	12.6	Mean	13.63
Maximum	14.9	Median	13.4
SD	1.168	Std. Error of Mean	0.674
Coefficient of Variation	0.0856	Skewness	0.863
Mean of logged Data	2.61	SD of logged Data	0.0848

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.6	95% Adjusted-CLT UCL (Chen-1995)	15.1
		95% Modified-t UCL (Johnson-1978)	15.66

Nonparametric Distribution Free UCLs

95% CLT UCL	14.74	95% Jackknife UCL	15.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.66	95% Chebyshev(Mean, Sd) UCL	16.57

97.5% Chebyshev(Mean, Sd) UCL	17.84	99% Chebyshev(Mean, Sd) UCL	20.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	20.2	Mean	22.43
Maximum	23.7	Median	23.4
SD	1.94	Std. Error of Mean	1.12
Coefficient of Variation	0.0865	Skewness	-1.686
Mean of logged Data	3.108	SD of logged Data	0.0888

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.7	95% Adjusted-CLT UCL (Chen-1995)	23.11
		95% Modified-t UCL (Johnson-1978)	25.52

Nonparametric Distribution Free UCLs

95% CLT UCL	24.28	95% Jackknife UCL	25.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.79	95% Chebyshev(Mean, Sd) UCL	27.32
97.5% Chebyshev(Mean, Sd) UCL	29.43	99% Chebyshev(Mean, Sd) UCL	33.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	29.5	Mean	31.47
Maximum	33.2	Median	31.7
SD	1.861	Std. Error of Mean	1.074
Coefficient of Variation	0.0591	Skewness	-0.555
Mean of logged Data	3.448	SD of logged Data	0.0595

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.6	95% Adjusted-CLT UCL (Chen-1995)	32.87
		95% Modified-t UCL (Johnson-1978)	34.55

Nonparametric Distribution Free UCLs

95% CLT UCL	33.23	95% Jackknife UCL	34.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	34.69	95% Chebyshev(Mean, Sd) UCL	36.15
97.5% Chebyshev(Mean, Sd) UCL	38.18	99% Chebyshev(Mean, Sd) UCL	42.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	16.1	Mean	17.37
Maximum	18.5	Median	17.5
SD	1.206	Std. Error of Mean	0.696
Coefficient of Variation	0.0694	Skewness	-0.492
Mean of logged Data	2.853	SD of logged Data	0.0699

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

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.4	95% Adjusted-CLT UCL (Chen-1995)	18.3
		95% Modified-t UCL (Johnson-1978)	19.37

Nonparametric Distribution Free UCLs

95% CLT UCL	18.51	95% Jackknife UCL	19.4
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	19.45	95% Chebyshev(Mean, Sd) UCL	20.4
97.5% Chebyshev(Mean, Sd) UCL	21.71	99% Chebyshev(Mean, Sd) UCL	24.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	9.93	Mean	10.68
Maximum	11.2	Median	10.9
SD	0.664	Std. Error of Mean	0.383
Coefficient of Variation	0.0622	Skewness	-1.343
Mean of logged Data	2.367	SD of logged Data	0.0631

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.8	95% Adjusted-CLT UCL (Chen-1995)	10.99
		95% Modified-t UCL (Johnson-1978)	11.75

Nonparametric Distribution Free UCLs

95% CLT UCL	11.31	95% Jackknife UCL	11.8

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.83	95% Chebyshev(Mean, Sd) UCL	12.35
97.5% Chebyshev(Mean, Sd) UCL	13.07	99% Chebyshev(Mean, Sd) UCL	14.49

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	21.4	Mean	22.97
Maximum	23.8	Median	23.7
SD	1.358	Std. Error of Mean	0.784
Coefficient of Variation	0.0591	Skewness	-1.721
Mean of logged Data	3.133	SD of logged Data	0.0602

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.26	95% Adjusted-CLT UCL (Chen-1995)	23.42
		95% Modified-t UCL (Johnson-1978)	25.13

Nonparametric Distribution Free UCLs

95% CLT UCL	24.26	95% Jackknife UCL	25.26
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.32	95% Chebyshev(Mean, Sd) UCL	26.38
97.5% Chebyshev(Mean, Sd) UCL	27.86	99% Chebyshev(Mean, Sd) UCL	30.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.79	Mean	3.97
Maximum	4.17	Median	3.95
SD	0.191	Std. Error of Mean	0.11
Coefficient of Variation	0.0481	Skewness	0.467
Mean of logged Data	1.378	SD of logged Data	0.0479

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.292	95% Adjusted-CLT UCL (Chen-1995)	4.183
		95% Modified-t UCL (Johnson-1978)	4.297

Nonparametric Distribution Free UCLs

95% CLT UCL	4.151	95% Jackknife UCL	4.292
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.3	95% Chebyshev(Mean, Sd) UCL	4.45
97.5% Chebyshev(Mean, Sd) UCL	4.658	99% Chebyshev(Mean, Sd) UCL	5.066

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	25.4	Mean	27.8
Maximum	29.4	Median	28.6
SD	2.117	Std. Error of Mean	1.222
Coefficient of Variation	0.0761	Skewness	-1.458

Mean of logged Data	3.323	SD of logged Data	0.0777

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.37	95% Adjusted-CLT UCL (Chen-1995)	28.71
		95% Modified-t UCL (Johnson-1978)	31.2

Nonparametric Distribution Free UCLs

95% CLT UCL	29.81	95% Jackknife UCL	31.37
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	31.47	95% Chebyshev(Mean, Sd) UCL	33.13
97.5% Chebyshev(Mean, Sd) UCL	35.43	99% Chebyshev(Mean, Sd) UCL	39.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.325	Mean	2.092
Maximum	2.58	Median	2.37
SD	0.672	Std. Error of Mean	0.388
Coefficient of Variation	0.321	Skewness	-1.544
Mean of logged Data	0.697	SD of logged Data	0.363

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.225	95% Adjusted-CLT UCL (Chen-1995)	2.36

		95% Modified-t UCL (Johnson-1978)	3.167

Nonparametric Distribution Free UCLs

95% CLT UCL	2.73	95% Jackknife UCL	3.225
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.256	95% Chebyshev(Mean, Sd) UCL	3.783
97.5% Chebyshev(Mean, Sd) UCL	4.515	99% Chebyshev(Mean, Sd) UCL	5.953

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.3	Mean	16.4
Maximum	17.1	Median	16.8
SD	0.964	Std. Error of Mean	0.557
Coefficient of Variation	0.0588	Skewness	-1.545
Mean of logged Data	2.796	SD of logged Data	0.0598

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.03	95% Adjusted-CLT UCL (Chen-1995)	16.79
		95% Modified-t UCL (Johnson-1978)	17.94

Nonparametric Distribution Free UCLs

95% CLT UCL	17.32	95% Jackknife UCL	18.03
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	18.07	95% Chebyshev(Mean, Sd) UCL	18.83
97.5% Chebyshev(Mean, Sd) UCL	19.88	99% Chebyshev(Mean, Sd) UCL	21.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.7	Mean	3.443
Maximum	4.29	Median	3.34
SD	0.8	Std. Error of Mean	0.462
Coefficient of Variation	0.232	Skewness	0.572
Mean of logged Data	1.219	SD of logged Data	0.232

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.792	95% Adjusted-CLT UCL (Chen-1995)	4.366
		95% Modified-t UCL (Johnson-1978)	4.817

Nonparametric Distribution Free UCLs

95% CLT UCL	4.203	95% Jackknife UCL	4.792
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.829	95% Chebyshev(Mean, Sd) UCL	5.457
97.5% Chebyshev(Mean, Sd) UCL	6.328	99% Chebyshev(Mean, Sd) UCL	8.039

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	9.69	Mean	11.36
Maximum	12.3	Median	12.1
SD	1.453	Std. Error of Mean	0.839
Coefficient of Variation	0.128	Skewness	-1.695
Mean of logged Data	2.425	SD of logged Data	0.133

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.81	95% Adjusted-CLT UCL (Chen-1995)	11.87
		95% Modified-t UCL (Johnson-1978)	13.68

Nonparametric Distribution Free UCLs

95% CLT UCL	12.74	95% Jackknife UCL	13.81
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.88	95% Chebyshev(Mean, Sd) UCL	15.02
97.5% Chebyshev(Mean, Sd) UCL	16.6	99% Chebyshev(Mean, Sd) UCL	19.71

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

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

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

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	24.9	Mean	29.33
Maximum	33	Median	30.1
SD	4.104	Std. Error of Mean	2.369
Coefficient of Variation	0.14	Skewness	-0.811
Mean of logged Data	3.372	SD of logged Data	0.144

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.25	95% Adjusted-CLT UCL (Chen-1995)	32.04
		95% Modified-t UCL (Johnson-1978)	36.07

Nonparametric Distribution Free UCLs

95% CLT UCL	33.23	95% Jackknife UCL	36.25
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	36.44	95% Chebyshev(Mean, Sd) UCL	39.66
97.5% Chebyshev(Mean, Sd) UCL	44.13	99% Chebyshev(Mean, Sd) UCL	52.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	23.2	Mean	23.87
Maximum	24.8	Median	23.6
SD	0.833	Std. Error of Mean	0.481
Coefficient of Variation	0.0349	Skewness	1.293
Mean of logged Data	3.172	SD of logged Data	0.0346

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.27	95% Adjusted-CLT UCL (Chen-1995)	25.04
		95% Modified-t UCL (Johnson-1978)	25.33

Nonparametric Distribution Free UCLs

95% CLT UCL	24.66	95% Jackknife UCL	25.27
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.31	95% Chebyshev(Mean, Sd) UCL	25.96

97.5% Chebyshev(Mean, Sd) UCL	26.87	99% Chebyshev(Mean, Sd) UCL	28.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	36.2	Mean	40.2
Maximum	44.5	Median	39.9
SD	4.158	Std. Error of Mean	2.401
Coefficient of Variation	0.103	Skewness	0.323
Mean of logged Data	3.69	SD of logged Data	0.103

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.21	95% Adjusted-CLT UCL (Chen-1995)	44.63
		95% Modified-t UCL (Johnson-1978)	47.28

Nonparametric Distribution Free UCLs

95% CLT UCL	44.15	95% Jackknife UCL	47.21
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	47.4	95% Chebyshev(Mean, Sd) UCL	50.66
97.5% Chebyshev(Mean, Sd) UCL	55.19	99% Chebyshev(Mean, Sd) UCL	64.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	92.2	Mean	93.43
Maximum	94.1	Median	94
SD	1.069	Std. Error of Mean	0.617
Coefficient of Variation	0.0114	Skewness	-1.715
Mean of logged Data	4.537	SD of logged Data	0.0115

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	95.24	95% Adjusted-CLT UCL (Chen-1995)	93.8
		95% Modified-t UCL (Johnson-1978)	95.13

Nonparametric Distribution Free UCLs

95% CLT UCL	94.45	95% Jackknife UCL	95.24
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	95.29	95% Chebyshev(Mean, Sd) UCL	96.12
97.5% Chebyshev(Mean, Sd) UCL	97.29	99% Chebyshev(Mean, Sd) UCL	99.58

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

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

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:03:22 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404241 - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.933	Mean	1.474
Maximum	2.05	Median	1.465
SD	0.438	Std. Error of Mean	0.179
Coefficient of Variation	0.297	Skewness	0.0865
Mean of logged Data	0.349	SD of logged Data	0.309

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.834	95% Adjusted-CLT UCL (Chen-1995)	1.775
		95% Modified-t UCL (Johnson-1978)	1.835

Nonparametric Distribution Free UCLs

95% CLT UCL	1.768	95% Jackknife UCL	1.834
95% Standard Bootstrap UCL	1.732	95% Bootstrap-t UCL	1.886
95% Hall's Bootstrap UCL	1.795	95% Percentile Bootstrap UCL	1.749
95% BCA Bootstrap UCL	1.743		
90% Chebyshev(Mean, Sd) UCL	2.01	95% Chebyshev(Mean, Sd) UCL	2.253
97.5% Chebyshev(Mean, Sd) UCL	2.59	99% Chebyshev(Mean, Sd) UCL	3.253

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0

Minimum	0.48	Mean	0.507
Maximum	0.515	Median	0.513
SD	0.0137	Std. Error of Mean	0.00558
Coefficient of Variation	0.027	Skewness	-2.023
Mean of logged Data	-0.68	SD of logged Data	0.0275

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.518	95% Adjusted-CLT UCL (Chen-1995)	0.511
		95% Modified-t UCL (Johnson-1978)	0.517

Nonparametric Distribution Free UCLs

95% CLT UCL	0.516	95% Jackknife UCL	0.518
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.523	95% Chebyshev(Mean, Sd) UCL	0.531
97.5% Chebyshev(Mean, Sd) UCL	0.541	99% Chebyshev(Mean, Sd) UCL	0.562

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

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

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.79	Mean	3.813
Maximum	6.09	Median	3.73
SD	1.933	Std. Error of Mean	0.789
Coefficient of Variation	0.507	Skewness	0.0764
Mean of logged Data	1.218	SD of logged Data	0.549

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.403	95% Adjusted-CLT UCL (Chen-1995)	5.138
		95% Modified-t UCL (Johnson-1978)	5.408

Nonparametric Distribution Free UCLs

95% CLT UCL	5.111	95% Jackknife UCL	5.403
95% Standard Bootstrap UCL	4.996	95% Bootstrap-t UCL	5.484
95% Hall's Bootstrap UCL	4.531	95% Percentile Bootstrap UCL	5.032
95% BCA Bootstrap UCL	5.032		
90% Chebyshev(Mean, Sd) UCL	6.181	95% Chebyshev(Mean, Sd) UCL	7.253
97.5% Chebyshev(Mean, Sd) UCL	8.741	99% Chebyshev(Mean, Sd) UCL	11.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.39	Mean	5.628
Maximum	8.83	Median	5.62
SD	2.743	Std. Error of Mean	1.12
Coefficient of Variation	0.487	Skewness	-0.00705
Mean of logged Data	1.614	SD of logged Data	0.541

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.885	95% Adjusted-CLT UCL (Chen-1995)	7.467
		95% Modified-t UCL (Johnson-1978)	7.884

Nonparametric Distribution Free UCLs

95% CLT UCL	7.47	95% Jackknife UCL	7.885
95% Standard Bootstrap UCL	7.295	95% Bootstrap-t UCL	7.993
95% Hall's Bootstrap UCL	6.755	95% Percentile Bootstrap UCL	7.308
95% BCA Bootstrap UCL	7.302		
90% Chebyshev(Mean, Sd) UCL	8.988	95% Chebyshev(Mean, Sd) UCL	10.51
97.5% Chebyshev(Mean, Sd) UCL	12.62	99% Chebyshev(Mean, Sd) UCL	16.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.6	Mean	9.065
Maximum	14.8	Median	9.125
SD	5.103	Std. Error of Mean	2.083
Coefficient of Variation	0.563	Skewness	0.0229
Mean of logged Data	2.049	SD of logged Data	0.631

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.26	95% Adjusted-CLT UCL (Chen-1995)	12.51
		95% Modified-t UCL (Johnson-1978)	13.27

Nonparametric Distribution Free UCLs

95% CLT UCL	12.49	95% Jackknife UCL	13.26
95% Standard Bootstrap UCL	12.27	95% Bootstrap-t UCL	13.58
95% Hall's Bootstrap UCL	10.89	95% Percentile Bootstrap UCL	12.34
95% BCA Bootstrap UCL	12.26		
90% Chebyshev(Mean, Sd) UCL	15.32	95% Chebyshev(Mean, Sd) UCL	18.15
97.5% Chebyshev(Mean, Sd) UCL	22.08	99% Chebyshev(Mean, Sd) UCL	29.8

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	3.09	Mean	5.494
Maximum	8.7	Median	5.225
SD	2.591	Std. Error of Mean	1.058
Coefficient of Variation	0.472	Skewness	0.157
Mean of logged Data	1.604	SD of logged Data	0.496

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.625	95% Adjusted-CLT UCL (Chen-1995)	7.306
		95% Modified-t UCL (Johnson-1978)	7.637

Nonparametric Distribution Free UCLs

95% CLT UCL	7.234	95% Jackknife UCL	7.625
95% Standard Bootstrap UCL	7.097	95% Bootstrap-t UCL	7.791
95% Hall's Bootstrap UCL	6.422	95% Percentile Bootstrap UCL	7.098
95% BCA Bootstrap UCL	7.135		
90% Chebyshev(Mean, Sd) UCL	8.667	95% Chebyshev(Mean, Sd) UCL	10.1
97.5% Chebyshev(Mean, Sd) UCL	12.1	99% Chebyshev(Mean, Sd) UCL	16.02

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

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.93	Mean	3.653
Maximum	5.72	Median	3.433
SD	1.803	Std. Error of Mean	0.736
Coefficient of Variation	0.494	Skewness	0.114
Mean of logged Data	1.184	SD of logged Data	0.525

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.137	95% Adjusted-CLT UCL (Chen-1995)	4.901
		95% Modified-t UCL (Johnson-1978)	5.142

Nonparametric Distribution Free UCLs

95% CLT UCL	4.864	95% Jackknife UCL	5.137
95% Standard Bootstrap UCL	4.735	95% Bootstrap-t UCL	5.105
95% Hall's Bootstrap UCL	4.291	95% Percentile Bootstrap UCL	4.745
95% BCA Bootstrap UCL	4.734		
90% Chebyshev(Mean, Sd) UCL	5.862	95% Chebyshev(Mean, Sd) UCL	6.862
97.5% Chebyshev(Mean, Sd) UCL	8.251	99% Chebyshev(Mean, Sd) UCL	10.98

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.74	Mean	6.492
Maximum	10.4	Median	6.435
SD	3.673	Std. Error of Mean	1.499
Coefficient of Variation	0.566	Skewness	0.0158
Mean of logged Data	1.715	SD of logged Data	0.629

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.513	95% Adjusted-CLT UCL (Chen-1995)	8.968
		95% Modified-t UCL (Johnson-1978)	9.515

Nonparametric Distribution Free UCLs

95% CLT UCL	8.958	95% Jackknife UCL	9.513
95% Standard Bootstrap UCL	8.779	95% Bootstrap-t UCL	9.664
95% Hall's Bootstrap UCL	7.749	95% Percentile Bootstrap UCL	8.78
95% BCA Bootstrap UCL	8.79		
90% Chebyshev(Mean, Sd) UCL	10.99	95% Chebyshev(Mean, Sd) UCL	13.03
97.5% Chebyshev(Mean, Sd) UCL	15.86	99% Chebyshev(Mean, Sd) UCL	21.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.33	Mean	7.737
Maximum	12.8	Median	7.705
SD	4.495	Std. Error of Mean	1.835
Coefficient of Variation	0.581	Skewness	0.0461
Mean of logged Data	1.881	SD of logged Data	0.648

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.43	95% Adjusted-CLT UCL (Chen-1995)	10.79
		95% Modified-t UCL (Johnson-1978)	11.44

Nonparametric Distribution Free UCLs

95% CLT UCL	10.76	95% Jackknife UCL	11.43
95% Standard Bootstrap UCL	10.49	95% Bootstrap-t UCL	11.72
95% Hall's Bootstrap UCL	9.293	95% Percentile Bootstrap UCL	10.52
95% BCA Bootstrap UCL	10.6		
90% Chebyshev(Mean, Sd) UCL	13.24	95% Chebyshev(Mean, Sd) UCL	15.74
97.5% Chebyshev(Mean, Sd) UCL	19.2	99% Chebyshev(Mean, Sd) UCL	26

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

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.17	Mean	5.738
Maximum	9.35	Median	5.59
SD	3.184	Std. Error of Mean	1.3
Coefficient of Variation	0.555	Skewness	0.0317

Mean of logged Data	1.595	SD of logged Data	0.626

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.358	95% Adjusted-CLT UCL (Chen-1995)	7.895
		95% Modified-t UCL (Johnson-1978)	8.361

Nonparametric Distribution Free UCLs

95% CLT UCL	7.877	95% Jackknife UCL	8.358
95% Standard Bootstrap UCL	7.652	95% Bootstrap-t UCL	8.246
95% Hall's Bootstrap UCL	6.96	95% Percentile Bootstrap UCL	7.688
95% BCA Bootstrap UCL	7.688		
90% Chebyshev(Mean, Sd) UCL	9.638	95% Chebyshev(Mean, Sd) UCL	11.4
97.5% Chebyshev(Mean, Sd) UCL	13.86	99% Chebyshev(Mean, Sd) UCL	18.67

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.46	Mean	2.32
Maximum	3.59	Median	2.255
SD	0.757	Std. Error of Mean	0.309
Coefficient of Variation	0.326	Skewness	0.854
Mean of logged Data	0.799	SD of logged Data	0.319

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.942	95% Adjusted-CLT UCL (Chen-1995)	2.943
		95% Modified-t UCL (Johnson-1978)	2.96

Nonparametric Distribution Free UCLs

95% CLT UCL	2.828	95% Jackknife UCL	2.942
95% Standard Bootstrap UCL	2.794	95% Bootstrap-t UCL	3.11
95% Hall's Bootstrap UCL	3.127	95% Percentile Bootstrap UCL	2.813
95% BCA Bootstrap UCL	2.885		
90% Chebyshev(Mean, Sd) UCL	3.247	95% Chebyshev(Mean, Sd) UCL	3.666
97.5% Chebyshev(Mean, Sd) UCL	4.249	99% Chebyshev(Mean, Sd) UCL	5.393

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.145	Mean	4.272
Maximum	5.87	Median	4.09
SD	1.218	Std. Error of Mean	0.497
Coefficient of Variation	0.285	Skewness	0.258
Mean of logged Data	1.418	SD of logged Data	0.286

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.273	95% Adjusted-CLT UCL (Chen-1995)	5.145
		95% Modified-t UCL (Johnson-1978)	5.282

Nonparametric Distribution Free UCLs

95% CLT UCL	5.089	95% Jackknife UCL	5.273
95% Standard Bootstrap UCL	4.993	95% Bootstrap-t UCL	5.345
95% Hall's Bootstrap UCL	4.744	95% Percentile Bootstrap UCL	5.015
95% BCA Bootstrap UCL	5.053		
90% Chebyshev(Mean, Sd) UCL	5.763	95% Chebyshev(Mean, Sd) UCL	6.439
97.5% Chebyshev(Mean, Sd) UCL	7.376	99% Chebyshev(Mean, Sd) UCL	9.218

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.25	Mean	7.37
Maximum	11.9	Median	7.38
SD	4.126	Std. Error of Mean	1.684
Coefficient of Variation	0.56	Skewness	0.0235
Mean of logged Data	1.845	SD of logged Data	0.622

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.76	95% Adjusted-CLT UCL (Chen-1995)	10.16
		95% Modified-t UCL (Johnson-1978)	10.77

Nonparametric Distribution Free UCLs

95% CLT UCL	10.14	95% Jackknife UCL	10.76
95% Standard Bootstrap UCL	9.867	95% Bootstrap-t UCL	10.94
95% Hall's Bootstrap UCL	8.801	95% Percentile Bootstrap UCL	9.918
95% BCA Bootstrap UCL	9.918		
90% Chebyshev(Mean, Sd) UCL	12.42	95% Chebyshev(Mean, Sd) UCL	14.71
97.5% Chebyshev(Mean, Sd) UCL	17.89	99% Chebyshev(Mean, Sd) UCL	24.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.1	Mean	9.813
Maximum	10.4	Median	9.895
SD	0.46	Std. Error of Mean	0.188
Coefficient of Variation	0.0469	Skewness	-0.522
Mean of logged Data	2.283	SD of logged Data	0.0473

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.19	95% Adjusted-CLT UCL (Chen-1995)	10.08
		95% Modified-t UCL (Johnson-1978)	10.18

Nonparametric Distribution Free UCLs

95% CLT UCL	10.12	95% Jackknife UCL	10.19
95% Standard Bootstrap UCL	10.09	95% Bootstrap-t UCL	10.12
95% Hall's Bootstrap UCL	10.08	95% Percentile Bootstrap UCL	10.08
95% BCA Bootstrap UCL	10.08		
90% Chebyshev(Mean, Sd) UCL	10.38	95% Chebyshev(Mean, Sd) UCL	10.63
97.5% Chebyshev(Mean, Sd) UCL	10.99	99% Chebyshev(Mean, Sd) UCL	11.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.98	Mean	10.92
Maximum	13.8	Median	10.61
SD	1.997	Std. Error of Mean	0.815
Coefficient of Variation	0.183	Skewness	0.438
Mean of logged Data	2.377	SD of logged Data	0.181

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.56	95% Adjusted-CLT UCL (Chen-1995)	12.41
		95% Modified-t UCL (Johnson-1978)	12.58

Nonparametric Distribution Free UCLs

95% CLT UCL	12.26	95% Jackknife UCL	12.56
95% Standard Bootstrap UCL	12.13	95% Bootstrap-t UCL	13.21

95% Hall's Bootstrap UCL	11.85	95% Percentile Bootstrap UCL	12.16
95% BCA Bootstrap UCL	12.38		
90% Chebyshev(Mean, Sd) UCL	13.36	95% Chebyshev(Mean, Sd) UCL	14.47
97.5% Chebyshev(Mean, Sd) UCL	16.01	99% Chebyshev(Mean, Sd) UCL	19.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	35.5	Mean	52.3
Maximum	72	Median	50.45
SD	17.24	Std. Error of Mean	7.039
Coefficient of Variation	0.33	Skewness	0.0915
Mean of logged Data	3.91	SD of logged Data	0.338

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	66.48	95% Adjusted-CLT UCL (Chen-1995)	64.16
		95% Modified-t UCL (Johnson-1978)	66.53

Nonparametric Distribution Free UCLs

95% CLT UCL	63.88	95% Jackknife UCL	66.48
95% Standard Bootstrap UCL	62.76	95% Bootstrap-t UCL	66.57
95% Hall's Bootstrap UCL	58.32	95% Percentile Bootstrap UCL	63.17
95% BCA Bootstrap UCL	62.82		
90% Chebyshev(Mean, Sd) UCL	73.42	95% Chebyshev(Mean, Sd) UCL	82.98
97.5% Chebyshev(Mean, Sd) UCL	96.26	99% Chebyshev(Mean, Sd) UCL	122.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:13:08 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404242) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.21	Mean	4.137
Maximum	8.25	Median	3.3
SD	3.096	Std. Error of Mean	1.264
Coefficient of Variation	0.749	Skewness	0.436
Mean of logged Data	1.141	SD of logged Data	0.845

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.684	95% Adjusted-CLT UCL (Chen-1995)	6.456
		95% Modified-t UCL (Johnson-1978)	6.721

Nonparametric Distribution Free UCLs

95% CLT UCL	6.216	95% Jackknife UCL	6.684
95% Standard Bootstrap UCL	6.033	95% Bootstrap-t UCL	8.735
95% Hall's Bootstrap UCL	5.926	95% Percentile Bootstrap UCL	5.995
95% BCA Bootstrap UCL	6.222		
90% Chebyshev(Mean, Sd) UCL	7.929	95% Chebyshev(Mean, Sd) UCL	9.647
97.5% Chebyshev(Mean, Sd) UCL	12.03	99% Chebyshev(Mean, Sd) UCL	16.71

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.413	Mean	0.828
Maximum	2.44	Median	0.518
SD	0.792	Std. Error of Mean	0.323
Coefficient of Variation	0.956	Skewness	2.425
Mean of logged Data	-0.425	SD of logged Data	0.654

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.479	95% Adjusted-CLT UCL (Chen-1995)	1.701
		95% Modified-t UCL (Johnson-1978)	1.532

Nonparametric Distribution Free UCLs

95% CLT UCL	1.359	95% Jackknife UCL	1.479
95% Standard Bootstrap UCL	1.309	95% Bootstrap-t UCL	8.873
95% Hall's Bootstrap UCL	8.997	95% Percentile Bootstrap UCL	1.469
95% BCA Bootstrap UCL	1.488		
90% Chebyshev(Mean, Sd) UCL	1.797	95% Chebyshev(Mean, Sd) UCL	2.236
97.5% Chebyshev(Mean, Sd) UCL	2.846	99% Chebyshev(Mean, Sd) UCL	4.043

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.236

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

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.045	Mean	2.654
Maximum	4.28	Median	2.313
SD	0.86	Std. Error of Mean	0.351
Coefficient of Variation	0.324	Skewness	1.768
Mean of logged Data	0.939	SD of logged Data	0.285

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	3.362	95% Adjusted-CLT UCL (Chen-1995)	3.502
		95% Modified-t UCL (Johnson-1978)	3.404

Nonparametric Distribution Free UCLs

95% CLT UCL	3.232	95% Jackknife UCL	3.362
95% Standard Bootstrap UCL	3.174	95% Bootstrap-t UCL	4.394
95% Hall's Bootstrap UCL	5.589	95% Percentile Bootstrap UCL	3.223
95% BCA Bootstrap UCL	3.386		
90% Chebyshev(Mean, Sd) UCL	3.707	95% Chebyshev(Mean, Sd) UCL	4.185
97.5% Chebyshev(Mean, Sd) UCL	4.847	99% Chebyshev(Mean, Sd) UCL	6.147

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.045	Mean	5.636
Maximum	11.3	Median	4.878
SD	4.071	Std. Error of Mean	1.662
Coefficient of Variation	0.722	Skewness	0.365
Mean of logged Data	1.469	SD of logged Data	0.815

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.985	95% Adjusted-CLT UCL (Chen-1995)	8.634
		95% Modified-t UCL (Johnson-1978)	9.026

Nonparametric Distribution Free UCLs

95% CLT UCL	8.369	95% Jackknife UCL	8.985
95% Standard Bootstrap UCL	8.143	95% Bootstrap-t UCL	9.4
95% Hall's Bootstrap UCL	7.333	95% Percentile Bootstrap UCL	8.103
95% BCA Bootstrap UCL	8.429		
90% Chebyshev(Mean, Sd) UCL	10.62	95% Chebyshev(Mean, Sd) UCL	12.88
97.5% Chebyshev(Mean, Sd) UCL	16.01	99% Chebyshev(Mean, Sd) UCL	22.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.71	Mean	6.503
Maximum	15.1	Median	5.173
SD	5.575	Std. Error of Mean	2.276
Coefficient of Variation	0.857	Skewness	0.662
Mean of logged Data	1.493	SD of logged Data	0.993

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.09	95% Adjusted-CLT UCL (Chen-1995)	10.9
		95% Modified-t UCL (Johnson-1978)	11.19

Nonparametric Distribution Free UCLs

95% CLT UCL	10.25	95% Jackknife UCL	11.09
95% Standard Bootstrap UCL	9.868	95% Bootstrap-t UCL	11.96
95% Hall's Bootstrap UCL	9.387	95% Percentile Bootstrap UCL	10.08
95% BCA Bootstrap UCL	10.61		
90% Chebyshev(Mean, Sd) UCL	13.33	95% Chebyshev(Mean, Sd) UCL	16.42
97.5% Chebyshev(Mean, Sd) UCL	20.72	99% Chebyshev(Mean, Sd) UCL	29.15

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.72	Mean	12.36
Maximum	25.4	Median	10.64
SD	10.62	Std. Error of Mean	4.336
Coefficient of Variation	0.86	Skewness	0.179
Mean of logged Data	2.066	SD of logged Data	1.11

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.09	95% Adjusted-CLT UCL (Chen-1995)	19.83
		95% Modified-t UCL (Johnson-1978)	21.15

Nonparametric Distribution Free UCLs

95% CLT UCL	19.49	95% Jackknife UCL	21.09
95% Standard Bootstrap UCL	18.73	95% Bootstrap-t UCL	21.05
95% Hall's Bootstrap UCL	16.1	95% Percentile Bootstrap UCL	19.22
95% BCA Bootstrap UCL	19.27		
90% Chebyshev(Mean, Sd) UCL	25.37	95% Chebyshev(Mean, Sd) UCL	31.26
97.5% Chebyshev(Mean, Sd) UCL	39.44	99% Chebyshev(Mean, Sd) UCL	55.5

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.15	Mean	6.252
Maximum	11.7	Median	5.108
SD	3.659	Std. Error of Mean	1.494
Coefficient of Variation	0.585	Skewness	0.637
Mean of logged Data	1.686	SD of logged Data	0.594

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.261	95% Adjusted-CLT UCL (Chen-1995)	9.124
		95% Modified-t UCL (Johnson-1978)	9.326

Nonparametric Distribution Free UCLs

95% CLT UCL	8.708	95% Jackknife UCL	9.261

95% Standard Bootstrap UCL	8.514	95% Bootstrap-t UCL	9.658
95% Hall's Bootstrap UCL	8.757	95% Percentile Bootstrap UCL	8.459
95% BCA Bootstrap UCL	8.878		
90% Chebyshev(Mean, Sd) UCL	10.73	95% Chebyshev(Mean, Sd) UCL	12.76
97.5% Chebyshev(Mean, Sd) UCL	15.58	99% Chebyshev(Mean, Sd) UCL	21.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.045	Mean	4.593
Maximum	9.03	Median	4.013
SD	2.947	Std. Error of Mean	1.203
Coefficient of Variation	0.642	Skewness	0.562
Mean of logged Data	1.339	SD of logged Data	0.677

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.017	95% Adjusted-CLT UCL (Chen-1995)	6.866
		95% Modified-t UCL (Johnson-1978)	7.063

Nonparametric Distribution Free UCLs

95% CLT UCL	6.571	95% Jackknife UCL	7.017
95% Standard Bootstrap UCL	6.37	95% Bootstrap-t UCL	7.624
95% Hall's Bootstrap UCL	6.043	95% Percentile Bootstrap UCL	6.458
95% BCA Bootstrap UCL	6.471		
90% Chebyshev(Mean, Sd) UCL	8.202	95% Chebyshev(Mean, Sd) UCL	9.837
97.5% Chebyshev(Mean, Sd) UCL	12.11	99% Chebyshev(Mean, Sd) UCL	16.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.01	Mean	9.993
Maximum	21.1	Median	8.82
SD	8.724	Std. Error of Mean	3.562
Coefficient of Variation	0.873	Skewness	0.198
Mean of logged Data	1.832	SD of logged Data	1.141

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.17	95% Adjusted-CLT UCL (Chen-1995)	16.16
		95% Modified-t UCL (Johnson-1978)	17.22

Nonparametric Distribution Free UCLs

95% CLT UCL	15.85	95% Jackknife UCL	17.17
95% Standard Bootstrap UCL	15.43	95% Bootstrap-t UCL	17.76
95% Hall's Bootstrap UCL	13.19	95% Percentile Bootstrap UCL	15.6
95% BCA Bootstrap UCL	15.6		
90% Chebyshev(Mean, Sd) UCL	20.68	95% Chebyshev(Mean, Sd) UCL	25.52
97.5% Chebyshev(Mean, Sd) UCL	32.24	99% Chebyshev(Mean, Sd) UCL	45.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.59	Mean	3.095
Maximum	3.265	Median	3.178
SD	0.256	Std. Error of Mean	0.105
Coefficient of Variation	0.0827	Skewness	-2.098
Mean of logged Data	1.127	SD of logged Data	0.0882

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

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.306	95% Adjusted-CLT UCL (Chen-1995)	3.171
		95% Modified-t UCL (Johnson-1978)	3.291

Nonparametric Distribution Free UCLs

95% CLT UCL	3.267	95% Jackknife UCL	3.306
95% Standard Bootstrap UCL	3.25	95% Bootstrap-t UCL	3.231
95% Hall's Bootstrap UCL	3.193	95% Percentile Bootstrap UCL	3.226
95% BCA Bootstrap UCL	3.207		
90% Chebyshev(Mean, Sd) UCL	3.409	95% Chebyshev(Mean, Sd) UCL	3.551
97.5% Chebyshev(Mean, Sd) UCL	3.748	99% Chebyshev(Mean, Sd) UCL	4.135

Suggested UCL to Use

95% Student's-t UCL	3.306	or 95% Modified-t UCL	3.291

Recommended UCL exceeds the maximum observation

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.22	Mean	11.69
Maximum	25.8	Median	9.81
SD	10.43	Std. Error of Mean	4.257
Coefficient of Variation	0.892	Skewness	0.317
Mean of logged Data	1.975	SD of logged Data	1.156

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.27	95% Adjusted-CLT UCL (Chen-1995)	19.28
		95% Modified-t UCL (Johnson-1978)	20.36

Nonparametric Distribution Free UCLs

95% CLT UCL	18.69	95% Jackknife UCL	20.27

95% Standard Bootstrap UCL	18.06	95% Bootstrap-t UCL	23.74
95% Hall's Bootstrap UCL	15.85	95% Percentile Bootstrap UCL	17.99
95% BCA Bootstrap UCL	18.04		
90% Chebyshev(Mean, Sd) UCL	24.46	95% Chebyshev(Mean, Sd) UCL	30.24
97.5% Chebyshev(Mean, Sd) UCL	38.27	99% Chebyshev(Mean, Sd) UCL	54.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.16	Mean	1.258
Maximum	1.305	Median	1.27
SD	0.0545	Std. Error of Mean	0.0222
Coefficient of Variation	0.0433	Skewness	-1.38
Mean of logged Data	0.229	SD of logged Data	0.0442

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.303	95% Adjusted-CLT UCL (Chen-1995)	1.282
		95% Modified-t UCL (Johnson-1978)	1.301

Nonparametric Distribution Free UCLs

95% CLT UCL	1.295	95% Jackknife UCL	1.303
95% Standard Bootstrap UCL	1.292	95% Bootstrap-t UCL	1.29
95% Hall's Bootstrap UCL	1.284	95% Percentile Bootstrap UCL	1.289
95% BCA Bootstrap UCL	1.283		
90% Chebyshev(Mean, Sd) UCL	1.325	95% Chebyshev(Mean, Sd) UCL	1.355
97.5% Chebyshev(Mean, Sd) UCL	1.397	99% Chebyshev(Mean, Sd) UCL	1.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.15	Mean	7.23
Maximum	13.8	Median	6.063
SD	4.677	Std. Error of Mean	1.909
Coefficient of Variation	0.647	Skewness	0.441
Mean of logged Data	1.785	SD of logged Data	0.693

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.08	95% Adjusted-CLT UCL (Chen-1995)	10.74
		95% Modified-t UCL (Johnson-1978)	11.13

Nonparametric Distribution Free UCLs

95% CLT UCL	10.37	95% Jackknife UCL	11.08
95% Standard Bootstrap UCL	10.14	95% Bootstrap-t UCL	11.18
95% Hall's Bootstrap UCL	10.08	95% Percentile Bootstrap UCL	10.27
95% BCA Bootstrap UCL	10.29		
90% Chebyshev(Mean, Sd) UCL	12.96	95% Chebyshev(Mean, Sd) UCL	15.55
97.5% Chebyshev(Mean, Sd) UCL	19.15	99% Chebyshev(Mean, Sd) UCL	26.23

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.42	Mean	9.135
Maximum	17.8	Median	8.225
SD	6.815	Std. Error of Mean	2.782
Coefficient of Variation	0.746	Skewness	0.212
Mean of logged Data	1.913	SD of logged Data	0.89

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

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.74	95% Adjusted-CLT UCL (Chen-1995)	13.97
		95% Modified-t UCL (Johnson-1978)	14.78

Nonparametric Distribution Free UCLs

95% CLT UCL	13.71	95% Jackknife UCL	14.74
95% Standard Bootstrap UCL	13.25	95% Bootstrap-t UCL	14.87
95% Hall's Bootstrap UCL	11.73	95% Percentile Bootstrap UCL	13.21
95% BCA Bootstrap UCL	13.21		
90% Chebyshev(Mean, Sd) UCL	17.48	95% Chebyshev(Mean, Sd) UCL	21.26
97.5% Chebyshev(Mean, Sd) UCL	26.51	99% Chebyshev(Mean, Sd) UCL	36.82

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.32	Mean	9.946
Maximum	22.2	Median	8.303
SD	8.266	Std. Error of Mean	3.375
Coefficient of Variation	0.831	Skewness	0.521
Mean of logged Data	1.931	SD of logged Data	0.984

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.75	95% Adjusted-CLT UCL (Chen-1995)	16.26
		95% Modified-t UCL (Johnson-1978)	16.87

Nonparametric Distribution Free UCLs

95% CLT UCL	15.5	95% Jackknife UCL	16.75
95% Standard Bootstrap UCL	15.07	95% Bootstrap-t UCL	19.97
95% Hall's Bootstrap UCL	13.9	95% Percentile Bootstrap UCL	15.15

95% BCA Bootstrap UCL	15.63		
90% Chebyshev(Mean, Sd) UCL	20.07	95% Chebyshev(Mean, Sd) UCL	24.65
97.5% Chebyshev(Mean, Sd) UCL	31.02	99% Chebyshev(Mean, Sd) UCL	43.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.46	Mean	10.9
Maximum	23.8	Median	9.175
SD	9.303	Std. Error of Mean	3.798
Coefficient of Variation	0.854	Skewness	0.367
Mean of logged Data	1.975	SD of logged Data	1.056

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.55	95% Adjusted-CLT UCL (Chen-1995)	17.75
		95% Modified-t UCL (Johnson-1978)	18.64

Nonparametric Distribution Free UCLs

95% CLT UCL	17.14	95% Jackknife UCL	18.55
95% Standard Bootstrap UCL	16.55	95% Bootstrap-t UCL	21.87
95% Hall's Bootstrap UCL	14.77	95% Percentile Bootstrap UCL	16.88
95% BCA Bootstrap UCL	16.93		
90% Chebyshev(Mean, Sd) UCL	22.29	95% Chebyshev(Mean, Sd) UCL	27.45
97.5% Chebyshev(Mean, Sd) UCL	34.61	99% Chebyshev(Mean, Sd) UCL	48.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	16.98
Maximum	32.9	Median	14.65
SD	8.476	Std. Error of Mean	3.46
Coefficient of Variation	0.499	Skewness	1.681
Mean of logged Data	2.746	SD of logged Data	0.437

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.96	95% Adjusted-CLT UCL (Chen-1995)	25.21
		95% Modified-t UCL (Johnson-1978)	24.35

Nonparametric Distribution Free UCLs

95% CLT UCL	22.67	95% Jackknife UCL	23.96
95% Standard Bootstrap UCL	22.14	95% Bootstrap-t UCL	33.06
95% Hall's Bootstrap UCL	50.07	95% Percentile Bootstrap UCL	23.03
95% BCA Bootstrap UCL	24.52		
90% Chebyshev(Mean, Sd) UCL	27.36	95% Chebyshev(Mean, Sd) UCL	32.07
97.5% Chebyshev(Mean, Sd) UCL	38.59	99% Chebyshev(Mean, Sd) UCL	51.41

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.09	Mean	25.21
Maximum	58.3	Median	16.19
SD	20.72	Std. Error of Mean	8.46
Coefficient of Variation	0.822	Skewness	0.98
Mean of logged Data	2.938	SD of logged Data	0.831

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.26	95% Adjusted-CLT UCL (Chen-1995)	42.74
		95% Modified-t UCL (Johnson-1978)	42.82

Nonparametric Distribution Free UCLs

95% CLT UCL	39.12	95% Jackknife UCL	42.26
95% Standard Bootstrap UCL	37.84	95% Bootstrap-t UCL	59.15
95% Hall's Bootstrap UCL	59.97	95% Percentile Bootstrap UCL	38.85
95% BCA Bootstrap UCL	41.1		
90% Chebyshev(Mean, Sd) UCL	50.59	95% Chebyshev(Mean, Sd) UCL	62.09
97.5% Chebyshev(Mean, Sd) UCL	78.04	99% Chebyshev(Mean, Sd) UCL	109.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	36	Mean	54.2
Maximum	72.6	Median	54.1
SD	18	Std. Error of Mean	7.347
Coefficient of Variation	0.332	Skewness	0.00349
Mean of logged Data	3.944	SD of logged Data	0.343

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	69.01	95% Adjusted-CLT UCL (Chen-1995)	66.3
		95% Modified-t UCL (Johnson-1978)	69.01

Nonparametric Distribution Free UCLs

95% CLT UCL	66.29	95% Jackknife UCL	69.01
95% Standard Bootstrap UCL	65.45	95% Bootstrap-t UCL	69.48
95% Hall's Bootstrap UCL	60.26	95% Percentile Bootstrap UCL	65.42
95% BCA Bootstrap UCL	65.37		
90% Chebyshev(Mean, Sd) UCL	76.24	95% Chebyshev(Mean, Sd) UCL	86.23
97.5% Chebyshev(Mean, Sd) UCL	100.1	99% Chebyshev(Mean, Sd) UCL	127.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:53:36 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404277A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.8	Mean	3.017
Maximum	4.8	Median	2.45
SD	1.578	Std. Error of Mean	0.911
Coefficient of Variation	0.523	Skewness	1.407
Mean of logged Data	1.017	SD of logged Data	0.502

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.677	95% Adjusted-CLT UCL (Chen-1995)	5.307
		95% Modified-t UCL (Johnson-1978)	5.801

Nonparametric Distribution Free UCLs

95% CLT UCL	4.515	95% Jackknife UCL	5.677
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.75	95% Chebyshev(Mean, Sd) UCL	6.988
97.5% Chebyshev(Mean, Sd) UCL	8.707	99% Chebyshev(Mean, Sd) UCL	12.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	1.24	Mean	1.457
Maximum	1.79	Median	1.34
SD	0.293	Std. Error of Mean	0.169
Coefficient of Variation	0.201	Skewness	1.508
Mean of logged Data	0.363	SD of logged Data	0.193

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.951	95% Adjusted-CLT UCL (Chen-1995)	1.892
		95% Modified-t UCL (Johnson-1978)	1.975

Nonparametric Distribution Free UCLs

95% CLT UCL	1.735	95% Jackknife UCL	1.951
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.964	95% Chebyshev(Mean, Sd) UCL	2.194
97.5% Chebyshev(Mean, Sd) UCL	2.513	99% Chebyshev(Mean, Sd) UCL	3.14

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

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

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.57	Mean	6.91
Maximum	10	Median	6.16
SD	2.792	Std. Error of Mean	1.612
Coefficient of Variation	0.404	Skewness	1.122
Mean of logged Data	1.88	SD of logged Data	0.395

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

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

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	11.62	95% Adjusted-CLT UCL (Chen-1995)	10.68
		95% Modified-t UCL (Johnson-1978)	11.79

Nonparametric Distribution Free UCLs

95% CLT UCL	9.561	95% Jackknife UCL	11.62
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.75	95% Chebyshev(Mean, Sd) UCL	13.94
97.5% Chebyshev(Mean, Sd) UCL	16.98	99% Chebyshev(Mean, Sd) UCL	22.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	30.6	Mean	49.37
Maximum	59.4	Median	58.1
SD	16.27	Std. Error of Mean	9.391
Coefficient of Variation	0.329	Skewness	-1.72
Mean of logged Data	3.856	SD of logged Data	0.377

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.79	95% Adjusted-CLT UCL (Chen-1995)	54.85
		95% Modified-t UCL (Johnson-1978)	75.23

Nonparametric Distribution Free UCLs

95% CLT UCL	64.81	95% Jackknife UCL	76.79
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	77.54	95% Chebyshev(Mean, Sd) UCL	90.3
97.5% Chebyshev(Mean, Sd) UCL	108	99% Chebyshev(Mean, Sd) UCL	142.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	41.9	Mean	64.6
Maximum	76.9	Median	75
SD	19.68	Std. Error of Mean	11.36
Coefficient of Variation	0.305	Skewness	-1.714
Mean of logged Data	4.132	SD of logged Data	0.344

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	97.78	95% Adjusted-CLT UCL (Chen-1995)	71.28
		95% Modified-t UCL (Johnson-1978)	95.91

Nonparametric Distribution Free UCLs

95% CLT UCL	83.29	95% Jackknife UCL	97.78
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	98.69	95% Chebyshev(Mean, Sd) UCL	114.1
97.5% Chebyshev(Mean, Sd) UCL	135.6	99% Chebyshev(Mean, Sd) UCL	177.7

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

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	58.9	Mean	86
Maximum	101	Median	98.1
SD	23.51	Std. Error of Mean	13.58
Coefficient of Variation	0.273	Skewness	-1.702
Mean of logged Data	4.426	SD of logged Data	0.303

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	125.6	95% Adjusted-CLT UCL (Chen-1995)	94.07
		95% Modified-t UCL (Johnson-1978)	123.4

Nonparametric Distribution Free UCLs

95% CLT UCL	108.3	95% Jackknife UCL	125.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	126.7	95% Chebyshev(Mean, Sd) UCL	145.2
97.5% Chebyshev(Mean, Sd) UCL	170.8	99% Chebyshev(Mean, Sd) UCL	221.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	33.7	Mean	54.9
Maximum	74.9	Median	56.1
SD	20.63	Std. Error of Mean	11.91
Coefficient of Variation	0.376	Skewness	-0.261
Mean of logged Data	3.954	SD of logged Data	0.404

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	89.67	95% Adjusted-CLT UCL (Chen-1995)	72.57
		95% Modified-t UCL (Johnson-1978)	89.37

Nonparametric Distribution Free UCLs

95% CLT UCL	74.49	95% Jackknife UCL	89.67
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	90.63	95% Chebyshev(Mean, Sd) UCL	106.8
97.5% Chebyshev(Mean, Sd) UCL	129.3	99% Chebyshev(Mean, Sd) UCL	173.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	22.8	Mean	35.6
Maximum	43.1	Median	40.9
SD	11.14	Std. Error of Mean	6.431
Coefficient of Variation	0.313	Skewness	-1.656
Mean of logged Data	3.534	SD of logged Data	0.353

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	54.38	95% Adjusted-CLT UCL (Chen-1995)	39.61
		95% Modified-t UCL (Johnson-1978)	53.35

Nonparametric Distribution Free UCLs

95% CLT UCL	46.18	95% Jackknife UCL	54.38
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		

90% Chebyshev(Mean, Sd) UCL	54.89	95% Chebyshev(Mean, Sd) UCL	63.63
97.5% Chebyshev(Mean, Sd) UCL	75.76	99% Chebyshev(Mean, Sd) UCL	99.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	45.2	Mean	65.3
Maximum	82.3	Median	68.4
SD	18.74	Std. Error of Mean	10.82
Coefficient of Variation	0.287	Skewness	-0.724
Mean of logged Data	4.149	SD of logged Data	0.307

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	96.9	95% Adjusted-CLT UCL (Chen-1995)	78.27
		95% Modified-t UCL (Johnson-1978)	96.14

Nonparametric Distribution Free UCLs

95% CLT UCL	83.1	95% Jackknife UCL	96.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	97.76	95% Chebyshev(Mean, Sd) UCL	112.5
97.5% Chebyshev(Mean, Sd) UCL	132.9	99% Chebyshev(Mean, Sd) UCL	173

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.13	Mean	13.54
Maximum	17	Median	15.5
SD	4.748	Std. Error of Mean	2.741
Coefficient of Variation	0.351	Skewness	-1.54
Mean of logged Data	2.557	SD of logged Data	0.402

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.55	95% Adjusted-CLT UCL (Chen-1995)	15.45
		95% Modified-t UCL (Johnson-1978)	21.14

Nonparametric Distribution Free UCLs

95% CLT UCL	18.05	95% Jackknife UCL	21.55
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	21.77	95% Chebyshev(Mean, Sd) UCL	25.49
97.5% Chebyshev(Mean, Sd) UCL	30.66	99% Chebyshev(Mean, Sd) UCL	40.82

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

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	56.1	Mean	79.13
Maximum	102	Median	79.3
SD	22.95	Std. Error of Mean	13.25
Coefficient of Variation	0.29	Skewness	-0.0327

Mean of logged Data	4.342	SD of logged Data	0.3

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	117.8	95% Adjusted-CLT UCL (Chen-1995)	100.7
		95% Modified-t UCL (Johnson-1978)	117.8

Nonparametric Distribution Free UCLs

95% CLT UCL	100.9	95% Jackknife UCL	117.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	118.9	95% Chebyshev(Mean, Sd) UCL	136.9
97.5% Chebyshev(Mean, Sd) UCL	161.9	99% Chebyshev(Mean, Sd) UCL	211

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

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

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

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.07	Mean	1.57
Maximum	2.29	Median	1.35
SD	0.639	Std. Error of Mean	0.369
Coefficient of Variation	0.407	Skewness	1.366
Mean of logged Data	0.399	SD of logged Data	0.39

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.647	95% Adjusted-CLT UCL (Chen-1995)	2.488

		95% Modified-t UCL (Johnson-1978)	2.696

Nonparametric Distribution Free UCLs

95% CLT UCL	2.177	95% Jackknife UCL	2.647
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.677	95% Chebyshev(Mean, Sd) UCL	3.178
97.5% Chebyshev(Mean, Sd) UCL	3.874	99% Chebyshev(Mean, Sd) UCL	5.241

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	35.8	Mean	55.3
Maximum	68	Median	62.1
SD	17.14	Std. Error of Mean	9.898
Coefficient of Variation	0.31	Skewness	-1.504
Mean of logged Data	3.975	SD of logged Data	0.347

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	84.2	95% Adjusted-CLT UCL (Chen-1995)	62.4
		95% Modified-t UCL (Johnson-1978)	82.77

Nonparametric Distribution Free UCLs

95% CLT UCL	71.58	95% Jackknife UCL	84.2
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	84.99	95% Chebyshev(Mean, Sd) UCL	98.44
97.5% Chebyshev(Mean, Sd) UCL	117.1	99% Chebyshev(Mean, Sd) UCL	153.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.95	Mean	5.37
Maximum	6.81	Median	5.35
SD	1.43	Std. Error of Mean	0.826
Coefficient of Variation	0.266	Skewness	0.0629
Mean of logged Data	1.656	SD of logged Data	0.273

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.781	95% Adjusted-CLT UCL (Chen-1995)	6.76
		95% Modified-t UCL (Johnson-1978)	7.786

Nonparametric Distribution Free UCLs

95% CLT UCL	6.728	95% Jackknife UCL	7.781
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	7.847	95% Chebyshev(Mean, Sd) UCL	8.969
97.5% Chebyshev(Mean, Sd) UCL	10.53	99% Chebyshev(Mean, Sd) UCL	13.59

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	23.9	Mean	29.73
Maximum	33.5	Median	31.8
SD	5.123	Std. Error of Mean	2.958

Coefficient of Variation	0.172	Skewness	-1.52
Mean of logged Data	3.382	SD of logged Data	0.182

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.37	95% Adjusted-CLT UCL (Chen-1995)	31.82
		95% Modified-t UCL (Johnson-1978)	37.94

Nonparametric Distribution Free UCLs

95% CLT UCL	34.6	95% Jackknife UCL	38.37
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	38.61	95% Chebyshev(Mean, Sd) UCL	42.63
97.5% Chebyshev(Mean, Sd) UCL	48.2	99% Chebyshev(Mean, Sd) UCL	59.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	53	Mean	80.13
Maximum	99.5	Median	87.9
SD	24.2	Std. Error of Mean	13.97
Coefficient of Variation	0.302	Skewness	-1.295
Mean of logged Data	4.349	SD of logged Data	0.334

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	120.9	95% Adjusted-CLT UCL (Chen-1995)	91.95
		95% Modified-t UCL (Johnson-1978)	119.2

Nonparametric Distribution Free UCLs

95% CLT UCL	103.1	95% Jackknife UCL	120.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	122.1	95% Chebyshev(Mean, Sd) UCL	141
97.5% Chebyshev(Mean, Sd) UCL	167.4	99% Chebyshev(Mean, Sd) UCL	219.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.9	Mean	18.4
Maximum	22.8	Median	16.5
SD	3.822	Std. Error of Mean	2.207
Coefficient of Variation	0.208	Skewness	1.684
Mean of logged Data	2.899	SD of logged Data	0.198

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.84	95% Adjusted-CLT UCL (Chen-1995)	24.32
		95% Modified-t UCL (Johnson-1978)	25.2

Nonparametric Distribution Free UCLs

95% CLT UCL	22.03	95% Jackknife UCL	24.84
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.02	95% Chebyshev(Mean, Sd) UCL	28.02
97.5% Chebyshev(Mean, Sd) UCL	32.18	99% Chebyshev(Mean, Sd) UCL	40.36

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	46.2	Mean	60.77
Maximum	75.6	Median	60.5
SD	14.7	Std. Error of Mean	8.488
Coefficient of Variation	0.242	Skewness	0.0816
Mean of logged Data	4.087	SD of logged Data	0.247

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	85.55	95% Adjusted-CLT UCL (Chen-1995)	75.16
		95% Modified-t UCL (Johnson-1978)	85.62

Nonparametric Distribution Free UCLs

95% CLT UCL	74.73	95% Jackknife UCL	85.55
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	86.23	95% Chebyshev(Mean, Sd) UCL	97.77
97.5% Chebyshev(Mean, Sd) UCL	113.8	99% Chebyshev(Mean, Sd) UCL	145.2

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

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

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	72.9	Mean	73.97
Maximum	75.9	Median	73.1

SD	1.677	Std. Error of Mean	0.968
Coefficient of Variation	0.0227	Skewness	1.704
Mean of logged Data	4.303	SD of logged Data	0.0225

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	76.79	95% Adjusted-CLT UCL (Chen-1995)	76.58
		95% Modified-t UCL (Johnson-1978)	76.95

Nonparametric Distribution Free UCLs

95% CLT UCL	75.56	95% Jackknife UCL	76.79
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	76.87	95% Chebyshev(Mean, Sd) UCL	78.19
97.5% Chebyshev(Mean, Sd) UCL	80.01	99% Chebyshev(Mean, Sd) UCL	83.6

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

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:48:20 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404279) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.579	Mean	0.97
Maximum	1.3	Median	1.03
SD	0.364	Std. Error of Mean	0.21
Coefficient of Variation	0.376	Skewness	-0.725
Mean of logged Data	-0.0848	SD of logged Data	0.416

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.584	95% Adjusted-CLT UCL (Chen-1995)	1.222
		95% Modified-t UCL (Johnson-1978)	1.569

Nonparametric Distribution Free UCLs

95% CLT UCL	1.316	95% Jackknife UCL	1.584
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.601	95% Chebyshev(Mean, Sd) UCL	1.886
97.5% Chebyshev(Mean, Sd) UCL	2.283	99% Chebyshev(Mean, Sd) UCL	3.062

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

ACENAPHTHENE

General Statistics			
Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.383	Mean	0.457
Maximum	0.495	Median	0.492
SD	0.0637	Std. Error of Mean	0.0368
Coefficient of Variation	0.139	Skewness	-1.729
Mean of logged Data	-0.791	SD of logged Data	0.146

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.564	95% Adjusted-CLT UCL (Chen-1995)	0.478
		95% Modified-t UCL (Johnson-1978)	0.558

Nonparametric Distribution Free UCLs

95% CLT UCL	0.517	95% Jackknife UCL	0.564
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.567	95% Chebyshev(Mean, Sd) UCL	0.617
97.5% Chebyshev(Mean, Sd) UCL	0.686	99% Chebyshev(Mean, Sd) UCL	0.822

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

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

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

BENZ(A)ANTHRACENE

General Statistics			
Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	5.22	Mean	5.54
Maximum	5.71	Median	5.69
SD	0.277	Std. Error of Mean	0.16
Coefficient of Variation	0.0501	Skewness	-1.722
Mean of logged Data	1.711	SD of logged Data	0.0508

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.008	95% Adjusted-CLT UCL (Chen-1995)	5.633
		95% Modified-t UCL (Johnson-1978)	5.981

Nonparametric Distribution Free UCLs

95% CLT UCL	5.803	95% Jackknife UCL	6.008
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.02	95% Chebyshev(Mean, Sd) UCL	6.238
97.5% Chebyshev(Mean, Sd) UCL	6.54	99% Chebyshev(Mean, Sd) UCL	7.133

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.75	Mean	6.833
Maximum	6.96	Median	6.79
SD	0.112	Std. Error of Mean	0.0644
Coefficient of Variation	0.0163	Skewness	1.485
Mean of logged Data	1.922	SD of logged Data	0.0163

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.021	95% Adjusted-CLT UCL (Chen-1995)	6.998
		95% Modified-t UCL (Johnson-1978)	7.031

Nonparametric Distribution Free UCLs

95% CLT UCL	6.939	95% Jackknife UCL	7.021
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A

95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	7.026	95% Chebyshev(Mean, Sd) UCL	7.114
97.5% Chebyshev(Mean, Sd) UCL	7.235	99% Chebyshev(Mean, Sd) UCL	7.474

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	9.99	Mean	10.63
Maximum	11.2	Median	10.7
SD	0.608	Std. Error of Mean	0.351
Coefficient of Variation	0.0572	Skewness	-0.511
Mean of logged Data	2.363	SD of logged Data	0.0575

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.66	95% Adjusted-CLT UCL (Chen-1995)	11.1
		95% Modified-t UCL (Johnson-1978)	11.64

Nonparametric Distribution Free UCLs

95% CLT UCL	11.21	95% Jackknife UCL	11.66
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.68	95% Chebyshev(Mean, Sd) UCL	12.16
97.5% Chebyshev(Mean, Sd) UCL	12.82	99% Chebyshev(Mean, Sd) UCL	14.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.06	Mean	6.247
Maximum	6.4	Median	6.28
SD	0.172	Std. Error of Mean	0.0996
Coefficient of Variation	0.0276	Skewness	-0.837
Mean of logged Data	1.832	SD of logged Data	0.0277

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.537	95% Adjusted-CLT UCL (Chen-1995)	6.359
		95% Modified-t UCL (Johnson-1978)	6.529

Nonparametric Distribution Free UCLs

95% CLT UCL	6.41	95% Jackknife UCL	6.537
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.545	95% Chebyshev(Mean, Sd) UCL	6.681
97.5% Chebyshev(Mean, Sd) UCL	6.868	99% Chebyshev(Mean, Sd) UCL	7.237

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

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

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

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.19	Mean	4.313
Maximum	4.47	Median	4.28
SD	0.143	Std. Error of Mean	0.0825
Coefficient of Variation	0.0331	Skewness	0.992
Mean of logged Data	1.461	SD of logged Data	0.033

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.554	95% Adjusted-CLT UCL (Chen-1995)	4.5
		95% Modified-t UCL (Johnson-1978)	4.562

Nonparametric Distribution Free UCLs

95% CLT UCL	4.449	95% Jackknife UCL	4.554
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.561	95% Chebyshev(Mean, Sd) UCL	4.673
97.5% Chebyshev(Mean, Sd) UCL	4.829	99% Chebyshev(Mean, Sd) UCL	5.134

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

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

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	10.4	Mean	10.57
Maximum	10.7	Median	10.6
SD	0.153	Std. Error of Mean	0.0882
Coefficient of Variation	0.0145	Skewness	-0.935
Mean of logged Data	2.358	SD of logged Data	0.0145

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.82	95% Adjusted-CLT UCL (Chen-1995)	10.66
		95% Modified-t UCL (Johnson-1978)	10.82

Nonparametric Distribution Free UCLs

95% CLT UCL	10.71	95% Jackknife UCL	10.82

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.83	95% Chebyshev(Mean, Sd) UCL	10.95
97.5% Chebyshev(Mean, Sd) UCL	11.12	99% Chebyshev(Mean, Sd) UCL	11.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	9.85	Mean	10.48
Maximum	10.8	Median	10.8
SD	0.548	Std. Error of Mean	0.317
Coefficient of Variation	0.0523	Skewness	-1.732
Mean of logged Data	2.349	SD of logged Data	0.0532

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.41	95% Adjusted-CLT UCL (Chen-1995)	10.67
		95% Modified-t UCL (Johnson-1978)	11.36

Nonparametric Distribution Free UCLs

95% CLT UCL	11	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.43	95% Chebyshev(Mean, Sd) UCL	11.86
97.5% Chebyshev(Mean, Sd) UCL	12.46	99% Chebyshev(Mean, Sd) UCL	13.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	5.95	Mean	6.177
Maximum	6.37	Median	6.21
SD	0.212	Std. Error of Mean	0.122
Coefficient of Variation	0.0343	Skewness	-0.69
Mean of logged Data	1.82	SD of logged Data	0.0345

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.534	95% Adjusted-CLT UCL (Chen-1995)	6.326
		95% Modified-t UCL (Johnson-1978)	6.526

Nonparametric Distribution Free UCLs

95% CLT UCL	6.378	95% Jackknife UCL	6.534
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.544	95% Chebyshev(Mean, Sd) UCL	6.71
97.5% Chebyshev(Mean, Sd) UCL	6.941	99% Chebyshev(Mean, Sd) UCL	7.394

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.98	Mean	2.38

Maximum	2.71	Median	2.45
SD	0.37	Std. Error of Mean	0.214
Coefficient of Variation	0.155	Skewness	-0.821
Mean of logged Data	0.859	SD of logged Data	0.16

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.004	95% Adjusted-CLT UCL (Chen-1995)	2.623
		95% Modified-t UCL (Johnson-1978)	2.987

Nonparametric Distribution Free UCLs

95% CLT UCL	2.731	95% Jackknife UCL	3.004
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.021	95% Chebyshev(Mean, Sd) UCL	3.311
97.5% Chebyshev(Mean, Sd) UCL	3.714	99% Chebyshev(Mean, Sd) UCL	4.505

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

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.44	Mean	4.933
Maximum	5.28	Median	5.08
SD	0.439	Std. Error of Mean	0.253
Coefficient of Variation	0.0889	Skewness	-1.336
Mean of logged Data	1.593	SD of logged Data	0.091

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.673	95% Adjusted-CLT UCL (Chen-1995)	5.141
		95% Modified-t UCL (Johnson-1978)	5.64

Nonparametric Distribution Free UCLs

95% CLT UCL	5.35	95% Jackknife UCL	5.673
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.693	95% Chebyshev(Mean, Sd) UCL	6.038
97.5% Chebyshev(Mean, Sd) UCL	6.515	99% Chebyshev(Mean, Sd) UCL	7.454

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	9.1	Mean	9.663
Maximum	10.1	Median	9.79
SD	0.512	Std. Error of Mean	0.296
Coefficient of Variation	0.053	Skewness	-1.045
Mean of logged Data	2.267	SD of logged Data	0.0535

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.53	95% Adjusted-CLT UCL (Chen-1995)	9.959
		95% Modified-t UCL (Johnson-1978)	10.5

Nonparametric Distribution Free UCLs

95% CLT UCL	10.15	95% Jackknife UCL	10.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.55	95% Chebyshev(Mean, Sd) UCL	10.95
97.5% Chebyshev(Mean, Sd) UCL	11.51	99% Chebyshev(Mean, Sd) UCL	12.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.99	Mean	9.443
Maximum	9.76	Median	9.58
SD	0.403	Std. Error of Mean	0.233
Coefficient of Variation	0.0427	Skewness	-1.351
Mean of logged Data	2.245	SD of logged Data	0.0431

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.12	95% Adjusted-CLT UCL (Chen-1995)	9.632
		95% Modified-t UCL (Johnson-1978)	10.09

Nonparametric Distribution Free UCLs

95% CLT UCL	9.826	95% Jackknife UCL	10.12
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.14	95% Chebyshev(Mean, Sd) UCL	10.46
97.5% Chebyshev(Mean, Sd) UCL	10.9	99% Chebyshev(Mean, Sd) UCL	11.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	9.95	Mean	10.78
Maximum	12	Median	10.4
SD	1.077	Std. Error of Mean	0.622
Coefficient of Variation	0.0999	Skewness	1.398
Mean of logged Data	2.375	SD of logged Data	0.0979

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.6	95% Adjusted-CLT UCL (Chen-1995)	12.34
		95% Modified-t UCL (Johnson-1978)	12.68

Nonparametric Distribution Free UCLs

95% CLT UCL	11.81	95% Jackknife UCL	12.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.65	95% Chebyshev(Mean, Sd) UCL	13.49
97.5% Chebyshev(Mean, Sd) UCL	14.67	99% Chebyshev(Mean, Sd) UCL	16.97

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

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

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	37.8	Mean	39.33
Maximum	41.2	Median	39
SD	1.724	Std. Error of Mean	0.996
Coefficient of Variation	0.0438	Skewness	0.837
Mean of logged Data	3.671	SD of logged Data	0.0436

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.24	95% Adjusted-CLT UCL (Chen-1995)	41.49
		95% Modified-t UCL (Johnson-1978)	42.32

Nonparametric Distribution Free UCLs

95% CLT UCL	40.97	95% Jackknife UCL	42.24
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	42.32	95% Chebyshev(Mean, Sd) UCL	43.67
97.5% Chebyshev(Mean, Sd) UCL	45.55	99% Chebyshev(Mean, Sd) UCL	49.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:49:46 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404280) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.937	Mean	1.36
Maximum	1.68	Median	1.385
SD	0.262	Std. Error of Mean	0.107
Coefficient of Variation	0.193	Skewness	-0.628
Mean of logged Data	0.29	SD of logged Data	0.207

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.575	95% Adjusted-CLT UCL (Chen-1995)	1.506
		95% Modified-t UCL (Johnson-1978)	1.571

Nonparametric Distribution Free UCLs

95% CLT UCL	1.536	95% Jackknife UCL	1.575
95% Standard Bootstrap UCL	1.522	95% Bootstrap-t UCL	1.553
95% Hall's Bootstrap UCL	1.516	95% Percentile Bootstrap UCL	1.52
95% BCA Bootstrap UCL	1.483		
90% Chebyshev(Mean, Sd) UCL	1.681	95% Chebyshev(Mean, Sd) UCL	1.826
97.5% Chebyshev(Mean, Sd) UCL	2.029	99% Chebyshev(Mean, Sd) UCL	2.425

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

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.315	Mean	0.458
Maximum	0.52	Median	0.479
SD	0.0754	Std. Error of Mean	0.0308
Coefficient of Variation	0.165	Skewness	-1.758
Mean of logged Data	-0.794	SD of logged Data	0.186

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.52	95% Adjusted-CLT UCL (Chen-1995)	0.485
		95% Modified-t UCL (Johnson-1978)	0.517

Nonparametric Distribution Free UCLs

95% CLT UCL	0.509	95% Jackknife UCL	0.52
95% Standard Bootstrap UCL	0.505	95% Bootstrap-t UCL	0.499
95% Hall's Bootstrap UCL	0.49	95% Percentile Bootstrap UCL	0.499
95% BCA Bootstrap UCL	0.493		
90% Chebyshev(Mean, Sd) UCL	0.551	95% Chebyshev(Mean, Sd) UCL	0.592
97.5% Chebyshev(Mean, Sd) UCL	0.65	99% Chebyshev(Mean, Sd) UCL	0.765

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.005	Mean	3.503
Maximum	6.1	Median	3.05
SD	1.699	Std. Error of Mean	0.694
Coefficient of Variation	0.485	Skewness	0.673
Mean of logged Data	1.156	SD of logged Data	0.481

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.901	95% Adjusted-CLT UCL (Chen-1995)	4.848
		95% Modified-t UCL (Johnson-1978)	4.933

Nonparametric Distribution Free UCLs

95% CLT UCL	4.644	95% Jackknife UCL	4.901
95% Standard Bootstrap UCL	4.55	95% Bootstrap-t UCL	5.064
95% Hall's Bootstrap UCL	4.352	95% Percentile Bootstrap UCL	4.599
95% BCA Bootstrap UCL	4.743		
90% Chebyshev(Mean, Sd) UCL	5.584	95% Chebyshev(Mean, Sd) UCL	6.527
97.5% Chebyshev(Mean, Sd) UCL	7.835	99% Chebyshev(Mean, Sd) UCL	10.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.065	Mean	5.134
Maximum	7.53	Median	4.815
SD	1.945	Std. Error of Mean	0.794
Coefficient of Variation	0.379	Skewness	-0.382
Mean of logged Data	1.56	SD of logged Data	0.459

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.734	95% Adjusted-CLT UCL (Chen-1995)	6.308
		95% Modified-t UCL (Johnson-1978)	6.714

Nonparametric Distribution Free UCLs

95% CLT UCL	6.44	95% Jackknife UCL	6.734
95% Standard Bootstrap UCL	6.305	95% Bootstrap-t UCL	6.886
95% Hall's Bootstrap UCL	7.287	95% Percentile Bootstrap UCL	6.37
95% BCA Bootstrap UCL	6.163		
90% Chebyshev(Mean, Sd) UCL	7.516	95% Chebyshev(Mean, Sd) UCL	8.595

97.5% Chebyshev(Mean, Sd) UCL	10.09	99% Chebyshev(Mean, Sd) UCL	13.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.67	Mean	6.739
Maximum	12.4	Median	5.945
SD	4.077	Std. Error of Mean	1.665
Coefficient of Variation	0.605	Skewness	0.417
Mean of logged Data	1.739	SD of logged Data	0.65

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.09	95% Adjusted-CLT UCL (Chen-1995)	9.78
		95% Modified-t UCL (Johnson-1978)	10.14

Nonparametric Distribution Free UCLs

95% CLT UCL	9.477	95% Jackknife UCL	10.09
95% Standard Bootstrap UCL	9.245	95% Bootstrap-t UCL	10.26
95% Hall's Bootstrap UCL	8.739	95% Percentile Bootstrap UCL	9.325
95% BCA Bootstrap UCL	9.456		
90% Chebyshev(Mean, Sd) UCL	11.73	95% Chebyshev(Mean, Sd) UCL	14
97.5% Chebyshev(Mean, Sd) UCL	17.13	99% Chebyshev(Mean, Sd) UCL	23.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	7.558
Maximum	19.44	Median	5.93
SD	6.134	Std. Error of Mean	2.504
Coefficient of Variation	0.812	Skewness	1.928
Mean of logged Data	1.805	SD of logged Data	0.688

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

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.6	95% Adjusted-CLT UCL (Chen-1995)	13.78
		95% Modified-t UCL (Johnson-1978)	12.93

Nonparametric Distribution Free UCLs

95% CLT UCL	11.68	95% Jackknife UCL	12.6
95% Standard Bootstrap UCL	11.31	95% Bootstrap-t UCL	18.5
95% Hall's Bootstrap UCL	27.61	95% Percentile Bootstrap UCL	11.59
95% BCA Bootstrap UCL	13.12		
90% Chebyshev(Mean, Sd) UCL	15.07	95% Chebyshev(Mean, Sd) UCL	18.47
97.5% Chebyshev(Mean, Sd) UCL	23.2	99% Chebyshev(Mean, Sd) UCL	32.47

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.93	Mean	6.175
Maximum	11.6	Median	5.785
SD	3.961	Std. Error of Mean	1.617
Coefficient of Variation	0.641	Skewness	0.292
Mean of logged Data	1.614	SD of logged Data	0.736

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.433	95% Adjusted-CLT UCL (Chen-1995)	9.04
		95% Modified-t UCL (Johnson-1978)	9.465

Nonparametric Distribution Free UCLs

95% CLT UCL	8.835	95% Jackknife UCL	9.433
95% Standard Bootstrap UCL	8.595	95% Bootstrap-t UCL	9.838
95% Hall's Bootstrap UCL	8.444	95% Percentile Bootstrap UCL	8.643
95% BCA Bootstrap UCL	8.6		
90% Chebyshev(Mean, Sd) UCL	11.03	95% Chebyshev(Mean, Sd) UCL	13.22
97.5% Chebyshev(Mean, Sd) UCL	16.27	99% Chebyshev(Mean, Sd) UCL	22.26

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.35	Mean	6.273
Maximum	12.5	Median	5.675
SD	4.062	Std. Error of Mean	1.658
Coefficient of Variation	0.648	Skewness	0.602
Mean of logged Data	1.643	SD of logged Data	0.7

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.615	95% Adjusted-CLT UCL (Chen-1995)	9.437
		95% Modified-t UCL (Johnson-1978)	9.683

Nonparametric Distribution Free UCLs

95% CLT UCL	9.001	95% Jackknife UCL	9.615
95% Standard Bootstrap UCL	8.782	95% Bootstrap-t UCL	10.18
95% Hall's Bootstrap UCL	8.809	95% Percentile Bootstrap UCL	8.787
95% BCA Bootstrap UCL	9.133		
90% Chebyshev(Mean, Sd) UCL	11.25	95% Chebyshev(Mean, Sd) UCL	13.5
97.5% Chebyshev(Mean, Sd) UCL	16.63	99% Chebyshev(Mean, Sd) UCL	22.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.52	Mean	4.635
Maximum	7.37	Median	4.118
SD	2.026	Std. Error of Mean	0.827
Coefficient of Variation	0.437	Skewness	0.426
Mean of logged Data	1.452	SD of logged Data	0.445

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.302	95% Adjusted-CLT UCL (Chen-1995)	6.15
		95% Modified-t UCL (Johnson-1978)	6.326

Nonparametric Distribution Free UCLs

95% CLT UCL	5.996	95% Jackknife UCL	6.302
95% Standard Bootstrap UCL	5.894	95% Bootstrap-t UCL	6.509
95% Hall's Bootstrap UCL	5.728	95% Percentile Bootstrap UCL	5.886
95% BCA Bootstrap UCL	5.958		
90% Chebyshev(Mean, Sd) UCL	7.117	95% Chebyshev(Mean, Sd) UCL	8.241
97.5% Chebyshev(Mean, Sd) UCL	9.801	99% Chebyshev(Mean, Sd) UCL	12.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.28	Mean	2.713

Maximum	3.38	Median	2.64
SD	0.43	Std. Error of Mean	0.176
Coefficient of Variation	0.159	Skewness	0.658
Mean of logged Data	0.988	SD of logged Data	0.155

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.067	95% Adjusted-CLT UCL (Chen-1995)	3.053
		95% Modified-t UCL (Johnson-1978)	3.075

Nonparametric Distribution Free UCLs

95% CLT UCL	3.002	95% Jackknife UCL	3.067
95% Standard Bootstrap UCL	2.976	95% Bootstrap-t UCL	3.271
95% Hall's Bootstrap UCL	3.152	95% Percentile Bootstrap UCL	2.992
95% BCA Bootstrap UCL	3.013		
90% Chebyshev(Mean, Sd) UCL	3.24	95% Chebyshev(Mean, Sd) UCL	3.479
97.5% Chebyshev(Mean, Sd) UCL	3.81	99% Chebyshev(Mean, Sd) UCL	4.461

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

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

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.085	Mean	3.98
Maximum	5.92	Median	3.415
SD	1.159	Std. Error of Mean	0.473
Coefficient of Variation	0.291	Skewness	1.214
Mean of logged Data	1.349	SD of logged Data	0.269

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.933	95% Adjusted-CLT UCL (Chen-1995)	5.008

		95% Modified-t UCL (Johnson-1978)	4.972

Nonparametric Distribution Free UCLs

95% CLT UCL	4.758	95% Jackknife UCL	4.933
95% Standard Bootstrap UCL	4.686	95% Bootstrap-t UCL	8.434
95% Hall's Bootstrap UCL	10.5	95% Percentile Bootstrap UCL	4.726
95% BCA Bootstrap UCL	4.91		
90% Chebyshev(Mean, Sd) UCL	5.399	95% Chebyshev(Mean, Sd) UCL	6.042
97.5% Chebyshev(Mean, Sd) UCL	6.934	99% Chebyshev(Mean, Sd) UCL	8.686

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.21	Mean	5.963
Maximum	11.3	Median	5.275
SD	3.557	Std. Error of Mean	1.452
Coefficient of Variation	0.597	Skewness	0.553
Mean of logged Data	1.624	SD of logged Data	0.637

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.889	95% Adjusted-CLT UCL (Chen-1995)	8.702
		95% Modified-t UCL (Johnson-1978)	8.944

Nonparametric Distribution Free UCLs

95% CLT UCL	8.351	95% Jackknife UCL	8.889
95% Standard Bootstrap UCL	8.148	95% Bootstrap-t UCL	9.281
95% Hall's Bootstrap UCL	8.154	95% Percentile Bootstrap UCL	8.1
95% BCA Bootstrap UCL	8.048		
90% Chebyshev(Mean, Sd) UCL	10.32	95% Chebyshev(Mean, Sd) UCL	12.29
97.5% Chebyshev(Mean, Sd) UCL	15.03	99% Chebyshev(Mean, Sd) UCL	20.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.9	Mean	10.72
Maximum	11.4	Median	10.8
SD	0.605	Std. Error of Mean	0.247
Coefficient of Variation	0.0564	Skewness	-0.277
Mean of logged Data	2.37	SD of logged Data	0.0568

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.21	95% Adjusted-CLT UCL (Chen-1995)	11.09
		95% Modified-t UCL (Johnson-1978)	11.21

Nonparametric Distribution Free UCLs

95% CLT UCL	11.12	95% Jackknife UCL	11.21
95% Standard Bootstrap UCL	11.09	95% Bootstrap-t UCL	11.19
95% Hall's Bootstrap UCL	10.99	95% Percentile Bootstrap UCL	11.08
95% BCA Bootstrap UCL	11.05		
90% Chebyshev(Mean, Sd) UCL	11.46	95% Chebyshev(Mean, Sd) UCL	11.79
97.5% Chebyshev(Mean, Sd) UCL	12.26	99% Chebyshev(Mean, Sd) UCL	13.17

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

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

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

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.08	Mean	10.47
Maximum	12	Median	10.65
SD	1.132	Std. Error of Mean	0.462

Coefficient of Variation	0.108	Skewness	-0.109
Mean of logged Data	2.344	SD of logged Data	0.109

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.4	95% Adjusted-CLT UCL (Chen-1995)	11.21
		95% Modified-t UCL (Johnson-1978)	11.4

Nonparametric Distribution Free UCLs

95% CLT UCL	11.23	95% Jackknife UCL	11.4
95% Standard Bootstrap UCL	11.16	95% Bootstrap-t UCL	11.31
95% Hall's Bootstrap UCL	11.09	95% Percentile Bootstrap UCL	11.16
95% BCA Bootstrap UCL	11.16		
90% Chebyshev(Mean, Sd) UCL	11.86	95% Chebyshev(Mean, Sd) UCL	12.49
97.5% Chebyshev(Mean, Sd) UCL	13.36	99% Chebyshev(Mean, Sd) UCL	15.07

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

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

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

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.8	Mean	42.12
Maximum	44.6	Median	41.95
SD	1.314	Std. Error of Mean	0.536
Coefficient of Variation	0.0312	Skewness	1.651
Mean of logged Data	3.74	SD of logged Data	0.0307

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

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

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	43.2	95% Adjusted-CLT UCL (Chen-1995)	43.39
		95% Modified-t UCL (Johnson-1978)	43.26

Nonparametric Distribution Free UCLs

95% CLT UCL	43	95% Jackknife UCL	43.2
95% Standard Bootstrap UCL	42.91	95% Bootstrap-t UCL	43.97
95% Hall's Bootstrap UCL	47.18	95% Percentile Bootstrap UCL	42.92
95% BCA Bootstrap UCL	43.25		
90% Chebyshev(Mean, Sd) UCL	43.73	95% Chebyshev(Mean, Sd) UCL	44.45
97.5% Chebyshev(Mean, Sd) UCL	45.47	99% Chebyshev(Mean, Sd) UCL	47.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:32:48 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404487) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.888	Mean	1.004
Maximum	1.14	Median	0.985
SD	0.127	Std. Error of Mean	0.0734
Coefficient of Variation	0.127	Skewness	0.669
Mean of logged Data	-9.563E-4	SD of logged Data	0.126

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

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

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.219	95% Adjusted-CLT UCL (Chen-1995)	1.155
		95% Modified-t UCL (Johnson-1978)	1.223

Nonparametric Distribution Free UCLs

95% CLT UCL	1.125	95% Jackknife UCL	1.219
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.224	95% Chebyshev(Mean, Sd) UCL	1.324
97.5% Chebyshev(Mean, Sd) UCL	1.463	99% Chebyshev(Mean, Sd) UCL	1.735

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

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

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	0.472	Mean	0.752
Maximum	1.26	Median	0.525
SD	0.44	Std. Error of Mean	0.254
Coefficient of Variation	0.585	Skewness	1.704
Mean of logged Data	-0.388	SD of logged Data	0.539

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

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

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.495	95% Adjusted-CLT UCL (Chen-1995)	1.438
		95% Modified-t UCL (Johnson-1978)	1.537

Nonparametric Distribution Free UCLs

95% CLT UCL	1.171	95% Jackknife UCL	1.495
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.515	95% Chebyshev(Mean, Sd) UCL	1.861
97.5% Chebyshev(Mean, Sd) UCL	2.34	99% Chebyshev(Mean, Sd) UCL	3.283

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

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

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.135	Mean	4.725
Maximum	6.27	Median	5.77
SD	2.257	Std. Error of Mean	1.303
Coefficient of Variation	0.478	Skewness	-1.637
Mean of logged Data	1.449	SD of logged Data	0.599

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

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

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	8.53	95% Adjusted-CLT UCL (Chen-1995)	5.552
		95% Modified-t UCL (Johnson-1978)	8.325

Nonparametric Distribution Free UCLs

95% CLT UCL	6.868	95% Jackknife UCL	8.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	8.634	95% Chebyshev(Mean, Sd) UCL	10.4
97.5% Chebyshev(Mean, Sd) UCL	12.86	99% Chebyshev(Mean, Sd) UCL	17.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

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

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

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.5	Mean	33.5
Maximum	45.3	Median	43.7
SD	19.07	Std. Error of Mean	11.01
Coefficient of Variation	0.569	Skewness	-1.718
Mean of logged Data	3.344	SD of logged Data	0.781

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

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	65.65	95% Adjusted-CLT UCL (Chen-1995)	39.94
		95% Modified-t UCL (Johnson-1978)	63.83

Nonparametric Distribution Free UCLs

95% CLT UCL	51.61	95% Jackknife UCL	65.65
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	66.53	95% Chebyshev(Mean, Sd) UCL	81.49
97.5% Chebyshev(Mean, Sd) UCL	102.3	99% Chebyshev(Mean, Sd) UCL	143

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	14.8	Mean	48.67
Maximum	65.8	Median	65.4
SD	29.33	Std. Error of Mean	16.93
Coefficient of Variation	0.603	Skewness	-1.732
Mean of logged Data	3.687	SD of logged Data	0.86

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	98.11	95% Adjusted-CLT UCL (Chen-1995)	58.43
		95% Modified-t UCL (Johnson-1978)	95.29

Nonparametric Distribution Free UCLs

95% CLT UCL	76.52	95% Jackknife UCL	98.11
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	99.47	95% Chebyshev(Mean, Sd) UCL	122.5
97.5% Chebyshev(Mean, Sd) UCL	154.4	99% Chebyshev(Mean, Sd) UCL	217.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	23.1	Mean	77.03
Maximum	106	Median	102
SD	46.75	Std. Error of Mean	26.99
Coefficient of Variation	0.607	Skewness	-1.718
Mean of logged Data	4.143	SD of logged Data	0.869

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	155.8	95% Adjusted-CLT UCL (Chen-1995)	92.83
		95% Modified-t UCL (Johnson-1978)	151.4

Nonparametric Distribution Free UCLs

95% CLT UCL	121.4	95% Jackknife UCL	155.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	158	95% Chebyshev(Mean, Sd) UCL	194.7
97.5% Chebyshev(Mean, Sd) UCL	245.6	99% Chebyshev(Mean, Sd) UCL	345.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	28.7	Mean	104.2
Maximum	171	Median	113
SD	71.55	Std. Error of Mean	41.31
Coefficient of Variation	0.686	Skewness	-0.543
Mean of logged Data	4.409	SD of logged Data	0.934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	224.9	95% Adjusted-CLT UCL (Chen-1995)	158.3
		95% Modified-t UCL (Johnson-1978)	222.7

Nonparametric Distribution Free UCLs

95% CLT UCL	172.2	95% Jackknife UCL	224.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	228.2	95% Chebyshev(Mean, Sd) UCL	284.3
97.5% Chebyshev(Mean, Sd) UCL	362.2	99% Chebyshev(Mean, Sd) UCL	515.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.56	Mean	30.19
Maximum	44.2	Median	37.8
SD	19	Std. Error of Mean	10.97
Coefficient of Variation	0.629	Skewness	-1.514
Mean of logged Data	3.189	SD of logged Data	0.906

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	62.22	95% Adjusted-CLT UCL (Chen-1995)	37.99
		95% Modified-t UCL (Johnson-1978)	60.62

Nonparametric Distribution Free UCLs

95% CLT UCL	48.23	95% Jackknife UCL	62.22

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	63.1	95% Chebyshev(Mean, Sd) UCL	78
97.5% Chebyshev(Mean, Sd) UCL	98.69	99% Chebyshev(Mean, Sd) UCL	139.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	18.3	Mean	52.17
Maximum	71.4	Median	66.8
SD	29.42	Std. Error of Mean	16.99
Coefficient of Variation	0.564	Skewness	-1.685
Mean of logged Data	3.792	SD of logged Data	0.768

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	101.8	95% Adjusted-CLT UCL (Chen-1995)	62.45
		95% Modified-t UCL (Johnson-1978)	99.01

Nonparametric Distribution Free UCLs

95% CLT UCL	80.11	95% Jackknife UCL	101.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	103.1	95% Chebyshev(Mean, Sd) UCL	126.2
97.5% Chebyshev(Mean, Sd) UCL	158.2	99% Chebyshev(Mean, Sd) UCL	221.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.67	Mean	11.49
Maximum	16.9	Median	13.9
SD	6.936	Std. Error of Mean	4.005
Coefficient of Variation	0.604	Skewness	-1.375
Mean of logged Data	2.253	SD of logged Data	0.831

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.18	95% Adjusted-CLT UCL (Chen-1995)	14.68
		95% Modified-t UCL (Johnson-1978)	22.65

Nonparametric Distribution Free UCLs

95% CLT UCL	18.08	95% Jackknife UCL	23.18
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	23.5	95% Chebyshev(Mean, Sd) UCL	28.95
97.5% Chebyshev(Mean, Sd) UCL	36.5	99% Chebyshev(Mean, Sd) UCL	51.34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	18.4	Mean	58.67

Maximum	81.4	Median	76.2
SD	34.97	Std. Error of Mean	20.19
Coefficient of Variation	0.596	Skewness	-1.689
Mean of logged Data	3.882	SD of logged Data	0.84

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	117.6	95% Adjusted-CLT UCL (Chen-1995)	70.84
		95% Modified-t UCL (Johnson-1978)	114.3

Nonparametric Distribution Free UCLs

95% CLT UCL	91.87	95% Jackknife UCL	117.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	119.2	95% Chebyshev(Mean, Sd) UCL	146.7
97.5% Chebyshev(Mean, Sd) UCL	184.7	99% Chebyshev(Mean, Sd) UCL	259.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	17.8	Mean	58.13
Maximum	83.8	Median	72.8
SD	35.36	Std. Error of Mean	20.42
Coefficient of Variation	0.608	Skewness	-1.545
Mean of logged Data	3.865	SD of logged Data	0.857

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	117.7	95% Adjusted-CLT UCL (Chen-1995)	72.25
		95% Modified-t UCL (Johnson-1978)	114.7

Nonparametric Distribution Free UCLs

95% CLT UCL	91.71	95% Jackknife UCL	117.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	119.4	95% Chebyshev(Mean, Sd) UCL	147.1
97.5% Chebyshev(Mean, Sd) UCL	185.6	99% Chebyshev(Mean, Sd) UCL	261.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.745	Mean	1.548
Maximum	2.16	Median	1.74
SD	0.727	Std. Error of Mean	0.42
Coefficient of Variation	0.469	Skewness	-1.104
Mean of logged Data	0.343	SD of logged Data	0.563

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.**

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.773	95% Adjusted-CLT UCL (Chen-1995)	1.953
		95% Modified-t UCL (Johnson-1978)	2.729

Nonparametric Distribution Free UCLs

95% CLT UCL	2.238	95% Jackknife UCL	2.773
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.807	95% Chebyshev(Mean, Sd) UCL	3.377
97.5% Chebyshev(Mean, Sd) UCL	4.169	99% Chebyshev(Mean, Sd) UCL	5.723

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	7.52	Mean	23.14
Maximum	33.1	Median	28.8
SD	13.7	Std. Error of Mean	7.908
Coefficient of Variation	0.592	Skewness	-1.542
Mean of logged Data	2.959	SD of logged Data	0.818

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.23	95% Adjusted-CLT UCL (Chen-1995)	28.62
		95% Modified-t UCL (Johnson-1978)	45.06

Nonparametric Distribution Free UCLs

95% CLT UCL	36.15	95% Jackknife UCL	46.23
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	46.86	95% Chebyshev(Mean, Sd) UCL	57.61
97.5% Chebyshev(Mean, Sd) UCL	72.53	99% Chebyshev(Mean, Sd) UCL	101.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	19.1	Mean	61.27
Maximum	82.6	Median	82.1
SD	36.52	Std. Error of Mean	21.08
Coefficient of Variation	0.596	Skewness	-1.732
Mean of logged Data	3.924	SD of logged Data	0.844

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	122.8	95% Adjusted-CLT UCL (Chen-1995)	73.42
		95% Modified-t UCL (Johnson-1978)	119.3

Nonparametric Distribution Free UCLs

95% CLT UCL	95.95	95% Jackknife UCL	122.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	124.5	95% Chebyshev(Mean, Sd) UCL	153.2
97.5% Chebyshev(Mean, Sd) UCL	192.9	99% Chebyshev(Mean, Sd) UCL	271

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	12.9	Mean	19.73
Maximum	33.3	Median	13
SD	11.75	Std. Error of Mean	6.783
Coefficient of Variation	0.595	Skewness	1.732
Mean of logged Data	2.876	SD of logged Data	0.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.54	95% Adjusted-CLT UCL (Chen-1995)	38.14
		95% Modified-t UCL (Johnson-1978)	40.67

Nonparametric Distribution Free UCLs

95% CLT UCL	30.89	95% Jackknife UCL	39.54
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	40.08	95% Chebyshev(Mean, Sd) UCL	49.3
97.5% Chebyshev(Mean, Sd) UCL	62.1	99% Chebyshev(Mean, Sd) UCL	87.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	12.6	Mean	13.1
Maximum	13.4	Median	13.3
SD	0.436	Std. Error of Mean	0.252
Coefficient of Variation	0.0333	Skewness	-1.63
Mean of logged Data	2.572	SD of logged Data	0.0336

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.83	95% Adjusted-CLT UCL (Chen-1995)	13.26
		95% Modified-t UCL (Johnson-1978)	13.8

Nonparametric Distribution Free UCLs

95% CLT UCL	13.51	95% Jackknife UCL	13.83
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A

95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.85	95% Chebyshev(Mean, Sd) UCL	14.2
97.5% Chebyshev(Mean, Sd) UCL	14.67	99% Chebyshev(Mean, Sd) UCL	15.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	83.1	Mean	89.13
Maximum	92.7	Median	91.6
SD	5.254	Std. Error of Mean	3.033
Coefficient of Variation	0.0589	Skewness	-1.647
Mean of logged Data	4.489	SD of logged Data	0.06

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	97.99	95% Adjusted-CLT UCL (Chen-1995)	91.04
		95% Modified-t UCL (Johnson-1978)	97.51

Nonparametric Distribution Free UCLs

95% CLT UCL	94.12	95% Jackknife UCL	97.99
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	98.23	95% Chebyshev(Mean, Sd) UCL	102.4
97.5% Chebyshev(Mean, Sd) UCL	108.1	99% Chebyshev(Mean, Sd) UCL	119.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:19:37 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404526) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.36	Mean	2.788
Maximum	4.55	Median	2.875
SD	1.301	Std. Error of Mean	0.531
Coefficient of Variation	0.466	Skewness	0.104
Mean of logged Data	0.923	SD of logged Data	0.512

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.858	95% Adjusted-CLT UCL (Chen-1995)	3.686
		95% Modified-t UCL (Johnson-1978)	3.862

Nonparametric Distribution Free UCLs

95% CLT UCL	3.662	95% Jackknife UCL	3.858
95% Standard Bootstrap UCL	3.605	95% Bootstrap-t UCL	4
95% Hall's Bootstrap UCL	3.48	95% Percentile Bootstrap UCL	3.573
95% BCA Bootstrap UCL	3.547		
90% Chebyshev(Mean, Sd) UCL	4.381	95% Chebyshev(Mean, Sd) UCL	5.103
97.5% Chebyshev(Mean, Sd) UCL	6.104	99% Chebyshev(Mean, Sd) UCL	8.071

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.612	Mean	3.018
Maximum	9.52	Median	2.29
SD	3.296	Std. Error of Mean	1.345
Coefficient of Variation	1.092	Skewness	2.087
Mean of logged Data	0.69	SD of logged Data	0.98

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.729	95% Adjusted-CLT UCL (Chen-1995)	6.456
		95% Modified-t UCL (Johnson-1978)	5.92

Nonparametric Distribution Free UCLs

95% CLT UCL	5.231	95% Jackknife UCL	5.729
95% Standard Bootstrap UCL	5.045	95% Bootstrap-t UCL	9.884
95% Hall's Bootstrap UCL	15.57	95% Percentile Bootstrap UCL	5.408
95% BCA Bootstrap UCL	5.873		
90% Chebyshev(Mean, Sd) UCL	7.054	95% Chebyshev(Mean, Sd) UCL	8.883
97.5% Chebyshev(Mean, Sd) UCL	11.42	99% Chebyshev(Mean, Sd) UCL	16.41

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.81	Mean	21.98
Maximum	97.1	Median	7.965
SD	37.01	Std. Error of Mean	15.11
Coefficient of Variation	1.684	Skewness	2.389
Mean of logged Data	2.211	SD of logged Data	1.346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	52.42	95% Adjusted-CLT UCL (Chen-1995)	62.58
		95% Modified-t UCL (Johnson-1978)	54.88

Nonparametric Distribution Free UCLs

95% CLT UCL	46.83	95% Jackknife UCL	52.42
95% Standard Bootstrap UCL	44.6	95% Bootstrap-t UCL	238.3
95% Hall's Bootstrap UCL	195.9	95% Percentile Bootstrap UCL	51.45
95% BCA Bootstrap UCL	53.54		
90% Chebyshev(Mean, Sd) UCL	67.3	95% Chebyshev(Mean, Sd) UCL	87.83
97.5% Chebyshev(Mean, Sd) UCL	116.3	99% Chebyshev(Mean, Sd) UCL	172.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.5	Mean	119
Maximum	427	Median	73.4
SD	153.9	Std. Error of Mean	62.84
Coefficient of Variation	1.293	Skewness	2.235
Mean of logged Data	4.225	SD of logged Data	1.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	245.6	95% Adjusted-CLT UCL (Chen-1995)	283.6
		95% Modified-t UCL (Johnson-1978)	255.2

Nonparametric Distribution Free UCLs

95% CLT UCL	222.4	95% Jackknife UCL	245.6
95% Standard Bootstrap UCL	214.8	95% Bootstrap-t UCL	526.2
95% Hall's Bootstrap UCL	728	95% Percentile Bootstrap UCL	234.8
95% BCA Bootstrap UCL	257.7		
90% Chebyshev(Mean, Sd) UCL	307.5	95% Chebyshev(Mean, Sd) UCL	392.9
97.5% Chebyshev(Mean, Sd) UCL	511.4	99% Chebyshev(Mean, Sd) UCL	744.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26.1	Mean	148.2
Maximum	421	Median	126
SD	143.5	Std. Error of Mean	58.59
Coefficient of Variation	0.968	Skewness	1.737
Mean of logged Data	4.606	SD of logged Data	1.007

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	266.2	95% Adjusted-CLT UCL (Chen-1995)	288.9
		95% Modified-t UCL (Johnson-1978)	273.2

Nonparametric Distribution Free UCLs

95% CLT UCL	244.5	95% Jackknife UCL	266.2
95% Standard Bootstrap UCL	238.9	95% Bootstrap-t UCL	353.8
95% Hall's Bootstrap UCL	662.6	95% Percentile Bootstrap UCL	245.5
95% BCA Bootstrap UCL	267.3		
90% Chebyshev(Mean, Sd) UCL	323.9	95% Chebyshev(Mean, Sd) UCL	403.6
97.5% Chebyshev(Mean, Sd) UCL	514.1	99% Chebyshev(Mean, Sd) UCL	731.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.6	Mean	196.7
Maximum	617	Median	149.5
SD	214.8	Std. Error of Mean	87.68
Coefficient of Variation	1.092	Skewness	2.01
Mean of logged Data	4.837	SD of logged Data	1.041

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	373.3	95% Adjusted-CLT UCL (Chen-1995)	417.8
		95% Modified-t UCL (Johnson-1978)	385.3

Nonparametric Distribution Free UCLs

95% CLT UCL	340.9	95% Jackknife UCL	373.3
95% Standard Bootstrap UCL	326.9	95% Bootstrap-t UCL	605.3
95% Hall's Bootstrap UCL	979.6	95% Percentile Bootstrap UCL	346.6
95% BCA Bootstrap UCL	381.3		
90% Chebyshev(Mean, Sd) UCL	459.7	95% Chebyshev(Mean, Sd) UCL	578.8
97.5% Chebyshev(Mean, Sd) UCL	744.2	99% Chebyshev(Mean, Sd) UCL	1069

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.4	Mean	102.4
Maximum	291	Median	86.45
SD	99.02	Std. Error of Mean	40.43
Coefficient of Variation	0.967	Skewness	1.757
Mean of logged Data	4.245	SD of logged Data	0.987

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	183.8	95% Adjusted-CLT UCL (Chen-1995)	199.8
		95% Modified-t UCL (Johnson-1978)	188.7

Nonparametric Distribution Free UCLs

95% CLT UCL	168.9	95% Jackknife UCL	183.8

95% Standard Bootstrap UCL	164.8	95% Bootstrap-t UCL	244.3
95% Hall's Bootstrap UCL	453.8	95% Percentile Bootstrap UCL	166.3
95% BCA Bootstrap UCL	183.3		
90% Chebyshev(Mean, Sd) UCL	223.6	95% Chebyshev(Mean, Sd) UCL	278.6
97.5% Chebyshev(Mean, Sd) UCL	354.8	99% Chebyshev(Mean, Sd) UCL	504.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.4	Mean	87.85
Maximum	293	Median	61.6
SD	103.6	Std. Error of Mean	42.31
Coefficient of Variation	1.18	Skewness	2.122
Mean of logged Data	3.977	SD of logged Data	1.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	173.1	95% Adjusted-CLT UCL (Chen-1995)	196.6
		95% Modified-t UCL (Johnson-1978)	179.2

Nonparametric Distribution Free UCLs

95% CLT UCL	157.4	95% Jackknife UCL	173.1
95% Standard Bootstrap UCL	153.4	95% Bootstrap-t UCL	308.3
95% Hall's Bootstrap UCL	483.6	95% Percentile Bootstrap UCL	163.4
95% BCA Bootstrap UCL	178.5		
90% Chebyshev(Mean, Sd) UCL	214.8	95% Chebyshev(Mean, Sd) UCL	272.3
97.5% Chebyshev(Mean, Sd) UCL	352.1	99% Chebyshev(Mean, Sd) UCL	508.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.8	Mean	136.9
Maximum	457	Median	96
SD	161.4	Std. Error of Mean	65.89
Coefficient of Variation	1.179	Skewness	2.143
Mean of logged Data	4.438	SD of logged Data	1.059

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	269.7	95% Adjusted-CLT UCL (Chen-1995)	306.9
		95% Modified-t UCL (Johnson-1978)	279.3

Nonparametric Distribution Free UCLs

95% CLT UCL	245.3	95% Jackknife UCL	269.7
95% Standard Bootstrap UCL	235.9	95% Bootstrap-t UCL	499.6
95% Hall's Bootstrap UCL	747.9	95% Percentile Bootstrap UCL	256.6
95% BCA Bootstrap UCL	279.7		
90% Chebyshev(Mean, Sd) UCL	334.6	95% Chebyshev(Mean, Sd) UCL	424.1
97.5% Chebyshev(Mean, Sd) UCL	548.4	99% Chebyshev(Mean, Sd) UCL	792.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.14	Mean	30.91
Maximum	99	Median	23.4
SD	34.67	Std. Error of Mean	14.15
Coefficient of Variation	1.122	Skewness	2.043
Mean of logged Data	2.967	SD of logged Data	1.06

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.43	95% Adjusted-CLT UCL (Chen-1995)	66.81
		95% Modified-t UCL (Johnson-1978)	61.4

Nonparametric Distribution Free UCLs

95% CLT UCL	54.19	95% Jackknife UCL	59.43
95% Standard Bootstrap UCL	52.25	95% Bootstrap-t UCL	98.33
95% Hall's Bootstrap UCL	159.9	95% Percentile Bootstrap UCL	55.76
95% BCA Bootstrap UCL	62.98		
90% Chebyshev(Mean, Sd) UCL	73.37	95% Chebyshev(Mean, Sd) UCL	92.61
97.5% Chebyshev(Mean, Sd) UCL	119.3	99% Chebyshev(Mean, Sd) UCL	171.7

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	28.2	Mean	222.6
Maximum	862	Median	117
SD	317.1	Std. Error of Mean	129.4
Coefficient of Variation	1.425	Skewness	2.319
Mean of logged Data	4.771	SD of logged Data	1.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	483.4	95% Adjusted-CLT UCL (Chen-1995)	566.4
		95% Modified-t UCL (Johnson-1978)	503.8

Nonparametric Distribution Free UCLs

95% CLT UCL	435.5	95% Jackknife UCL	483.4
95% Standard Bootstrap UCL	420.4	95% Bootstrap-t UCL	1352
95% Hall's Bootstrap UCL	1583	95% Percentile Bootstrap UCL	453.1
95% BCA Bootstrap UCL	502.2		
90% Chebyshev(Mean, Sd) UCL	610.9	95% Chebyshev(Mean, Sd) UCL	786.8
97.5% Chebyshev(Mean, Sd) UCL	1031	99% Chebyshev(Mean, Sd) UCL	1510

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.31	Mean	2.048
Maximum	4.08	Median	1.81
SD	1.031	Std. Error of Mean	0.421
Coefficient of Variation	0.503	Skewness	2.077
Mean of logged Data	0.636	SD of logged Data	0.414

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.896	95% Adjusted-CLT UCL (Chen-1995)	3.122
		95% Modified-t UCL (Johnson-1978)	2.956

Nonparametric Distribution Free UCLs

95% CLT UCL	2.741	95% Jackknife UCL	2.896
95% Standard Bootstrap UCL	2.667	95% Bootstrap-t UCL	4
95% Hall's Bootstrap UCL	5.965	95% Percentile Bootstrap UCL	2.782
95% BCA Bootstrap UCL	2.948		
90% Chebyshev(Mean, Sd) UCL	3.311	95% Chebyshev(Mean, Sd) UCL	3.883
97.5% Chebyshev(Mean, Sd) UCL	4.676	99% Chebyshev(Mean, Sd) UCL	6.236

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	23.7	Mean	125.1
Maximum	361	Median	103.7
SD	122.9	Std. Error of Mean	50.19
Coefficient of Variation	0.983	Skewness	1.82
Mean of logged Data	4.444	SD of logged Data	0.984

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	226.2	95% Adjusted-CLT UCL (Chen-1995)	247.5
		95% Modified-t UCL (Johnson-1978)	232.5

Nonparametric Distribution Free UCLs

95% CLT UCL	207.7	95% Jackknife UCL	226.2
95% Standard Bootstrap UCL	199.7	95% Bootstrap-t UCL	314.7
95% Hall's Bootstrap UCL	563.4	95% Percentile Bootstrap UCL	207.9
95% BCA Bootstrap UCL	231.4		
90% Chebyshev(Mean, Sd) UCL	275.7	95% Chebyshev(Mean, Sd) UCL	343.9
97.5% Chebyshev(Mean, Sd) UCL	438.6	99% Chebyshev(Mean, Sd) UCL	624.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.96	Mean	5.092
Maximum	8.77	Median	4.78
SD	2.256	Std. Error of Mean	0.921
Coefficient of Variation	0.443	Skewness	0.822
Mean of logged Data	1.548	SD of logged Data	0.434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	6.947	95% Adjusted-CLT UCL (Chen-1995)	6.936
		95% Modified-t UCL (Johnson-1978)	6.999

Nonparametric Distribution Free UCLs

95% CLT UCL	6.606	95% Jackknife UCL	6.947
95% Standard Bootstrap UCL	6.479	95% Bootstrap-t UCL	7.835
95% Hall's Bootstrap UCL	6.588	95% Percentile Bootstrap UCL	6.51
95% BCA Bootstrap UCL	6.587		
90% Chebyshev(Mean, Sd) UCL	7.854	95% Chebyshev(Mean, Sd) UCL	9.105
97.5% Chebyshev(Mean, Sd) UCL	10.84	99% Chebyshev(Mean, Sd) UCL	14.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.5	Mean	102.3
Maximum	420	Median	46.4
SD	156.8	Std. Error of Mean	64.03
Coefficient of Variation	1.533	Skewness	2.365
Mean of logged Data	3.917	SD of logged Data	1.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	231.3	95% Adjusted-CLT UCL (Chen-1995)	273.7
		95% Modified-t UCL (Johnson-1978)	241.7

Nonparametric Distribution Free UCLs

95% CLT UCL	207.6	95% Jackknife UCL	231.3
95% Standard Bootstrap UCL	198.2	95% Bootstrap-t UCL	827.8
95% Hall's Bootstrap UCL	805.3	95% Percentile Bootstrap UCL	226.9
95% BCA Bootstrap UCL	242.9		
90% Chebyshev(Mean, Sd) UCL	294.4	95% Chebyshev(Mean, Sd) UCL	381.4
97.5% Chebyshev(Mean, Sd) UCL	502.2	99% Chebyshev(Mean, Sd) UCL	739.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	27.6	Mean	199.3
Maximum	729	Median	118.5
SD	264	Std. Error of Mean	107.8
Coefficient of Variation	1.325	Skewness	2.265
Mean of logged Data	4.727	SD of logged Data	1.122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	416.4	95% Adjusted-CLT UCL (Chen-1995)	483
		95% Modified-t UCL (Johnson-1978)	433.1

Nonparametric Distribution Free UCLs

95% CLT UCL	376.6	95% Jackknife UCL	416.4
95% Standard Bootstrap UCL	361.1	95% Bootstrap-t UCL	970.5
95% Hall's Bootstrap UCL	1279	95% Percentile Bootstrap UCL	400
95% BCA Bootstrap UCL	429.5		
90% Chebyshev(Mean, Sd) UCL	522.6	95% Chebyshev(Mean, Sd) UCL	669
97.5% Chebyshev(Mean, Sd) UCL	872.3	99% Chebyshev(Mean, Sd) UCL	1272

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.55	Mean	7.075
Maximum	13.2	Median	5.9
SD	3.017	Std. Error of Mean	1.232
Coefficient of Variation	0.426	Skewness	2.392
Mean of logged Data	1.901	SD of logged Data	0.337

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.557	95% Adjusted-CLT UCL (Chen-1995)	10.39
		95% Modified-t UCL (Johnson-1978)	9.757

Nonparametric Distribution Free UCLs

95% CLT UCL	9.101	95% Jackknife UCL	9.557
95% Standard Bootstrap UCL	8.932	95% Bootstrap-t UCL	21.78
95% Hall's Bootstrap UCL	23.67	95% Percentile Bootstrap UCL	9.408
95% BCA Bootstrap UCL	10.67		
90% Chebyshev(Mean, Sd) UCL	10.77	95% Chebyshev(Mean, Sd) UCL	12.44
97.5% Chebyshev(Mean, Sd) UCL	14.77	99% Chebyshev(Mean, Sd) UCL	19.33

Suggested UCL to Use

95% Student's-t UCL	9.557	or 95% Modified-t UCL	9.757

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.6	Mean	55.38
Maximum	67.3	Median	54.7
SD	11.22	Std. Error of Mean	4.582
Coefficient of Variation	0.203	Skewness	0.0397
Mean of logged Data	3.997	SD of logged Data	0.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.62	95% Adjusted-CLT UCL (Chen-1995)	63
		95% Modified-t UCL (Johnson-1978)	64.63

Nonparametric Distribution Free UCLs

95% CLT UCL	62.92	95% Jackknife UCL	64.62

95% Standard Bootstrap UCL	62.26	95% Bootstrap-t UCL	65.83
95% Hall's Bootstrap UCL	59.21	95% Percentile Bootstrap UCL	62.4
95% BCA Bootstrap UCL	62.25		
90% Chebyshev(Mean, Sd) UCL	69.13	95% Chebyshev(Mean, Sd) UCL	75.36
97.5% Chebyshev(Mean, Sd) UCL	84	99% Chebyshev(Mean, Sd) UCL	101

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.16/12/2020 7:19:10 AM
From File	Table 1Kingman APN 32404527 - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	1
Minimum	1.74	Mean	3.008
Maximum	4.61	Median	2.775
SD	1.149	Std. Error of Mean	0.469
Coefficient of Variation	0.382	Skewness	0.369
Mean of logged Data	1.039	SD of logged Data	0.389

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.954	95% Adjusted-CLT UCL (Chen-1995)	3.856
		95% Modified-t UCL (Johnson-1978)	3.965

Nonparametric Distribution Free UCLs

95% CLT UCL	3.78	95% Jackknife UCL	3.954
95% Standard Bootstrap UCL	3.727	95% Bootstrap-t UCL	4.476
95% Hall's Bootstrap UCL	3.661	95% Percentile Bootstrap UCL	3.727
95% BCA Bootstrap UCL	3.77		
90% Chebyshev(Mean, Sd) UCL	4.416	95% Chebyshev(Mean, Sd) UCL	5.053
97.5% Chebyshev(Mean, Sd) UCL	5.938	99% Chebyshev(Mean, Sd) UCL	7.676

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1

Minimum	1.22	Mean	4.132
Maximum	8.56	Median	2.975
SD	2.9	Std. Error of Mean	1.184
Coefficient of Variation	0.702	Skewness	0.868
Mean of logged Data	1.205	SD of logged Data	0.728

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.517	95% Adjusted-CLT UCL (Chen-1995)	6.527
		95% Modified-t UCL (Johnson-1978)	6.587

Nonparametric Distribution Free UCLs

95% CLT UCL	6.079	95% Jackknife UCL	6.517
95% Standard Bootstrap UCL	5.94	95% Bootstrap-t UCL	10.56
95% Hall's Bootstrap UCL	23.08	95% Percentile Bootstrap UCL	5.925
95% BCA Bootstrap UCL	6.19		
90% Chebyshev(Mean, Sd) UCL	7.683	95% Chebyshev(Mean, Sd) UCL	9.292
97.5% Chebyshev(Mean, Sd) UCL	11.52	99% Chebyshev(Mean, Sd) UCL	15.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	2
Minimum	3.5	Mean	11.41
Maximum	30.2	Median	8.15
SD	10.7	Std. Error of Mean	4.784
Coefficient of Variation	0.938	Skewness	2.032
Mean of logged Data	2.158	SD of logged Data	0.785

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	21.61	95% Adjusted-CLT UCL (Chen-1995)	23.92
		95% Modified-t UCL (Johnson-1978)	22.33

Nonparametric Distribution Free UCLs

95% CLT UCL	19.28	95% Jackknife UCL	21.61
95% Standard Bootstrap UCL	18.56	95% Bootstrap-t UCL	52.97
95% Hall's Bootstrap UCL	65.14	95% Percentile Bootstrap UCL	20.12
95% BCA Bootstrap UCL	21.16		
90% Chebyshev(Mean, Sd) UCL	25.76	95% Chebyshev(Mean, Sd) UCL	32.26
97.5% Chebyshev(Mean, Sd) UCL	41.28	99% Chebyshev(Mean, Sd) UCL	59.01

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	37.2	Mean	83.38
Maximum	164	Median	66.85
SD	46.2	Std. Error of Mean	18.86
Coefficient of Variation	0.554	Skewness	1.257
Mean of logged Data	4.306	SD of logged Data	0.523

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	121.4	95% Adjusted-CLT UCL (Chen-1995)	124.8
		95% Modified-t UCL (Johnson-1978)	123

Nonparametric Distribution Free UCLs

95% CLT UCL	114.4	95% Jackknife UCL	121.4
95% Standard Bootstrap UCL	111.8	95% Bootstrap-t UCL	184
95% Hall's Bootstrap UCL	347.9	95% Percentile Bootstrap UCL	111.9
95% BCA Bootstrap UCL	115.9		
90% Chebyshev(Mean, Sd) UCL	140	95% Chebyshev(Mean, Sd) UCL	165.6
97.5% Chebyshev(Mean, Sd) UCL	201.2	99% Chebyshev(Mean, Sd) UCL	271

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	46.7	Mean	108.2
Maximum	204	Median	90.4
SD	56.71	Std. Error of Mean	23.15
Coefficient of Variation	0.524	Skewness	1.054
Mean of logged Data	4.573	SD of logged Data	0.516

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	154.8	95% Adjusted-CLT UCL (Chen-1995)	156.9
		95% Modified-t UCL (Johnson-1978)	156.5

Nonparametric Distribution Free UCLs

95% CLT UCL	146.2	95% Jackknife UCL	154.8
95% Standard Bootstrap UCL	143.2	95% Bootstrap-t UCL	210.7
95% Hall's Bootstrap UCL	469.6	95% Percentile Bootstrap UCL	146.1
95% BCA Bootstrap UCL	147.8		
90% Chebyshev(Mean, Sd) UCL	177.6	95% Chebyshev(Mean, Sd) UCL	209.1
97.5% Chebyshev(Mean, Sd) UCL	252.8	99% Chebyshev(Mean, Sd) UCL	338.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	65.9	Mean	135.7
Maximum	249	Median	113.5
SD	65.7	Std. Error of Mean	26.82
Coefficient of Variation	0.484	Skewness	1.16
Mean of logged Data	4.819	SD of logged Data	0.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	189.7	95% Adjusted-CLT UCL (Chen-1995)	193.4
		95% Modified-t UCL (Johnson-1978)	191.8

Nonparametric Distribution Free UCLs

95% CLT UCL	179.8	95% Jackknife UCL	189.7
95% Standard Bootstrap UCL	175.7	95% Bootstrap-t UCL	259.5
95% Hall's Bootstrap UCL	527.3	95% Percentile Bootstrap UCL	178
95% BCA Bootstrap UCL	189.2		
90% Chebyshev(Mean, Sd) UCL	216.1	95% Chebyshev(Mean, Sd) UCL	252.6
97.5% Chebyshev(Mean, Sd) UCL	303.2	99% Chebyshev(Mean, Sd) UCL	402.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	40	Mean	86.7
Maximum	157	Median	73.25
SD	41.52	Std. Error of Mean	16.95
Coefficient of Variation	0.479	Skewness	1.03
Mean of logged Data	4.37	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	120.9	95% Adjusted-CLT UCL (Chen-1995)	122.2
		95% Modified-t UCL (Johnson-1978)	122

Nonparametric Distribution Free UCLs

95% CLT UCL	114.6	95% Jackknife UCL	120.9

95% Standard Bootstrap UCL	112.1	95% Bootstrap-t UCL	154.6
95% Hall's Bootstrap UCL	350.8	95% Percentile Bootstrap UCL	114.1
95% BCA Bootstrap UCL	119.8		
90% Chebyshev(Mean, Sd) UCL	137.6	95% Chebyshev(Mean, Sd) UCL	160.6
97.5% Chebyshev(Mean, Sd) UCL	192.6	99% Chebyshev(Mean, Sd) UCL	255.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	26.7	Mean	57.42
Maximum	101	Median	49.45
SD	26.62	Std. Error of Mean	10.87
Coefficient of Variation	0.464	Skewness	0.881
Mean of logged Data	3.962	SD of logged Data	0.464

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	79.31	95% Adjusted-CLT UCL (Chen-1995)	79.47
		95% Modified-t UCL (Johnson-1978)	79.97

Nonparametric Distribution Free UCLs

95% CLT UCL	75.29	95% Jackknife UCL	79.31
95% Standard Bootstrap UCL	73.84	95% Bootstrap-t UCL	103.2
95% Hall's Bootstrap UCL	254.4	95% Percentile Bootstrap UCL	74.6
95% BCA Bootstrap UCL	75.37		
90% Chebyshev(Mean, Sd) UCL	90.02	95% Chebyshev(Mean, Sd) UCL	104.8
97.5% Chebyshev(Mean, Sd) UCL	125.3	99% Chebyshev(Mean, Sd) UCL	165.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	61.9	Mean	122.5
Maximum	221	Median	101.5
SD	59.23	Std. Error of Mean	24.18
Coefficient of Variation	0.484	Skewness	1.06
Mean of logged Data	4.717	SD of logged Data	0.462

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	171.2	95% Adjusted-CLT UCL (Chen-1995)	173.5
		95% Modified-t UCL (Johnson-1978)	173

Nonparametric Distribution Free UCLs

95% CLT UCL	162.3	95% Jackknife UCL	171.2
95% Standard Bootstrap UCL	158.4	95% Bootstrap-t UCL	249.7
95% Hall's Bootstrap UCL	504	95% Percentile Bootstrap UCL	162.3
95% BCA Bootstrap UCL	168		
90% Chebyshev(Mean, Sd) UCL	195	95% Chebyshev(Mean, Sd) UCL	227.9
97.5% Chebyshev(Mean, Sd) UCL	273.5	99% Chebyshev(Mean, Sd) UCL	363.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	9.62	Mean	20.97
Maximum	37.7	Median	17.3
SD	10.29	Std. Error of Mean	4.201
Coefficient of Variation	0.491	Skewness	0.932
Mean of logged Data	2.945	SD of logged Data	0.484

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.43	95% Adjusted-CLT UCL (Chen-1995)	29.59
		95% Modified-t UCL (Johnson-1978)	29.7

Nonparametric Distribution Free UCLs

95% CLT UCL	27.88	95% Jackknife UCL	29.43
95% Standard Bootstrap UCL	27.16	95% Bootstrap-t UCL	41.13
95% Hall's Bootstrap UCL	93.36	95% Percentile Bootstrap UCL	28.02
95% BCA Bootstrap UCL	28.52		
90% Chebyshev(Mean, Sd) UCL	33.57	95% Chebyshev(Mean, Sd) UCL	39.28
97.5% Chebyshev(Mean, Sd) UCL	47.2	99% Chebyshev(Mean, Sd) UCL	62.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	63.9	Mean	139.1
Maximum	282	Median	113
SD	77.75	Std. Error of Mean	31.74
Coefficient of Variation	0.559	Skewness	1.526
Mean of logged Data	4.822	SD of logged Data	0.509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	203.1	95% Adjusted-CLT UCL (Chen-1995)	212.5
		95% Modified-t UCL (Johnson-1978)	206.4

Nonparametric Distribution Free UCLs

95% CLT UCL	191.3	95% Jackknife UCL	203.1
95% Standard Bootstrap UCL	186.9	95% Bootstrap-t UCL	300.1
95% Hall's Bootstrap UCL	525.8	95% Percentile Bootstrap UCL	189
95% BCA Bootstrap UCL	206		
90% Chebyshev(Mean, Sd) UCL	234.4	95% Chebyshev(Mean, Sd) UCL	277.5
97.5% Chebyshev(Mean, Sd) UCL	337.4	99% Chebyshev(Mean, Sd) UCL	455

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	1.14	Mean	2.219
Maximum	4.99	Median	1.66
SD	1.456	Std. Error of Mean	0.594
Coefficient of Variation	0.656	Skewness	1.812
Mean of logged Data	0.654	SD of logged Data	0.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.417	95% Adjusted-CLT UCL (Chen-1995)	3.667
		95% Modified-t UCL (Johnson-1978)	3.49

Nonparametric Distribution Free UCLs

95% CLT UCL	3.197	95% Jackknife UCL	3.417
95% Standard Bootstrap UCL	3.122	95% Bootstrap-t UCL	5.282
95% Hall's Bootstrap UCL	7.148	95% Percentile Bootstrap UCL	3.238
95% BCA Bootstrap UCL	3.538		
90% Chebyshev(Mean, Sd) UCL	4.002	95% Chebyshev(Mean, Sd) UCL	4.81
97.5% Chebyshev(Mean, Sd) UCL	5.931	99% Chebyshev(Mean, Sd) UCL	8.133

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1

Minimum	41.1	Mean	88.7
Maximum	160	Median	74.55
SD	42.73	Std. Error of Mean	17.44
Coefficient of Variation	0.482	Skewness	0.991
Mean of logged Data	4.392	SD of logged Data	0.474

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	123.9	95% Adjusted-CLT UCL (Chen-1995)	124.9
		95% Modified-t UCL (Johnson-1978)	125

Nonparametric Distribution Free UCLs

95% CLT UCL	117.4	95% Jackknife UCL	123.9
95% Standard Bootstrap UCL	115.4	95% Bootstrap-t UCL	167
95% Hall's Bootstrap UCL	366.2	95% Percentile Bootstrap UCL	116.1
95% BCA Bootstrap UCL	118.3		
90% Chebyshev(Mean, Sd) UCL	141	95% Chebyshev(Mean, Sd) UCL	164.7
97.5% Chebyshev(Mean, Sd) UCL	197.6	99% Chebyshev(Mean, Sd) UCL	262.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	3.33	Mean	5.178
Maximum	8.57	Median	4.77
SD	2.057	Std. Error of Mean	0.84
Coefficient of Variation	0.397	Skewness	0.901
Mean of logged Data	1.582	SD of logged Data	0.382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	6.87	95% Adjusted-CLT UCL (Chen-1995)	6.889
		95% Modified-t UCL (Johnson-1978)	6.922

Nonparametric Distribution Free UCLs

95% CLT UCL	6.559	95% Jackknife UCL	6.87
95% Standard Bootstrap UCL	6.468	95% Bootstrap-t UCL	7.398
95% Hall's Bootstrap UCL	6.939	95% Percentile Bootstrap UCL	6.453
95% BCA Bootstrap UCL	6.627		
90% Chebyshev(Mean, Sd) UCL	7.697	95% Chebyshev(Mean, Sd) UCL	8.838
97.5% Chebyshev(Mean, Sd) UCL	10.42	99% Chebyshev(Mean, Sd) UCL	13.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	27	Mean	65.87
Maximum	145	Median	50.75
SD	42.21	Std. Error of Mean	17.23
Coefficient of Variation	0.641	Skewness	1.675
Mean of logged Data	4.042	SD of logged Data	0.573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	100.6	95% Adjusted-CLT UCL (Chen-1995)	106.8
		95% Modified-t UCL (Johnson-1978)	102.6

Nonparametric Distribution Free UCLs

95% CLT UCL	94.21	95% Jackknife UCL	100.6
95% Standard Bootstrap UCL	91.32	95% Bootstrap-t UCL	164.7
95% Hall's Bootstrap UCL	278.1	95% Percentile Bootstrap UCL	94.78
95% BCA Bootstrap UCL	101.5		
90% Chebyshev(Mean, Sd) UCL	117.6	95% Chebyshev(Mean, Sd) UCL	141
97.5% Chebyshev(Mean, Sd) UCL	173.5	99% Chebyshev(Mean, Sd) UCL	237.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	67	Mean	140.2
Maximum	274	Median	112.5
SD	75.15	Std. Error of Mean	30.68
Coefficient of Variation	0.536	Skewness	1.365
Mean of logged Data	4.836	SD of logged Data	0.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	202	95% Adjusted-CLT UCL (Chen-1995)	209
		95% Modified-t UCL (Johnson-1978)	204.9

Nonparametric Distribution Free UCLs

95% CLT UCL	190.7	95% Jackknife UCL	202
95% Standard Bootstrap UCL	186.7	95% Bootstrap-t UCL	306.1
95% Hall's Bootstrap UCL	574.6	95% Percentile Bootstrap UCL	191.4
95% BCA Bootstrap UCL	203.5		
90% Chebyshev(Mean, Sd) UCL	232.3	95% Chebyshev(Mean, Sd) UCL	274
97.5% Chebyshev(Mean, Sd) UCL	331.8	99% Chebyshev(Mean, Sd) UCL	445.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	3.755	Mean	9.384
Maximum	11.3	Median	10.4
SD	2.888	Std. Error of Mean	1.179
Coefficient of Variation	0.308	Skewness	-1.996
Mean of logged Data	2.178	SD of logged Data	0.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.76	95% Adjusted-CLT UCL (Chen-1995)	10.3
		95% Modified-t UCL (Johnson-1978)	11.6

Nonparametric Distribution Free UCLs

95% CLT UCL	11.32	95% Jackknife UCL	11.76
95% Standard Bootstrap UCL	11.15	95% Bootstrap-t UCL	10.96
95% Hall's Bootstrap UCL	10.54	95% Percentile Bootstrap UCL	10.91
95% BCA Bootstrap UCL	10.7		
90% Chebyshev(Mean, Sd) UCL	12.92	95% Chebyshev(Mean, Sd) UCL	14.52
97.5% Chebyshev(Mean, Sd) UCL	16.75	99% Chebyshev(Mean, Sd) UCL	21.12

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	8.52	Mean	10.62
Maximum	11.9	Median	10.8
SD	1.19	Std. Error of Mean	0.486
Coefficient of Variation	0.112	Skewness	-1.162
Mean of logged Data	2.357	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.6	95% Adjusted-CLT UCL (Chen-1995)	11.17
		95% Modified-t UCL (Johnson-1978)	11.56

Nonparametric Distribution Free UCLs

95% CLT UCL	11.42	95% Jackknife UCL	11.6
95% Standard Bootstrap UCL	11.35	95% Bootstrap-t UCL	11.34
95% Hall's Bootstrap UCL	11.2	95% Percentile Bootstrap UCL	11.28
95% BCA Bootstrap UCL	11.22		
90% Chebyshev(Mean, Sd) UCL	12.08	95% Chebyshev(Mean, Sd) UCL	12.74
97.5% Chebyshev(Mean, Sd) UCL	13.65	99% Chebyshev(Mean, Sd) UCL	15.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	1
Minimum	32.9	Mean	39.22
Maximum	44.7	Median	39.45
SD	3.832	Std. Error of Mean	1.564
Coefficient of Variation	0.0977	Skewness	-0.454
Mean of logged Data	3.665	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.37	95% Adjusted-CLT UCL (Chen-1995)	41.48
		95% Modified-t UCL (Johnson-1978)	42.32

Nonparametric Distribution Free UCLs

95% CLT UCL	41.79	95% Jackknife UCL	42.37
95% Standard Bootstrap UCL	41.59	95% Bootstrap-t UCL	42.04
95% Hall's Bootstrap UCL	41.92	95% Percentile Bootstrap UCL	41.47
95% BCA Bootstrap UCL	41.27		
90% Chebyshev(Mean, Sd) UCL	43.91	95% Chebyshev(Mean, Sd) UCL	46.04
97.5% Chebyshev(Mean, Sd) UCL	48.99	99% Chebyshev(Mean, Sd) UCL	54.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:35:19 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404550) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.865	Mean	6.109
Maximum	9.85	Median	5.805
SD	2.028	Std. Error of Mean	0.828
Coefficient of Variation	0.332	Skewness	1.426
Mean of logged Data	1.768	SD of logged Data	0.309

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.777	95% Adjusted-CLT UCL (Chen-1995)	7.985
		95% Modified-t UCL (Johnson-1978)	7.857

Nonparametric Distribution Free UCLs

95% CLT UCL	7.471	95% Jackknife UCL	7.777
95% Standard Bootstrap UCL	7.365	95% Bootstrap-t UCL	8.618
95% Hall's Bootstrap UCL	14.68	95% Percentile Bootstrap UCL	7.419
95% BCA Bootstrap UCL	7.669		
90% Chebyshev(Mean, Sd) UCL	8.593	95% Chebyshev(Mean, Sd) UCL	9.717
97.5% Chebyshev(Mean, Sd) UCL	11.28	99% Chebyshev(Mean, Sd) UCL	14.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	2.97	Mean	7.208
Maximum	10.7	Median	7.765
SD	2.914	Std. Error of Mean	1.19
Coefficient of Variation	0.404	Skewness	-0.479
Mean of logged Data	1.889	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.606	95% Adjusted-CLT UCL (Chen-1995)	8.917
		95% Modified-t UCL (Johnson-1978)	9.567

Nonparametric Distribution Free UCLs

95% CLT UCL	9.165	95% Jackknife UCL	9.606
95% Standard Bootstrap UCL	8.992	95% Bootstrap-t UCL	9.258
95% Hall's Bootstrap UCL	8.665	95% Percentile Bootstrap UCL	8.96
95% BCA Bootstrap UCL	8.777		
90% Chebyshev(Mean, Sd) UCL	10.78	95% Chebyshev(Mean, Sd) UCL	12.39
97.5% Chebyshev(Mean, Sd) UCL	14.64	99% Chebyshev(Mean, Sd) UCL	19.05

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	21.25
Maximum	24.2	Median	22.65
SD	4.638	Std. Error of Mean	1.894
Coefficient of Variation	0.218	Skewness	-2.204
Mean of logged Data	3.03	SD of logged Data	0.27

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.07	95% Adjusted-CLT UCL (Chen-1995)	22.54
		95% Modified-t UCL (Johnson-1978)	24.78

Nonparametric Distribution Free UCLs

95% CLT UCL	24.36	95% Jackknife UCL	25.07
95% Standard Bootstrap UCL	24.03	95% Bootstrap-t UCL	23.77
95% Hall's Bootstrap UCL	22.97	95% Percentile Bootstrap UCL	23.52
95% BCA Bootstrap UCL	23.28		
90% Chebyshev(Mean, Sd) UCL	26.93	95% Chebyshev(Mean, Sd) UCL	29.5
97.5% Chebyshev(Mean, Sd) UCL	33.08	99% Chebyshev(Mean, Sd) UCL	40.09

Suggested UCL to Use

95% Student's-t UCL	25.07	or 95% Modified-t UCL	24.78

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	71.1	Mean	200
Maximum	409	Median	152.5
SD	129.6	Std. Error of Mean	52.89
Coefficient of Variation	0.648	Skewness	0.993
Mean of logged Data	5.125	SD of logged Data	0.646

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	306.6	95% Adjusted-CLT UCL (Chen-1995)	309.9
		95% Modified-t UCL (Johnson-1978)	310.2

Nonparametric Distribution Free UCLs

95% CLT UCL	287	95% Jackknife UCL	306.6
95% Standard Bootstrap UCL	278.3	95% Bootstrap-t UCL	491.8
95% Hall's Bootstrap UCL	1060	95% Percentile Bootstrap UCL	285.5

95% BCA Bootstrap UCL	292		
90% Chebyshev(Mean, Sd) UCL	358.7	95% Chebyshev(Mean, Sd) UCL	430.6
97.5% Chebyshev(Mean, Sd) UCL	530.3	99% Chebyshev(Mean, Sd) UCL	726.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	86.6	Mean	275.4
Maximum	681	Median	195.5
SD	216.2	Std. Error of Mean	88.27
Coefficient of Variation	0.785	Skewness	1.7
Mean of logged Data	5.397	SD of logged Data	0.711

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	453.3	95% Adjusted-CLT UCL (Chen-1995)	486.1
		95% Modified-t UCL (Johnson-1978)	463.5

Nonparametric Distribution Free UCLs

95% CLT UCL	420.6	95% Jackknife UCL	453.3
95% Standard Bootstrap UCL	411.5	95% Bootstrap-t UCL	787.2
95% Hall's Bootstrap UCL	1313	95% Percentile Bootstrap UCL	426.9
95% BCA Bootstrap UCL	455.3		
90% Chebyshev(Mean, Sd) UCL	540.2	95% Chebyshev(Mean, Sd) UCL	660.2
97.5% Chebyshev(Mean, Sd) UCL	826.7	99% Chebyshev(Mean, Sd) UCL	1154

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	112	Mean	339.5
Maximum	853	Median	232.5
SD	271	Std. Error of Mean	110.6
Coefficient of Variation	0.798	Skewness	1.783
Mean of logged Data	5.607	SD of logged Data	0.701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	562.4	95% Adjusted-CLT UCL (Chen-1995)	607.5
		95% Modified-t UCL (Johnson-1978)	575.8

Nonparametric Distribution Free UCLs

95% CLT UCL	521.5	95% Jackknife UCL	562.4
95% Standard Bootstrap UCL	506.8	95% Bootstrap-t UCL	1127
95% Hall's Bootstrap UCL	1669	95% Percentile Bootstrap UCL	535.5
95% BCA Bootstrap UCL	597.3		
90% Chebyshev(Mean, Sd) UCL	671.4	95% Chebyshev(Mean, Sd) UCL	821.7
97.5% Chebyshev(Mean, Sd) UCL	1030	99% Chebyshev(Mean, Sd) UCL	1440

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	70.7	Mean	207.5
Maximum	548	Median	145.5
SD	173.8	Std. Error of Mean	70.94
Coefficient of Variation	0.838	Skewness	2.04
Mean of logged Data	5.111	SD of logged Data	0.693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	350.4	95% Adjusted-CLT UCL (Chen-1995)	387.3
		95% Modified-t UCL (Johnson-1978)	360.2

Nonparametric Distribution Free UCLs

95% CLT UCL	324.1	95% Jackknife UCL	350.4
95% Standard Bootstrap UCL	314.6	95% Bootstrap-t UCL	690.8
95% Hall's Bootstrap UCL	958.8	95% Percentile Bootstrap UCL	331.8
95% BCA Bootstrap UCL	366.3		
90% Chebyshev(Mean, Sd) UCL	420.3	95% Chebyshev(Mean, Sd) UCL	516.7
97.5% Chebyshev(Mean, Sd) UCL	650.4	99% Chebyshev(Mean, Sd) UCL	913.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.8	Mean	145.2
Maximum	373	Median	102.5
SD	119.3	Std. Error of Mean	48.71
Coefficient of Variation	0.822	Skewness	1.825
Mean of logged Data	4.744	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	243.4	95% Adjusted-CLT UCL (Chen-1995)	264.1
		95% Modified-t UCL (Johnson-1978)	249.4

Nonparametric Distribution Free UCLs

95% CLT UCL	225.3	95% Jackknife UCL	243.4
95% Standard Bootstrap UCL	220.8	95% Bootstrap-t UCL	427.9
95% Hall's Bootstrap UCL	679.3	95% Percentile Bootstrap UCL	226.2
95% BCA Bootstrap UCL	259.7		
90% Chebyshev(Mean, Sd) UCL	291.3	95% Chebyshev(Mean, Sd) UCL	357.5
97.5% Chebyshev(Mean, Sd) UCL	449.4	99% Chebyshev(Mean, Sd) UCL	629.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	98.1	Mean	270.5
Maximum	599	Median	218.5
SD	179.9	Std. Error of Mean	73.46
Coefficient of Variation	0.665	Skewness	1.474
Mean of logged Data	5.433	SD of logged Data	0.628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	418.5	95% Adjusted-CLT UCL (Chen-1995)	438.6
		95% Modified-t UCL (Johnson-1978)	425.9

Nonparametric Distribution Free UCLs

95% CLT UCL	391.3	95% Jackknife UCL	418.5
95% Standard Bootstrap UCL	379.7	95% Bootstrap-t UCL	643.2
95% Hall's Bootstrap UCL	1117	95% Percentile Bootstrap UCL	386.7
95% BCA Bootstrap UCL	427.8		
90% Chebyshev(Mean, Sd) UCL	490.9	95% Chebyshev(Mean, Sd) UCL	590.7
97.5% Chebyshev(Mean, Sd) UCL	729.3	99% Chebyshev(Mean, Sd) UCL	1001

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.7	Mean	52.47
Maximum	138	Median	35.9

SD	44.31	Std. Error of Mean	18.09
Coefficient of Variation	0.845	Skewness	1.918
Mean of logged Data	3.722	SD of logged Data	0.724

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	88.92	95% Adjusted-CLT UCL (Chen-1995)	97.36
		95% Modified-t UCL (Johnson-1978)	91.28

Nonparametric Distribution Free UCLs

95% CLT UCL	82.22	95% Jackknife UCL	88.92
95% Standard Bootstrap UCL	79.58	95% Bootstrap-t UCL	176.2
95% Hall's Bootstrap UCL	255.9	95% Percentile Bootstrap UCL	82.5
95% BCA Bootstrap UCL	89.8		
90% Chebyshev(Mean, Sd) UCL	106.7	95% Chebyshev(Mean, Sd) UCL	131.3
97.5% Chebyshev(Mean, Sd) UCL	165.4	99% Chebyshev(Mean, Sd) UCL	232.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	129	Mean	263.2
Maximum	400	Median	243.5
SD	101.2	Std. Error of Mean	41.32
Coefficient of Variation	0.385	Skewness	0.247
Mean of logged Data	5.506	SD of logged Data	0.411

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	346.4	95% Adjusted-CLT UCL (Chen-1995)	335.6
		95% Modified-t UCL (Johnson-1978)	347.1

Nonparametric Distribution Free UCLs

95% CLT UCL	331.1	95% Jackknife UCL	346.4
95% Standard Bootstrap UCL	324.6	95% Bootstrap-t UCL	386.8
95% Hall's Bootstrap UCL	456	95% Percentile Bootstrap UCL	322.8
95% BCA Bootstrap UCL	328.8		
90% Chebyshev(Mean, Sd) UCL	387.1	95% Chebyshev(Mean, Sd) UCL	443.3
97.5% Chebyshev(Mean, Sd) UCL	521.2	99% Chebyshev(Mean, Sd) UCL	674.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.25	Mean	5.437
Maximum	13.15	Median	4.295
SD	3.875	Std. Error of Mean	1.582
Coefficient of Variation	0.713	Skewness	2.165
Mean of logged Data	1.536	SD of logged Data	0.574

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.624	95% Adjusted-CLT UCL (Chen-1995)	9.532
		95% Modified-t UCL (Johnson-1978)	8.857

Nonparametric Distribution Free UCLs

95% CLT UCL	8.038	95% Jackknife UCL	8.624
95% Standard Bootstrap UCL	7.786	95% Bootstrap-t UCL	20.76
95% Hall's Bootstrap UCL	22.92	95% Percentile Bootstrap UCL	8.332
95% BCA Bootstrap UCL	8.807		
90% Chebyshev(Mean, Sd) UCL	10.18	95% Chebyshev(Mean, Sd) UCL	12.33
97.5% Chebyshev(Mean, Sd) UCL	15.31	99% Chebyshev(Mean, Sd) UCL	21.18

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	72.7	Mean	218.5
Maximum	573	Median	149
SD	182.8	Std. Error of Mean	74.64
Coefficient of Variation	0.837	Skewness	1.957
Mean of logged Data	5.157	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	368.9	95% Adjusted-CLT UCL (Chen-1995)	404.9
		95% Modified-t UCL (Johnson-1978)	378.8

Nonparametric Distribution Free UCLs

95% CLT UCL	341.2	95% Jackknife UCL	368.9
95% Standard Bootstrap UCL	329.9	95% Bootstrap-t UCL	760.8
95% Hall's Bootstrap UCL	1064	95% Percentile Bootstrap UCL	344.1
95% BCA Bootstrap UCL	378.7		
90% Chebyshev(Mean, Sd) UCL	442.4	95% Chebyshev(Mean, Sd) UCL	543.8
97.5% Chebyshev(Mean, Sd) UCL	684.6	99% Chebyshev(Mean, Sd) UCL	961.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.92	Mean	8.027
Maximum	9.85	Median	8.205
SD	1.524	Std. Error of Mean	0.622
Coefficient of Variation	0.19	Skewness	-0.283
Mean of logged Data	2.067	SD of logged Data	0.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.28	95% Adjusted-CLT UCL (Chen-1995)	8.973
		95% Modified-t UCL (Johnson-1978)	9.268

Nonparametric Distribution Free UCLs

95% CLT UCL	9.05	95% Jackknife UCL	9.28
95% Standard Bootstrap UCL	8.958	95% Bootstrap-t UCL	9.215
95% Hall's Bootstrap UCL	8.831	95% Percentile Bootstrap UCL	8.918
95% BCA Bootstrap UCL	8.918		
90% Chebyshev(Mean, Sd) UCL	9.893	95% Chebyshev(Mean, Sd) UCL	10.74
97.5% Chebyshev(Mean, Sd) UCL	11.91	99% Chebyshev(Mean, Sd) UCL	14.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	61	Mean	99.25
Maximum	115	Median	106
SD	20.32	Std. Error of Mean	8.294
Coefficient of Variation	0.205	Skewness	-1.715
Mean of logged Data	4.576	SD of logged Data	0.24

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	116	95% Adjusted-CLT UCL (Chen-1995)	106.7
		95% Modified-t UCL (Johnson-1978)	115

Nonparametric Distribution Free UCLs

95% CLT UCL	112.9	95% Jackknife UCL	116
95% Standard Bootstrap UCL	111.8	95% Bootstrap-t UCL	110.8
95% Hall's Bootstrap UCL	107.9	95% Percentile Bootstrap UCL	110.3
95% BCA Bootstrap UCL	108.3		
90% Chebyshev(Mean, Sd) UCL	124.1	95% Chebyshev(Mean, Sd) UCL	135.4
97.5% Chebyshev(Mean, Sd) UCL	151	99% Chebyshev(Mean, Sd) UCL	181.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	126	Mean	278
Maximum	447	Median	260
SD	118.6	Std. Error of Mean	48.41
Coefficient of Variation	0.427	Skewness	0.321
Mean of logged Data	5.545	SD of logged Data	0.459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	375.6	95% Adjusted-CLT UCL (Chen-1995)	364.4
		95% Modified-t UCL (Johnson-1978)	376.6

Nonparametric Distribution Free UCLs

95% CLT UCL	357.6	95% Jackknife UCL	375.6
95% Standard Bootstrap UCL	348.7	95% Bootstrap-t UCL	409.7
95% Hall's Bootstrap UCL	441.8	95% Percentile Bootstrap UCL	353.8
95% BCA Bootstrap UCL	358.3		
90% Chebyshev(Mean, Sd) UCL	423.2	95% Chebyshev(Mean, Sd) UCL	489
97.5% Chebyshev(Mean, Sd) UCL	580.3	99% Chebyshev(Mean, Sd) UCL	759.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.2	Mean	14.82
Maximum	16.4	Median	14.75
SD	1.332	Std. Error of Mean	0.544
Coefficient of Variation	0.0899	Skewness	0.0375
Mean of logged Data	2.692	SD of logged Data	0.0901

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.91	95% Adjusted-CLT UCL (Chen-1995)	15.72
		95% Modified-t UCL (Johnson-1978)	15.91

Nonparametric Distribution Free UCLs

95% CLT UCL	15.71	95% Jackknife UCL	15.91
95% Standard Bootstrap UCL	15.62	95% Bootstrap-t UCL	16.13
95% Hall's Bootstrap UCL	15.52	95% Percentile Bootstrap UCL	15.63
95% BCA Bootstrap UCL	15.68		
90% Chebyshev(Mean, Sd) UCL	16.45	95% Chebyshev(Mean, Sd) UCL	17.19
97.5% Chebyshev(Mean, Sd) UCL	18.21	99% Chebyshev(Mean, Sd) UCL	20.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.8	Mean	19.72
Maximum	25	Median	19.75
SD	3.605	Std. Error of Mean	1.472
Coefficient of Variation	0.183	Skewness	0.358
Mean of logged Data	2.968	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.68	95% Adjusted-CLT UCL (Chen-1995)	22.37
		95% Modified-t UCL (Johnson-1978)	22.72

Nonparametric Distribution Free UCLs

95% CLT UCL	22.14	95% Jackknife UCL	22.68
95% Standard Bootstrap UCL	21.93	95% Bootstrap-t UCL	23.45
95% Hall's Bootstrap UCL	21.64	95% Percentile Bootstrap UCL	22.12
95% BCA Bootstrap UCL	21.83		
90% Chebyshev(Mean, Sd) UCL	24.13	95% Chebyshev(Mean, Sd) UCL	26.13
97.5% Chebyshev(Mean, Sd) UCL	28.91	99% Chebyshev(Mean, Sd) UCL	34.36

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.6	Mean	71.4
Maximum	96.8	Median	71.75
SD	25.85	Std. Error of Mean	10.55
Coefficient of Variation	0.362	Skewness	-0.00555
Mean of logged Data	4.21	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	92.66	95% Adjusted-CLT UCL (Chen-1995)	88.73
		95% Modified-t UCL (Johnson-1978)	92.66

Nonparametric Distribution Free UCLs

95% CLT UCL	88.76	95% Jackknife UCL	92.66
95% Standard Bootstrap UCL	87.53	95% Bootstrap-t UCL	92.83

95% Hall's Bootstrap UCL	80.05	95% Percentile Bootstrap UCL	87.35
95% BCA Bootstrap UCL	87		
90% Chebyshev(Mean, Sd) UCL	103.1	95% Chebyshev(Mean, Sd) UCL	117.4
97.5% Chebyshev(Mean, Sd) UCL	137.3	99% Chebyshev(Mean, Sd) UCL	176.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:45:33 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404552A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.02	Mean	1.92
Maximum	3.59	Median	1.73
SD	0.955	Std. Error of Mean	0.39
Coefficient of Variation	0.497	Skewness	1.18
Mean of logged Data	0.557	SD of logged Data	0.47

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.706	95% Adjusted-CLT UCL (Chen-1995)	2.762
		95% Modified-t UCL (Johnson-1978)	2.737

Nonparametric Distribution Free UCLs

95% CLT UCL	2.561	95% Jackknife UCL	2.706
95% Standard Bootstrap UCL	2.512	95% Bootstrap-t UCL	3.25
95% Hall's Bootstrap UCL	2.874	95% Percentile Bootstrap UCL	2.522
95% BCA Bootstrap UCL	2.647		
90% Chebyshev(Mean, Sd) UCL	3.09	95% Chebyshev(Mean, Sd) UCL	3.62
97.5% Chebyshev(Mean, Sd) UCL	4.355	99% Chebyshev(Mean, Sd) UCL	5.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.515	Mean	0.756
Maximum	1.07	Median	0.726
SD	0.261	Std. Error of Mean	0.107
Coefficient of Variation	0.345	Skewness	0.134
Mean of logged Data	-0.331	SD of logged Data	0.353

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.97	95% Adjusted-CLT UCL (Chen-1995)	0.937
		95% Modified-t UCL (Johnson-1978)	0.971

Nonparametric Distribution Free UCLs

95% CLT UCL	0.931	95% Jackknife UCL	0.97
95% Standard Bootstrap UCL	0.918	95% Bootstrap-t UCL	0.977
95% Hall's Bootstrap UCL	0.847	95% Percentile Bootstrap UCL	0.919
95% BCA Bootstrap UCL	0.923		
90% Chebyshev(Mean, Sd) UCL	1.075	95% Chebyshev(Mean, Sd) UCL	1.22
97.5% Chebyshev(Mean, Sd) UCL	1.421	99% Chebyshev(Mean, Sd) UCL	1.816

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.09	Mean	2.645
Maximum	3.89	Median	2.453
SD	0.703	Std. Error of Mean	0.287
Coefficient of Variation	0.266	Skewness	1.29
Mean of logged Data	0.946	SD of logged Data	0.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	3.223	95% Adjusted-CLT UCL (Chen-1995)	3.278
		95% Modified-t UCL (Johnson-1978)	3.248

Nonparametric Distribution Free UCLs

95% CLT UCL	3.117	95% Jackknife UCL	3.223
95% Standard Bootstrap UCL	3.077	95% Bootstrap-t UCL	3.759
95% Hall's Bootstrap UCL	3.327	95% Percentile Bootstrap UCL	3.094
95% BCA Bootstrap UCL	3.197		
90% Chebyshev(Mean, Sd) UCL	3.505	95% Chebyshev(Mean, Sd) UCL	3.895
97.5% Chebyshev(Mean, Sd) UCL	4.436	99% Chebyshev(Mean, Sd) UCL	5.499

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.43	Mean	14.18
Maximum	23.9	Median	14.79
SD	8.957	Std. Error of Mean	3.657
Coefficient of Variation	0.632	Skewness	-0.188
Mean of logged Data	2.396	SD of logged Data	0.885

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.55	95% Adjusted-CLT UCL (Chen-1995)	19.89
		95% Modified-t UCL (Johnson-1978)	21.5

Nonparametric Distribution Free UCLs

95% CLT UCL	20.19	95% Jackknife UCL	21.55
95% Standard Bootstrap UCL	19.54	95% Bootstrap-t UCL	21.16
95% Hall's Bootstrap UCL	18.21	95% Percentile Bootstrap UCL	19.56
95% BCA Bootstrap UCL	19.41		
90% Chebyshev(Mean, Sd) UCL	25.15	95% Chebyshev(Mean, Sd) UCL	30.12
97.5% Chebyshev(Mean, Sd) UCL	37.01	99% Chebyshev(Mean, Sd) UCL	50.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.63	Mean	20.5
Maximum	36.7	Median	21
SD	13.77	Std. Error of Mean	5.62
Coefficient of Variation	0.672	Skewness	-0.0431
Mean of logged Data	2.745	SD of logged Data	0.902

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.82	95% Adjusted-CLT UCL (Chen-1995)	29.63
		95% Modified-t UCL (Johnson-1978)	31.8

Nonparametric Distribution Free UCLs

95% CLT UCL	29.74	95% Jackknife UCL	31.82
95% Standard Bootstrap UCL	28.91	95% Bootstrap-t UCL	32.33
95% Hall's Bootstrap UCL	26.37	95% Percentile Bootstrap UCL	29.17
95% BCA Bootstrap UCL	28.48		
90% Chebyshev(Mean, Sd) UCL	37.35	95% Chebyshev(Mean, Sd) UCL	44.99
97.5% Chebyshev(Mean, Sd) UCL	55.59	99% Chebyshev(Mean, Sd) UCL	76.41

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	4.84	Mean	27.99
Maximum	48.5	Median	28.95
SD	18.82	Std. Error of Mean	7.685
Coefficient of Variation	0.672	Skewness	-0.0993
Mean of logged Data	3.051	SD of logged Data	0.913

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.47	95% Adjusted-CLT UCL (Chen-1995)	40.3
		95% Modified-t UCL (Johnson-1978)	43.42

Nonparametric Distribution Free UCLs

95% CLT UCL	40.63	95% Jackknife UCL	43.47
95% Standard Bootstrap UCL	39.51	95% Bootstrap-t UCL	43.02
95% Hall's Bootstrap UCL	35.54	95% Percentile Bootstrap UCL	39.36
95% BCA Bootstrap UCL	39.13		
90% Chebyshev(Mean, Sd) UCL	51.04	95% Chebyshev(Mean, Sd) UCL	61.49
97.5% Chebyshev(Mean, Sd) UCL	75.98	99% Chebyshev(Mean, Sd) UCL	104.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.18	Mean	14.2
Maximum	24	Median	14.65
SD	9.547	Std. Error of Mean	3.898
Coefficient of Variation	0.672	Skewness	-0.148
Mean of logged Data	2.36	SD of logged Data	0.948

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.05	95% Adjusted-CLT UCL (Chen-1995)	20.36
		95% Modified-t UCL (Johnson-1978)	22.01

Nonparametric Distribution Free UCLs

95% CLT UCL	20.61	95% Jackknife UCL	22.05
95% Standard Bootstrap UCL	20.12	95% Bootstrap-t UCL	22
95% Hall's Bootstrap UCL	18.13	95% Percentile Bootstrap UCL	20.18
95% BCA Bootstrap UCL	19.95		
90% Chebyshev(Mean, Sd) UCL	25.89	95% Chebyshev(Mean, Sd) UCL	31.19
97.5% Chebyshev(Mean, Sd) UCL	38.54	99% Chebyshev(Mean, Sd) UCL	52.98

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.145	Mean	12.26
Maximum	22.7	Median	11.47
SD	8.802	Std. Error of Mean	3.593
Coefficient of Variation	0.718	Skewness	0.0872
Mean of logged Data	2.199	SD of logged Data	0.941

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.5	95% Adjusted-CLT UCL (Chen-1995)	18.3
		95% Modified-t UCL (Johnson-1978)	19.52

Nonparametric Distribution Free UCLs

95% CLT UCL	18.17	95% Jackknife UCL	19.5
95% Standard Bootstrap UCL	17.67	95% Bootstrap-t UCL	19.06
95% Hall's Bootstrap UCL	16.28	95% Percentile Bootstrap UCL	17.57
95% BCA Bootstrap UCL	17.56		

90% Chebyshev(Mean, Sd) UCL	23.04	95% Chebyshev(Mean, Sd) UCL	27.92
97.5% Chebyshev(Mean, Sd) UCL	34.7	99% Chebyshev(Mean, Sd) UCL	48.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.27	Mean	18.71
Maximum	31.4	Median	19.6
SD	11.93	Std. Error of Mean	4.87
Coefficient of Variation	0.638	Skewness	-0.178
Mean of logged Data	2.672	SD of logged Data	0.883

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.53	95% Adjusted-CLT UCL (Chen-1995)	26.34
		95% Modified-t UCL (Johnson-1978)	28.47

Nonparametric Distribution Free UCLs

95% CLT UCL	26.72	95% Jackknife UCL	28.53
95% Standard Bootstrap UCL	25.9	95% Bootstrap-t UCL	28.34
95% Hall's Bootstrap UCL	23.8	95% Percentile Bootstrap UCL	25.88
95% BCA Bootstrap UCL	25.92		
90% Chebyshev(Mean, Sd) UCL	33.32	95% Chebyshev(Mean, Sd) UCL	39.94
97.5% Chebyshev(Mean, Sd) UCL	49.13	99% Chebyshev(Mean, Sd) UCL	67.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.215	Mean	4.754
Maximum	6.87	Median	4.455
SD	1.694	Std. Error of Mean	0.691
Coefficient of Variation	0.356	Skewness	0.218
Mean of logged Data	1.505	SD of logged Data	0.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.148	95% Adjusted-CLT UCL (Chen-1995)	5.957
		95% Modified-t UCL (Johnson-1978)	6.158

Nonparametric Distribution Free UCLs

95% CLT UCL	5.892	95% Jackknife UCL	6.148
95% Standard Bootstrap UCL	5.801	95% Bootstrap-t UCL	6.121
95% Hall's Bootstrap UCL	5.361	95% Percentile Bootstrap UCL	5.858
95% BCA Bootstrap UCL	5.758		
90% Chebyshev(Mean, Sd) UCL	6.829	95% Chebyshev(Mean, Sd) UCL	7.768
97.5% Chebyshev(Mean, Sd) UCL	9.072	99% Chebyshev(Mean, Sd) UCL	11.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.25	Mean	23.86
Maximum	40	Median	24.15
SD	14.8	Std. Error of Mean	6.041
Coefficient of Variation	0.62	Skewness	-0.19
Mean of logged Data	2.928	SD of logged Data	0.864

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.03	95% Adjusted-CLT UCL (Chen-1995)	33.29
		95% Modified-t UCL (Johnson-1978)	35.95

Nonparametric Distribution Free UCLs

95% CLT UCL	33.8	95% Jackknife UCL	36.03
95% Standard Bootstrap UCL	33.05	95% Bootstrap-t UCL	36.1
95% Hall's Bootstrap UCL	30.49	95% Percentile Bootstrap UCL	33.02
95% BCA Bootstrap UCL	32.91		
90% Chebyshev(Mean, Sd) UCL	41.98	95% Chebyshev(Mean, Sd) UCL	50.19
97.5% Chebyshev(Mean, Sd) UCL	61.59	99% Chebyshev(Mean, Sd) UCL	83.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.285	Mean	1.78
Maximum	2.64	Median	1.64
SD	0.57	Std. Error of Mean	0.233
Coefficient of Variation	0.32	Skewness	0.605
Mean of logged Data	0.535	SD of logged Data	0.314

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.249	95% Adjusted-CLT UCL (Chen-1995)	2.224
		95% Modified-t UCL (Johnson-1978)	2.258

Nonparametric Distribution Free UCLs

95% CLT UCL	2.163	95% Jackknife UCL	2.249
95% Standard Bootstrap UCL	2.121	95% Bootstrap-t UCL	2.317
95% Hall's Bootstrap UCL	2.057	95% Percentile Bootstrap UCL	2.117

95% BCA Bootstrap UCL	2.184		
90% Chebyshev(Mean, Sd) UCL	2.478	95% Chebyshev(Mean, Sd) UCL	2.794
97.5% Chebyshev(Mean, Sd) UCL	3.233	99% Chebyshev(Mean, Sd) UCL	4.095

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.59	Mean	17.29
Maximum	29.1	Median	18.01
SD	11.59	Std. Error of Mean	4.73
Coefficient of Variation	0.67	Skewness	-0.163
Mean of logged Data	2.555	SD of logged Data	0.955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.82	95% Adjusted-CLT UCL (Chen-1995)	24.73
		95% Modified-t UCL (Johnson-1978)	26.77

Nonparametric Distribution Free UCLs

95% CLT UCL	25.07	95% Jackknife UCL	26.82
95% Standard Bootstrap UCL	24.38	95% Bootstrap-t UCL	26.51
95% Hall's Bootstrap UCL	22.11	95% Percentile Bootstrap UCL	24.37
95% BCA Bootstrap UCL	24.29		
90% Chebyshev(Mean, Sd) UCL	31.48	95% Chebyshev(Mean, Sd) UCL	37.91
97.5% Chebyshev(Mean, Sd) UCL	46.83	99% Chebyshev(Mean, Sd) UCL	64.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.81	Mean	2.927
Maximum	4.58	Median	2.83
SD	0.957	Std. Error of Mean	0.391
Coefficient of Variation	0.327	Skewness	0.979
Mean of logged Data	1.031	SD of logged Data	0.318

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.714	95% Adjusted-CLT UCL (Chen-1995)	3.736
		95% Modified-t UCL (Johnson-1978)	3.74

Nonparametric Distribution Free UCLs

95% CLT UCL	3.569	95% Jackknife UCL	3.714
95% Standard Bootstrap UCL	3.519	95% Bootstrap-t UCL	3.903
95% Hall's Bootstrap UCL	5.027	95% Percentile Bootstrap UCL	3.553
95% BCA Bootstrap UCL	3.645		
90% Chebyshev(Mean, Sd) UCL	4.099	95% Chebyshev(Mean, Sd) UCL	4.63
97.5% Chebyshev(Mean, Sd) UCL	5.367	99% Chebyshev(Mean, Sd) UCL	6.815

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.3	Mean	10.14
Maximum	16.2	Median	10.6
SD	5.555	Std. Error of Mean	2.268
Coefficient of Variation	0.548	Skewness	-0.12
Mean of logged Data	2.158	SD of logged Data	0.652

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.71	95% Adjusted-CLT UCL (Chen-1995)	13.75
		95% Modified-t UCL (Johnson-1978)	14.69

Nonparametric Distribution Free UCLs

95% CLT UCL	13.87	95% Jackknife UCL	14.71
95% Standard Bootstrap UCL	13.61	95% Bootstrap-t UCL	14.88
95% Hall's Bootstrap UCL	12.39	95% Percentile Bootstrap UCL	13.7
95% BCA Bootstrap UCL	13.45		
90% Chebyshev(Mean, Sd) UCL	16.94	95% Chebyshev(Mean, Sd) UCL	20.02
97.5% Chebyshev(Mean, Sd) UCL	24.3	99% Chebyshev(Mean, Sd) UCL	32.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.19	Mean	23.05
Maximum	38.6	Median	23.4
SD	14.37	Std. Error of Mean	5.867
Coefficient of Variation	0.624	Skewness	-0.176
Mean of logged Data	2.893	SD of logged Data	0.86

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.87	95% Adjusted-CLT UCL (Chen-1995)	32.25
		95% Modified-t UCL (Johnson-1978)	34.8

Nonparametric Distribution Free UCLs

95% CLT UCL	32.7	95% Jackknife UCL	34.87
95% Standard Bootstrap UCL	31.67	95% Bootstrap-t UCL	35.31

95% Hall's Bootstrap UCL	29.48	95% Percentile Bootstrap UCL	31.93
95% BCA Bootstrap UCL	31.38		
90% Chebyshev(Mean, Sd) UCL	40.65	95% Chebyshev(Mean, Sd) UCL	48.62
97.5% Chebyshev(Mean, Sd) UCL	59.69	99% Chebyshev(Mean, Sd) UCL	81.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	15.1	Mean	18.6
Maximum	28.6	Median	17.2
SD	4.972	Std. Error of Mean	2.03
Coefficient of Variation	0.267	Skewness	2.283
Mean of logged Data	2.899	SD of logged Data	0.229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.69	95% Adjusted-CLT UCL (Chen-1995)	23.96
		95% Modified-t UCL (Johnson-1978)	23.01

Nonparametric Distribution Free UCLs

95% CLT UCL	21.94	95% Jackknife UCL	22.69
95% Standard Bootstrap UCL	21.67	95% Bootstrap-t UCL	35.45
95% Hall's Bootstrap UCL	42.31	95% Percentile Bootstrap UCL	22.22
95% BCA Bootstrap UCL	22.9		
90% Chebyshev(Mean, Sd) UCL	24.69	95% Chebyshev(Mean, Sd) UCL	27.45
97.5% Chebyshev(Mean, Sd) UCL	31.28	99% Chebyshev(Mean, Sd) UCL	38.8

Suggested UCL to Use

95% Student's-t UCL	22.69	or 95% Modified-t UCL	23.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	59.7	Mean	71.45
Maximum	85.1	Median	68.7
SD	11.31	Std. Error of Mean	4.618
Coefficient of Variation	0.158	Skewness	0.336
Mean of logged Data	4.259	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	80.76	95% Adjusted-CLT UCL (Chen-1995)	79.72
		95% Modified-t UCL (Johnson-1978)	80.86

Nonparametric Distribution Free UCLs

95% CLT UCL	79.05	95% Jackknife UCL	80.76
95% Standard Bootstrap UCL	78.46	95% Bootstrap-t UCL	81.06
95% Hall's Bootstrap UCL	77.22	95% Percentile Bootstrap UCL	78.7
95% BCA Bootstrap UCL	78.33		
90% Chebyshev(Mean, Sd) UCL	85.3	95% Chebyshev(Mean, Sd) UCL	91.58
97.5% Chebyshev(Mean, Sd) UCL	100.3	99% Chebyshev(Mean, Sd) UCL	117.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:49:02 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404553) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.91	Mean	4.253
Maximum	4.97	Median	4.39
SD	0.719	Std. Error of Mean	0.293
Coefficient of Variation	0.169	Skewness	-1.578
Mean of logged Data	1.434	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.845	95% Adjusted-CLT UCL (Chen-1995)	4.534
		95% Modified-t UCL (Johnson-1978)	4.813

Nonparametric Distribution Free UCLs

95% CLT UCL	4.736	95% Jackknife UCL	4.845
95% Standard Bootstrap UCL	4.695	95% Bootstrap-t UCL	4.64
95% Hall's Bootstrap UCL	4.565	95% Percentile Bootstrap UCL	4.632
95% BCA Bootstrap UCL	4.607		
90% Chebyshev(Mean, Sd) UCL	5.134	95% Chebyshev(Mean, Sd) UCL	5.533
97.5% Chebyshev(Mean, Sd) UCL	6.086	99% Chebyshev(Mean, Sd) UCL	7.173

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.461	Mean	1.165
Maximum	2.29	Median	1.059
SD	0.697	Std. Error of Mean	0.285
Coefficient of Variation	0.599	Skewness	0.774
Mean of logged Data	-0.00393	SD of logged Data	0.622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.738	95% Adjusted-CLT UCL (Chen-1995)	1.729
		95% Modified-t UCL (Johnson-1978)	1.753

Nonparametric Distribution Free UCLs

95% CLT UCL	1.633	95% Jackknife UCL	1.738
95% Standard Bootstrap UCL	1.587	95% Bootstrap-t UCL	2.049
95% Hall's Bootstrap UCL	1.737	95% Percentile Bootstrap UCL	1.62
95% BCA Bootstrap UCL	1.637		
90% Chebyshev(Mean, Sd) UCL	2.019	95% Chebyshev(Mean, Sd) UCL	2.406
97.5% Chebyshev(Mean, Sd) UCL	2.943	99% Chebyshev(Mean, Sd) UCL	3.997

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.76	Mean	4.263
Maximum	11.2	Median	2.345
SD	3.788	Std. Error of Mean	1.546
Coefficient of Variation	0.889	Skewness	1.624
Mean of logged Data	1.176	SD of logged Data	0.767

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.379	95% Adjusted-CLT UCL (Chen-1995)	7.902
		95% Modified-t UCL (Johnson-1978)	7.55

Nonparametric Distribution Free UCLs

95% CLT UCL	6.807	95% Jackknife UCL	7.379
95% Standard Bootstrap UCL	6.564	95% Bootstrap-t UCL	24.01
95% Hall's Bootstrap UCL	27.02	95% Percentile Bootstrap UCL	6.675
95% BCA Bootstrap UCL	7.948		
90% Chebyshev(Mean, Sd) UCL	8.903	95% Chebyshev(Mean, Sd) UCL	11
97.5% Chebyshev(Mean, Sd) UCL	13.92	99% Chebyshev(Mean, Sd) UCL	19.65

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.2	Mean	32.6
Maximum	65.9	Median	29.4
SD	19.79	Std. Error of Mean	8.081
Coefficient of Variation	0.607	Skewness	0.931
Mean of logged Data	3.323	SD of logged Data	0.639

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.88	95% Adjusted-CLT UCL (Chen-1995)	49.17
		95% Modified-t UCL (Johnson-1978)	49.4

Nonparametric Distribution Free UCLs

95% CLT UCL	45.89	95% Jackknife UCL	48.88
95% Standard Bootstrap UCL	44.34	95% Bootstrap-t UCL	56.79
95% Hall's Bootstrap UCL	137	95% Percentile Bootstrap UCL	44.67
95% BCA Bootstrap UCL	47.78		
90% Chebyshev(Mean, Sd) UCL	56.84	95% Chebyshev(Mean, Sd) UCL	67.82
97.5% Chebyshev(Mean, Sd) UCL	83.06	99% Chebyshev(Mean, Sd) UCL	113

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.5	Mean	38.6
Maximum	79.2	Median	35.05
SD	24.59	Std. Error of Mean	10.04
Coefficient of Variation	0.637	Skewness	0.844
Mean of logged Data	3.469	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.83	95% Adjusted-CLT UCL (Chen-1995)	58.81
		95% Modified-t UCL (Johnson-1978)	59.41

Nonparametric Distribution Free UCLs

95% CLT UCL	55.11	95% Jackknife UCL	58.83
95% Standard Bootstrap UCL	53.77	95% Bootstrap-t UCL	66.58
95% Hall's Bootstrap UCL	106.1	95% Percentile Bootstrap UCL	53.37
95% BCA Bootstrap UCL	56.75		
90% Chebyshev(Mean, Sd) UCL	68.72	95% Chebyshev(Mean, Sd) UCL	82.36
97.5% Chebyshev(Mean, Sd) UCL	101.3	99% Chebyshev(Mean, Sd) UCL	138.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.2	Mean	52.43
Maximum	107	Median	46.15

SD	33.45	Std. Error of Mean	13.66
Coefficient of Variation	0.638	Skewness	0.848
Mean of logged Data	3.779	SD of logged Data	0.675

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	79.95	95% Adjusted-CLT UCL (Chen-1995)	79.95
		95% Modified-t UCL (Johnson-1978)	80.74

Nonparametric Distribution Free UCLs

95% CLT UCL	74.9	95% Jackknife UCL	79.95
95% Standard Bootstrap UCL	73.05	95% Bootstrap-t UCL	97.78
95% Hall's Bootstrap UCL	127.3	95% Percentile Bootstrap UCL	75.65
95% BCA Bootstrap UCL	76.48		
90% Chebyshev(Mean, Sd) UCL	93.4	95% Chebyshev(Mean, Sd) UCL	112
97.5% Chebyshev(Mean, Sd) UCL	137.7	99% Chebyshev(Mean, Sd) UCL	188.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10	Mean	26
Maximum	54.3	Median	20.8
SD	16.99	Std. Error of Mean	6.937
Coefficient of Variation	0.654	Skewness	1.056
Mean of logged Data	3.084	SD of logged Data	0.646

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.98	95% Adjusted-CLT UCL (Chen-1995)	40.61
		95% Modified-t UCL (Johnson-1978)	40.48

Nonparametric Distribution Free UCLs

95% CLT UCL	37.41	95% Jackknife UCL	39.98
95% Standard Bootstrap UCL	36.37	95% Bootstrap-t UCL	57.27
95% Hall's Bootstrap UCL	117.1	95% Percentile Bootstrap UCL	36.5
95% BCA Bootstrap UCL	38		
90% Chebyshev(Mean, Sd) UCL	46.81	95% Chebyshev(Mean, Sd) UCL	56.24
97.5% Chebyshev(Mean, Sd) UCL	69.32	99% Chebyshev(Mean, Sd) UCL	95.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.76	Mean	24.24
Maximum	50	Median	20.95
SD	16.25	Std. Error of Mean	6.632
Coefficient of Variation	0.67	Skewness	0.743
Mean of logged Data	2.977	SD of logged Data	0.742

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.61	95% Adjusted-CLT UCL (Chen-1995)	37.3
		95% Modified-t UCL (Johnson-1978)	37.94

Nonparametric Distribution Free UCLs

95% CLT UCL	35.15	95% Jackknife UCL	37.61
95% Standard Bootstrap UCL	34.31	95% Bootstrap-t UCL	42.59
95% Hall's Bootstrap UCL	48.34	95% Percentile Bootstrap UCL	34.83
95% BCA Bootstrap UCL	36.8		
90% Chebyshev(Mean, Sd) UCL	44.14	95% Chebyshev(Mean, Sd) UCL	53.15
97.5% Chebyshev(Mean, Sd) UCL	65.66	99% Chebyshev(Mean, Sd) UCL	90.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13	Mean	40.1
Maximum	77.9	Median	37.8
SD	23.98	Std. Error of Mean	9.788
Coefficient of Variation	0.598	Skewness	0.606
Mean of logged Data	3.521	SD of logged Data	0.668

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.82	95% Adjusted-CLT UCL (Chen-1995)	58.79
		95% Modified-t UCL (Johnson-1978)	60.23

Nonparametric Distribution Free UCLs

95% CLT UCL	56.2	95% Jackknife UCL	59.82
95% Standard Bootstrap UCL	54.53	95% Bootstrap-t UCL	65.29
95% Hall's Bootstrap UCL	67.01	95% Percentile Bootstrap UCL	55.83
95% BCA Bootstrap UCL	57.18		
90% Chebyshev(Mean, Sd) UCL	69.47	95% Chebyshev(Mean, Sd) UCL	82.77
97.5% Chebyshev(Mean, Sd) UCL	101.2	99% Chebyshev(Mean, Sd) UCL	137.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.3	Mean	7.49
Maximum	15.3	Median	6.25
SD	4.618	Std. Error of Mean	1.885
Coefficient of Variation	0.617	Skewness	1.087
Mean of logged Data	1.86	SD of logged Data	0.604

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.29	95% Adjusted-CLT UCL (Chen-1995)	11.48
		95% Modified-t UCL (Johnson-1978)	11.43

Nonparametric Distribution Free UCLs

95% CLT UCL	10.59	95% Jackknife UCL	11.29
95% Standard Bootstrap UCL	10.35	95% Bootstrap-t UCL	15.18
95% Hall's Bootstrap UCL	32.5	95% Percentile Bootstrap UCL	10.51
95% BCA Bootstrap UCL	10.87		
90% Chebyshev(Mean, Sd) UCL	13.15	95% Chebyshev(Mean, Sd) UCL	15.71
97.5% Chebyshev(Mean, Sd) UCL	19.26	99% Chebyshev(Mean, Sd) UCL	26.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.7	Mean	48.73
Maximum	101	Median	35.85
SD	30.65	Std. Error of Mean	12.51
Coefficient of Variation	0.629	Skewness	1.246
Mean of logged Data	3.739	SD of logged Data	0.578

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	73.95	95% Adjusted-CLT UCL (Chen-1995)	76.12
		95% Modified-t UCL (Johnson-1978)	75.01

Nonparametric Distribution Free UCLs

95% CLT UCL	69.31	95% Jackknife UCL	73.95
95% Standard Bootstrap UCL	67.34	95% Bootstrap-t UCL	142.9
95% Hall's Bootstrap UCL	200.2	95% Percentile Bootstrap UCL	67.95

95% BCA Bootstrap UCL	71.85		
90% Chebyshev(Mean, Sd) UCL	86.27	95% Chebyshev(Mean, Sd) UCL	103.3
97.5% Chebyshev(Mean, Sd) UCL	126.9	99% Chebyshev(Mean, Sd) UCL	173.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.11	Mean	1.398
Maximum	2.22	Median	1.263
SD	0.412	Std. Error of Mean	0.168
Coefficient of Variation	0.295	Skewness	2.213
Mean of logged Data	0.305	SD of logged Data	0.251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.736	95% Adjusted-CLT UCL (Chen-1995)	1.837
		95% Modified-t UCL (Johnson-1978)	1.762

Nonparametric Distribution Free UCLs

95% CLT UCL	1.674	95% Jackknife UCL	1.736
95% Standard Bootstrap UCL	1.653	95% Bootstrap-t UCL	2.591
95% Hall's Bootstrap UCL	3.003	95% Percentile Bootstrap UCL	1.715
95% BCA Bootstrap UCL	1.758		
90% Chebyshev(Mean, Sd) UCL	1.902	95% Chebyshev(Mean, Sd) UCL	2.131
97.5% Chebyshev(Mean, Sd) UCL	2.448	99% Chebyshev(Mean, Sd) UCL	3.071

Suggested UCL to Use

95% Student's-t UCL	1.736	or 95% Modified-t UCL	1.762

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.1	Mean	31.65
Maximum	65.8	Median	26.5
SD	20.98	Std. Error of Mean	8.564
Coefficient of Variation	0.663	Skewness	0.911
Mean of logged Data	3.264	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.91	95% Adjusted-CLT UCL (Chen-1995)	49.14
		95% Modified-t UCL (Johnson-1978)	49.44

Nonparametric Distribution Free UCLs

95% CLT UCL	45.74	95% Jackknife UCL	48.91
95% Standard Bootstrap UCL	44.51	95% Bootstrap-t UCL	62.02
95% Hall's Bootstrap UCL	145.8	95% Percentile Bootstrap UCL	44.75
95% BCA Bootstrap UCL	46.97		
90% Chebyshev(Mean, Sd) UCL	57.34	95% Chebyshev(Mean, Sd) UCL	68.98
97.5% Chebyshev(Mean, Sd) UCL	85.13	99% Chebyshev(Mean, Sd) UCL	116.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.65	Mean	5.378
Maximum	6.5	Median	5.65
SD	1.133	Std. Error of Mean	0.462
Coefficient of Variation	0.211	Skewness	-0.646
Mean of logged Data	1.662	SD of logged Data	0.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.31	95% Adjusted-CLT UCL (Chen-1995)	6.009
		95% Modified-t UCL (Johnson-1978)	6.29

Nonparametric Distribution Free UCLs

95% CLT UCL	6.139	95% Jackknife UCL	6.31
95% Standard Bootstrap UCL	6.071	95% Bootstrap-t UCL	6.112
95% Hall's Bootstrap UCL	5.952	95% Percentile Bootstrap UCL	6.043
95% BCA Bootstrap UCL	5.95		
90% Chebyshev(Mean, Sd) UCL	6.766	95% Chebyshev(Mean, Sd) UCL	7.394
97.5% Chebyshev(Mean, Sd) UCL	8.266	99% Chebyshev(Mean, Sd) UCL	9.979

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.37	Mean	20.6
Maximum	46.3	Median	14.1
SD	14.45	Std. Error of Mean	5.898
Coefficient of Variation	0.701	Skewness	1.457
Mean of logged Data	2.849	SD of logged Data	0.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.48	95% Adjusted-CLT UCL (Chen-1995)	34.04
		95% Modified-t UCL (Johnson-1978)	33.06

Nonparametric Distribution Free UCLs

95% CLT UCL	30.3	95% Jackknife UCL	32.48
95% Standard Bootstrap UCL	29.48	95% Bootstrap-t UCL	74.78
95% Hall's Bootstrap UCL	102	95% Percentile Bootstrap UCL	29.77
95% BCA Bootstrap UCL	32.08		
90% Chebyshev(Mean, Sd) UCL	38.29	95% Chebyshev(Mean, Sd) UCL	46.3

97.5% Chebyshev(Mean, Sd) UCL	57.43	99% Chebyshev(Mean, Sd) UCL	79.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20	Mean	45.95
Maximum	90.6	Median	37.25
SD	27.14	Std. Error of Mean	11.08
Coefficient of Variation	0.591	Skewness	1.023
Mean of logged Data	3.688	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.28	95% Adjusted-CLT UCL (Chen-1995)	69.12
		95% Modified-t UCL (Johnson-1978)	69.05

Nonparametric Distribution Free UCLs

95% CLT UCL	64.18	95% Jackknife UCL	68.28
95% Standard Bootstrap UCL	62.31	95% Bootstrap-t UCL	98.11
95% Hall's Bootstrap UCL	197	95% Percentile Bootstrap UCL	63.67
95% BCA Bootstrap UCL	63.73		
90% Chebyshev(Mean, Sd) UCL	79.19	95% Chebyshev(Mean, Sd) UCL	94.25
97.5% Chebyshev(Mean, Sd) UCL	115.1	99% Chebyshev(Mean, Sd) UCL	156.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	9.97	Mean	10.38
Maximum	11	Median	10.35
SD	0.361	Std. Error of Mean	0.147
Coefficient of Variation	0.0348	Skewness	0.968
Mean of logged Data	2.339	SD of logged Data	0.0344

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.68	95% Adjusted-CLT UCL (Chen-1995)	10.68
		95% Modified-t UCL (Johnson-1978)	10.69

Nonparametric Distribution Free UCLs

95% CLT UCL	10.62	95% Jackknife UCL	10.68
95% Standard Bootstrap UCL	10.61	95% Bootstrap-t UCL	10.76
95% Hall's Bootstrap UCL	11.08	95% Percentile Bootstrap UCL	10.62
95% BCA Bootstrap UCL	10.65		
90% Chebyshev(Mean, Sd) UCL	10.82	95% Chebyshev(Mean, Sd) UCL	11.02
97.5% Chebyshev(Mean, Sd) UCL	11.3	99% Chebyshev(Mean, Sd) UCL	11.85

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.8	Mean	18.07
Maximum	26.3	Median	16.7
SD	4.936	Std. Error of Mean	2.015
Coefficient of Variation	0.273	Skewness	0.959
Mean of logged Data	2.865	SD of logged Data	0.262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.13	95% Adjusted-CLT UCL (Chen-1995)	22.22
		95% Modified-t UCL (Johnson-1978)	22.26

Nonparametric Distribution Free UCLs

95% CLT UCL	21.38	95% Jackknife UCL	22.13
95% Standard Bootstrap UCL	21.12	95% Bootstrap-t UCL	24.31
95% Hall's Bootstrap UCL	38.29	95% Percentile Bootstrap UCL	21.27
95% BCA Bootstrap UCL	21.75		
90% Chebyshev(Mean, Sd) UCL	24.11	95% Chebyshev(Mean, Sd) UCL	26.85
97.5% Chebyshev(Mean, Sd) UCL	30.65	99% Chebyshev(Mean, Sd) UCL	38.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.3	Mean	58.63
Maximum	82	Median	56.7
SD	19.53	Std. Error of Mean	7.971
Coefficient of Variation	0.333	Skewness	0.124
Mean of logged Data	4.023	SD of logged Data	0.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	74.7	95% Adjusted-CLT UCL (Chen-1995)	72.17
		95% Modified-t UCL (Johnson-1978)	74.76

Nonparametric Distribution Free UCLs

95% CLT UCL	71.75	95% Jackknife UCL	74.7
95% Standard Bootstrap UCL	70.43	95% Bootstrap-t UCL	78.31
95% Hall's Bootstrap UCL	65.64	95% Percentile Bootstrap UCL	71.25
95% BCA Bootstrap UCL	70.88		
90% Chebyshev(Mean, Sd) UCL	82.55	95% Chebyshev(Mean, Sd) UCL	93.38
97.5% Chebyshev(Mean, Sd) UCL	108.4	99% Chebyshev(Mean, Sd) UCL	137.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:51:58 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404556A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.09	Mean	4.683
Maximum	5.75	Median	4.21
SD	0.926	Std. Error of Mean	0.534
Coefficient of Variation	0.198	Skewness	1.699
Mean of logged Data	1.532	SD of logged Data	0.189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.244	95% Adjusted-CLT UCL (Chen-1995)	6.123
		95% Modified-t UCL (Johnson-1978)	6.331

Nonparametric Distribution Free UCLs

95% CLT UCL	5.562	95% Jackknife UCL	6.244
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.287	95% Chebyshev(Mean, Sd) UCL	7.013
97.5% Chebyshev(Mean, Sd) UCL	8.021	99% Chebyshev(Mean, Sd) UCL	10

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0

Minimum	2.125	Mean	2.437
Maximum	3.06	Median	2.125
SD	0.54	Std. Error of Mean	0.312
Coefficient of Variation	0.222	Skewness	1.732
Mean of logged Data	0.875	SD of logged Data	0.211

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.347	95% Adjusted-CLT UCL (Chen-1995)	3.282
		95% Modified-t UCL (Johnson-1978)	3.399

Nonparametric Distribution Free UCLs

95% CLT UCL	2.949	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.372	95% Chebyshev(Mean, Sd) UCL	3.795
97.5% Chebyshev(Mean, Sd) UCL	4.383	99% Chebyshev(Mean, Sd) UCL	5.538

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.07	Mean	10.57
Maximum	18.5	Median	7.15
SD	6.886	Std. Error of Mean	3.976
Coefficient of Variation	0.651	Skewness	1.684
Mean of logged Data	2.229	SD of logged Data	0.602

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	22.18	95% Adjusted-CLT UCL (Chen-1995)	21.24
		95% Modified-t UCL (Johnson-1978)	22.83

Nonparametric Distribution Free UCLs

95% CLT UCL	17.11	95% Jackknife UCL	22.18
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	22.5	95% Chebyshev(Mean, Sd) UCL	27.9
97.5% Chebyshev(Mean, Sd) UCL	35.4	99% Chebyshev(Mean, Sd) UCL	50.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	39.3	Mean	57.57
Maximum	93.8	Median	39.6
SD	31.38	Std. Error of Mean	18.12
Coefficient of Variation	0.545	Skewness	1.732
Mean of logged Data	3.964	SD of logged Data	0.5

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	110.5	95% Adjusted-CLT UCL (Chen-1995)	106.7
		95% Modified-t UCL (Johnson-1978)	113.5

Nonparametric Distribution Free UCLs

95% CLT UCL	87.37	95% Jackknife UCL	110.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	111.9	95% Chebyshev(Mean, Sd) UCL	136.5
97.5% Chebyshev(Mean, Sd) UCL	170.7	99% Chebyshev(Mean, Sd) UCL	237.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	52.2	Mean	72.5
Maximum	112	Median	53.3
SD	34.21	Std. Error of Mean	19.75
Coefficient of Variation	0.472	Skewness	1.73
Mean of logged Data	4.217	SD of logged Data	0.435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.2	95% Adjusted-CLT UCL (Chen-1995)	126.1
		95% Modified-t UCL (Johnson-1978)	133.5

Nonparametric Distribution Free UCLs

95% CLT UCL	105	95% Jackknife UCL	130.2
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	131.8	95% Chebyshev(Mean, Sd) UCL	158.6
97.5% Chebyshev(Mean, Sd) UCL	195.9	99% Chebyshev(Mean, Sd) UCL	269

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	90.4	Mean	119.1
Maximum	173	Median	94
SD	46.68	Std. Error of Mean	26.95
Coefficient of Variation	0.392	Skewness	1.72
Mean of logged Data	4.734	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	197.8	95% Adjusted-CLT UCL (Chen-1995)	192.1
		95% Modified-t UCL (Johnson-1978)	202.3

Nonparametric Distribution Free UCLs

95% CLT UCL	163.5	95% Jackknife UCL	197.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	200	95% Chebyshev(Mean, Sd) UCL	236.6
97.5% Chebyshev(Mean, Sd) UCL	287.5	99% Chebyshev(Mean, Sd) UCL	387.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	46.4	Mean	57.73
Maximum	79.4	Median	47.4
SD	18.77	Std. Error of Mean	10.84
Coefficient of Variation	0.325	Skewness	1.727
Mean of logged Data	4.023	SD of logged Data	0.304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	89.38	95% Adjusted-CLT UCL (Chen-1995)	87.1
		95% Modified-t UCL (Johnson-1978)	91.18

Nonparametric Distribution Free UCLs

95% CLT UCL	75.56	95% Jackknife UCL	89.38

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	90.24	95% Chebyshev(Mean, Sd) UCL	105
97.5% Chebyshev(Mean, Sd) UCL	125.4	99% Chebyshev(Mean, Sd) UCL	165.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	32.3	Mean	45.87
Maximum	71.5	Median	33.8
SD	22.21	Std. Error of Mean	12.82
Coefficient of Variation	0.484	Skewness	1.723
Mean of logged Data	3.755	SD of logged Data	0.446

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	83.31	95% Adjusted-CLT UCL (Chen-1995)	80.59
		95% Modified-t UCL (Johnson-1978)	85.44

Nonparametric Distribution Free UCLs

95% CLT UCL	66.96	95% Jackknife UCL	83.31
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	84.34	95% Chebyshev(Mean, Sd) UCL	101.8
97.5% Chebyshev(Mean, Sd) UCL	126	99% Chebyshev(Mean, Sd) UCL	173.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	73.6	Mean	95.43
Maximum	139	Median	73.7
SD	37.73	Std. Error of Mean	21.78
Coefficient of Variation	0.395	Skewness	1.732
Mean of logged Data	4.511	SD of logged Data	0.367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	159	95% Adjusted-CLT UCL (Chen-1995)	154.5
		95% Modified-t UCL (Johnson-1978)	162.7

Nonparametric Distribution Free UCLs

95% CLT UCL	131.3	95% Jackknife UCL	159
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	160.8	95% Chebyshev(Mean, Sd) UCL	190.4
97.5% Chebyshev(Mean, Sd) UCL	231.5	99% Chebyshev(Mean, Sd) UCL	312.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	13.25	Mean	15.57
Maximum	20.2	Median	13.25
SD	4.013	Std. Error of Mean	2.317
Coefficient of Variation	0.258	Skewness	1.732
Mean of logged Data	2.725	SD of logged Data	0.243

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.33	95% Adjusted-CLT UCL (Chen-1995)	21.85
		95% Modified-t UCL (Johnson-1978)	22.72

Nonparametric Distribution Free UCLs

95% CLT UCL	19.38	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	22.52	95% Chebyshev(Mean, Sd) UCL	25.66
97.5% Chebyshev(Mean, Sd) UCL	30.03	99% Chebyshev(Mean, Sd) UCL	38.62

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	77.5	Mean	111.5
Maximum	176	Median	81.1
SD	55.86	Std. Error of Mean	32.25
Coefficient of Variation	0.501	Skewness	1.724
Mean of logged Data	4.639	SD of logged Data	0.461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	205.7	95% Adjusted-CLT UCL (Chen-1995)	198.9
		95% Modified-t UCL (Johnson-1978)	211.1

Nonparametric Distribution Free UCLs

95% CLT UCL	164.6	95% Jackknife UCL	205.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	208.3	95% Chebyshev(Mean, Sd) UCL	252.1
97.5% Chebyshev(Mean, Sd) UCL	312.9	99% Chebyshev(Mean, Sd) UCL	432.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	5.25	Mean	5.283
Maximum	5.3	Median	5.3
SD	0.0289	Std. Error of Mean	0.0167
Coefficient of Variation	0.00546	Skewness	-1.732
Mean of logged Data	1.665	SD of logged Data	0.00547

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.332	95% Adjusted-CLT UCL (Chen-1995)	5.293
		95% Modified-t UCL (Johnson-1978)	5.329

Nonparametric Distribution Free UCLs

95% CLT UCL	5.311	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.333	95% Chebyshev(Mean, Sd) UCL	5.356
97.5% Chebyshev(Mean, Sd) UCL	5.387	99% Chebyshev(Mean, Sd) UCL	5.449

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	48.9	Mean	64.8
Maximum	92.7	Median	52.8
SD	24.24	Std. Error of Mean	14
Coefficient of Variation	0.374	Skewness	1.682
Mean of logged Data	4.129	SD of logged Data	0.349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	105.7	95% Adjusted-CLT UCL (Chen-1995)	102.3
		95% Modified-t UCL (Johnson-1978)	107.9

Nonparametric Distribution Free UCLs

95% CLT UCL	87.82	95% Jackknife UCL	105.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	106.8	95% Chebyshev(Mean, Sd) UCL	125.8
97.5% Chebyshev(Mean, Sd) UCL	152.2	99% Chebyshev(Mean, Sd) UCL	204.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	7.14	Mean	9.21
Maximum	12.2	Median	8.29
SD	2.652	Std. Error of Mean	1.531
Coefficient of Variation	0.288	Skewness	1.373
Mean of logged Data	2.194	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.68	95% Adjusted-CLT UCL (Chen-1995)	13.03
		95% Modified-t UCL (Johnson-1978)	13.88

Nonparametric Distribution Free UCLs

95% CLT UCL	11.73	95% Jackknife UCL	13.68
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.8	95% Chebyshev(Mean, Sd) UCL	15.89
97.5% Chebyshev(Mean, Sd) UCL	18.77	99% Chebyshev(Mean, Sd) UCL	24.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	32.5	Mean	50.63
Maximum	86.3	Median	33.1
SD	30.89	Std. Error of Mean	17.83
Coefficient of Variation	0.61	Skewness	1.731
Mean of logged Data	3.813	SD of logged Data	0.559

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	102.7	95% Adjusted-CLT UCL (Chen-1995)	99.02
		95% Modified-t UCL (Johnson-1978)	105.7

Nonparametric Distribution Free UCLs

95% CLT UCL	79.97	95% Jackknife UCL	102.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	104.1	95% Chebyshev(Mean, Sd) UCL	128.4
97.5% Chebyshev(Mean, Sd) UCL	162	99% Chebyshev(Mean, Sd) UCL	228.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	70.6	Mean	100.8
Maximum	157	Median	74.7
SD	48.74	Std. Error of Mean	28.14
Coefficient of Variation	0.484	Skewness	1.718
Mean of logged Data	4.542	SD of logged Data	0.446

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	182.9	95% Adjusted-CLT UCL (Chen-1995)	176.9
		95% Modified-t UCL (Johnson-1978)	187.6

Nonparametric Distribution Free UCLs

95% CLT UCL	147.1	95% Jackknife UCL	182.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	185.2	95% Chebyshev(Mean, Sd) UCL	223.4
97.5% Chebyshev(Mean, Sd) UCL	276.5	99% Chebyshev(Mean, Sd) UCL	380.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	34.8	Mean	124.9
Maximum	188	Median	152

SD	80.11	Std. Error of Mean	46.25
Coefficient of Variation	0.641	Skewness	-1.347
Mean of logged Data	4.603	SD of logged Data	0.919

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	260	95% Adjusted-CLT UCL (Chen-1995)	162.6
		95% Modified-t UCL (Johnson-1978)	254

Nonparametric Distribution Free UCLs

95% CLT UCL	201	95% Jackknife UCL	260
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	263.7	95% Chebyshev(Mean, Sd) UCL	326.5
97.5% Chebyshev(Mean, Sd) UCL	413.8	99% Chebyshev(Mean, Sd) UCL	585.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	36.6	Mean	38.5
Maximum	41.1	Median	37.8
SD	2.33	Std. Error of Mean	1.345
Coefficient of Variation	0.0605	Skewness	1.23
Mean of logged Data	3.649	SD of logged Data	0.0599

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.43	95% Adjusted-CLT UCL (Chen-1995)	41.73
		95% Modified-t UCL (Johnson-1978)	42.59

Nonparametric Distribution Free UCLs

95% CLT UCL	40.71	95% Jackknife UCL	42.43
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	42.54	95% Chebyshev(Mean, Sd) UCL	44.36
97.5% Chebyshev(Mean, Sd) UCL	46.9	99% Chebyshev(Mean, Sd) UCL	51.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	97.5	Mean	100.8
Maximum	103	Median	102
SD	2.93	Std. Error of Mean	1.691
Coefficient of Variation	0.0291	Skewness	-1.508
Mean of logged Data	4.613	SD of logged Data	0.0293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	105.8	95% Adjusted-CLT UCL (Chen-1995)	102
		95% Modified-t UCL (Johnson-1978)	105.5

Nonparametric Distribution Free UCLs

95% CLT UCL	103.6	95% Jackknife UCL	105.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	105.9	95% Chebyshev(Mean, Sd) UCL	108.2
97.5% Chebyshev(Mean, Sd) UCL	111.4	99% Chebyshev(Mean, Sd) UCL	117.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:26:54 AM
From File	Table 1. Parcel Analytical Results (APN32404578) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.04	Mean	6.387
Maximum	7.85	Median	7.27
SD	2.053	Std. Error of Mean	1.185
Coefficient of Variation	0.321	Skewness	-1.578
Mean of logged Data	1.814	SD of logged Data	0.363

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.847	95% Adjusted-CLT UCL (Chen-1995)	7.183
		95% Modified-t UCL (Johnson-1978)	9.668

Nonparametric Distribution Free UCLs

95% CLT UCL	8.336	95% Jackknife UCL	9.847
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	9.942	95% Chebyshev(Mean, Sd) UCL	11.55
97.5% Chebyshev(Mean, Sd) UCL	13.79	99% Chebyshev(Mean, Sd) UCL	18.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.481	Mean	1.259
Maximum	2.77	Median	0.525
SD	1.309	Std. Error of Mean	0.756
Coefficient of Variation	1.04	Skewness	1.73
Mean of logged Data	-0.119	SD of logged Data	0.986

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.466	95% Adjusted-CLT UCL (Chen-1995)	3.308
		95% Modified-t UCL (Johnson-1978)	3.591

Nonparametric Distribution Free UCLs

95% CLT UCL	2.502	95% Jackknife UCL	3.466
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.526	95% Chebyshev(Mean, Sd) UCL	4.553
97.5% Chebyshev(Mean, Sd) UCL	5.978	99% Chebyshev(Mean, Sd) UCL	8.779

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.13	Mean	11.94
Maximum	22.3	Median	11.4
SD	10.1	Std. Error of Mean	5.829
Coefficient of Variation	0.845	Skewness	0.241
Mean of logged Data	2.098	SD of logged Data	1.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.96	95% Adjusted-CLT UCL (Chen-1995)	22.4
		95% Modified-t UCL (Johnson-1978)	29.1

Nonparametric Distribution Free UCLs

95% CLT UCL	21.53	95% Jackknife UCL	28.96
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	29.43	95% Chebyshev(Mean, Sd) UCL	37.35
97.5% Chebyshev(Mean, Sd) UCL	48.34	99% Chebyshev(Mean, Sd) UCL	69.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.13	Mean	63.98
Maximum	143	Median	46.8
SD	71.99	Std. Error of Mean	41.56
Coefficient of Variation	1.125	Skewness	1.013
Mean of logged Data	3.188	SD of logged Data	2.179

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	185.3	95% Adjusted-CLT UCL (Chen-1995)	158.3
		95% Modified-t UCL (Johnson-1978)	189.4

Nonparametric Distribution Free UCLs

95% CLT UCL	132.3	95% Jackknife UCL	185.3
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	188.7	95% Chebyshev(Mean, Sd) UCL	245.1
97.5% Chebyshev(Mean, Sd) UCL	323.5	99% Chebyshev(Mean, Sd) UCL	477.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.55	Mean	119.6
Maximum	276	Median	80.1
SD	140.9	Std. Error of Mean	81.37
Coefficient of Variation	1.179	Skewness	1.161
Mean of logged Data	3.647	SD of logged Data	2.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	357.1	95% Adjusted-CLT UCL (Chen-1995)	311.7
		95% Modified-t UCL (Johnson-1978)	366.2

Nonparametric Distribution Free UCLs

95% CLT UCL	253.4	95% Jackknife UCL	357.1
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	363.6	95% Chebyshev(Mean, Sd) UCL	474.2
97.5% Chebyshev(Mean, Sd) UCL	627.7	99% Chebyshev(Mean, Sd) UCL	929.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.275	Mean	147.8
Maximum	310	Median	130

SD	154.1	Std. Error of Mean	88.99
Coefficient of Variation	1.043	Skewness	0.512
Mean of logged Data	3.93	SD of logged Data	2.416

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	407.6	95% Adjusted-CLT UCL (Chen-1995)	322.2
		95% Modified-t UCL (Johnson-1978)	412

Nonparametric Distribution Free UCLs

95% CLT UCL	294.1	95% Jackknife UCL	407.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	414.7	95% Chebyshev(Mean, Sd) UCL	535.6
97.5% Chebyshev(Mean, Sd) UCL	703.5	99% Chebyshev(Mean, Sd) UCL	1033

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.275	Mean	78.59
Maximum	168	Median	64.5
SD	83.26	Std. Error of Mean	48.07
Coefficient of Variation	1.059	Skewness	0.74
Mean of logged Data	3.492	SD of logged Data	2.054

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	219	95% Adjusted-CLT UCL (Chen-1995)	179.6
		95% Modified-t UCL (Johnson-1978)	222.4

Nonparametric Distribution Free UCLs

95% CLT UCL	157.7	95% Jackknife UCL	219
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	222.8	95% Chebyshev(Mean, Sd) UCL	288.1
97.5% Chebyshev(Mean, Sd) UCL	378.8	99% Chebyshev(Mean, Sd) UCL	556.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.37	Mean	73.69
Maximum	170	Median	48.7
SD	86.56	Std. Error of Mean	49.98
Coefficient of Variation	1.175	Skewness	1.191
Mean of logged Data	3.295	SD of logged Data	2.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	219.6	95% Adjusted-CLT UCL (Chen-1995)	192.6
		95% Modified-t UCL (Johnson-1978)	225.4

Nonparametric Distribution Free UCLs

95% CLT UCL	155.9	95% Jackknife UCL	219.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	223.6	95% Chebyshev(Mean, Sd) UCL	291.5
97.5% Chebyshev(Mean, Sd) UCL	385.8	99% Chebyshev(Mean, Sd) UCL	571

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.13	Mean	124.2
Maximum	280	Median	90.4
SD	142	Std. Error of Mean	81.97
Coefficient of Variation	1.143	Skewness	1.01
Mean of logged Data	3.632	SD of logged Data	2.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	363.5	95% Adjusted-CLT UCL (Chen-1995)	310.1
		95% Modified-t UCL (Johnson-1978)	371.5

Nonparametric Distribution Free UCLs

95% CLT UCL	259	95% Jackknife UCL	363.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	370.1	95% Chebyshev(Mean, Sd) UCL	481.5
97.5% Chebyshev(Mean, Sd) UCL	636.1	99% Chebyshev(Mean, Sd) UCL	939.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.275	Mean	24.49
Maximum	52.3	Median	17.9
SD	25.17	Std. Error of Mean	14.53
Coefficient of Variation	1.028	Skewness	1.098
Mean of logged Data	2.676	SD of logged Data	1.397

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.92	95% Adjusted-CLT UCL (Chen-1995)	58.23
		95% Modified-t UCL (Johnson-1978)	68.46

Nonparametric Distribution Free UCLs

95% CLT UCL	48.39	95% Jackknife UCL	66.92
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	68.08	95% Chebyshev(Mean, Sd) UCL	87.83
97.5% Chebyshev(Mean, Sd) UCL	115.2	99% Chebyshev(Mean, Sd) UCL	169.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.13	Mean	53.58
Maximum	83.7	Median	74.9
SD	44.77	Std. Error of Mean	25.85
Coefficient of Variation	0.836	Skewness	-1.657
Mean of logged Data	3.167	SD of logged Data	2.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	129.1	95% Adjusted-CLT UCL (Chen-1995)	69.67
		95% Modified-t UCL (Johnson-1978)	124.9

Nonparametric Distribution Free UCLs

95% CLT UCL	96.09	95% Jackknife UCL	129.1
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A

95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	131.1	95% Chebyshev(Mean, Sd) UCL	166.2
97.5% Chebyshev(Mean, Sd) UCL	215	99% Chebyshev(Mean, Sd) UCL	310.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.31	Mean	3.257
Maximum	5.44	Median	3.02
SD	2.075	Std. Error of Mean	1.198
Coefficient of Variation	0.637	Skewness	0.507
Mean of logged Data	1.023	SD of logged Data	0.715

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.755	95% Adjusted-CLT UCL (Chen-1995)	5.602
		95% Modified-t UCL (Johnson-1978)	6.813

Nonparametric Distribution Free UCLs

95% CLT UCL	5.227	95% Jackknife UCL	6.755
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.851	95% Chebyshev(Mean, Sd) UCL	8.479
97.5% Chebyshev(Mean, Sd) UCL	10.74	99% Chebyshev(Mean, Sd) UCL	15.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.275	Mean	85.63
Maximum	183	Median	70.6
SD	90.8	Std. Error of Mean	52.42
Coefficient of Variation	1.06	Skewness	0.724
Mean of logged Data	3.551	SD of logged Data	2.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	238.7	95% Adjusted-CLT UCL (Chen-1995)	195.3
		95% Modified-t UCL (Johnson-1978)	242.4

Nonparametric Distribution Free UCLs

95% CLT UCL	171.9	95% Jackknife UCL	238.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	242.9	95% Chebyshev(Mean, Sd) UCL	314.1
97.5% Chebyshev(Mean, Sd) UCL	413	99% Chebyshev(Mean, Sd) UCL	607.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.32	Mean	9.57
Maximum	12.7	Median	9.69
SD	3.192	Std. Error of Mean	1.843
Coefficient of Variation	0.334	Skewness	-0.169
Mean of logged Data	2.219	SD of logged Data	0.352

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.95	95% Adjusted-CLT UCL (Chen-1995)	12.41
		95% Modified-t UCL (Johnson-1978)	14.92

Nonparametric Distribution Free UCLs

95% CLT UCL	12.6	95% Jackknife UCL	14.95
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.1	95% Chebyshev(Mean, Sd) UCL	17.6
97.5% Chebyshev(Mean, Sd) UCL	21.08	99% Chebyshev(Mean, Sd) UCL	27.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.275	Mean	16.56
Maximum	30.5	Median	15.9
SD	13.62	Std. Error of Mean	7.866
Coefficient of Variation	0.823	Skewness	0.217
Mean of logged Data	2.457	SD of logged Data	1.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.53	95% Adjusted-CLT UCL (Chen-1995)	30.55
		95% Modified-t UCL (Johnson-1978)	39.69

Nonparametric Distribution Free UCLs

95% CLT UCL	29.5	95% Jackknife UCL	39.53
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A

95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	40.16	95% Chebyshev(Mean, Sd) UCL	50.85
97.5% Chebyshev(Mean, Sd) UCL	65.68	99% Chebyshev(Mean, Sd) UCL	94.82

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.275	Mean	61.16
Maximum	98.5	Median	81.7
SD	50.83	Std. Error of Mean	29.35
Coefficient of Variation	0.831	Skewness	-1.522
Mean of logged Data	3.393	SD of logged Data	1.913

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	146.8	95% Adjusted-CLT UCL (Chen-1995)	81.88
		95% Modified-t UCL (Johnson-1978)	142.5

Nonparametric Distribution Free UCLs

95% CLT UCL	109.4	95% Jackknife UCL	146.8
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	149.2	95% Chebyshev(Mean, Sd) UCL	189.1
97.5% Chebyshev(Mean, Sd) UCL	244.4	99% Chebyshev(Mean, Sd) UCL	353.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	18.9	Mean	19.3
Maximum	19.7	Median	19.3
SD	0.4	Std. Error of Mean	0.231
Coefficient of Variation	0.0207	Skewness	-4.00E-14
Mean of logged Data	2.96	SD of logged Data	0.0207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.97	95% Adjusted-CLT UCL (Chen-1995)	19.68
		95% Modified-t UCL (Johnson-1978)	19.97

Nonparametric Distribution Free UCLs

95% CLT UCL	19.68	95% Jackknife UCL	19.97
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	19.99	95% Chebyshev(Mean, Sd) UCL	20.31
97.5% Chebyshev(Mean, Sd) UCL	20.74	99% Chebyshev(Mean, Sd) UCL	21.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	45.7	Mean	49.03
Maximum	53.9	Median	47.5
SD	4.31	Std. Error of Mean	2.488
Coefficient of Variation	0.0879	Skewness	1.398
Mean of logged Data	3.89	SD of logged Data	0.0863

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	56.3	95% Adjusted-CLT UCL (Chen-1995)	55.27
		95% Modified-t UCL (Johnson-1978)	56.63

Nonparametric Distribution Free UCLs

95% CLT UCL	53.13	95% Jackknife UCL	56.3
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	56.5	95% Chebyshev(Mean, Sd) UCL	59.88
97.5% Chebyshev(Mean, Sd) UCL	64.57	99% Chebyshev(Mean, Sd) UCL	73.79

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	123	Mean	127
Maximum	132	Median	126
SD	4.583	Std. Error of Mean	2.646
Coefficient of Variation	0.0361	Skewness	0.935
Mean of logged Data	4.844	SD of logged Data	0.0359

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	134.7	95% Adjusted-CLT UCL (Chen-1995)	132.9
		95% Modified-t UCL (Johnson-1978)	135

Nonparametric Distribution Free UCLs

95% CLT UCL	131.4	95% Jackknife UCL	134.7

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	134.9	95% Chebyshev(Mean, Sd) UCL	138.5
97.5% Chebyshev(Mean, Sd) UCL	143.5	99% Chebyshev(Mean, Sd) UCL	153.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:29:36 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404582) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.05	Mean	7.803
Maximum	25.1	Median	3.74
SD	9.179	Std. Error of Mean	3.747
Coefficient of Variation	1.176	Skewness	1.772
Mean of logged Data	1.505	SD of logged Data	1.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.35	95% Adjusted-CLT UCL (Chen-1995)	16.86
		95% Modified-t UCL (Johnson-1978)	15.81

Nonparametric Distribution Free UCLs

95% CLT UCL	13.97	95% Jackknife UCL	15.35
95% Standard Bootstrap UCL	13.45	95% Bootstrap-t UCL	39.21
95% Hall's Bootstrap UCL	46.19	95% Percentile Bootstrap UCL	13.75
95% BCA Bootstrap UCL	15.53		
90% Chebyshev(Mean, Sd) UCL	19.04	95% Chebyshev(Mean, Sd) UCL	24.14
97.5% Chebyshev(Mean, Sd) UCL	31.2	99% Chebyshev(Mean, Sd) UCL	45.09

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.486	Mean	9.874
Maximum	52.2	Median	1.365
SD	20.76	Std. Error of Mean	8.474
Coefficient of Variation	2.102	Skewness	2.439
Mean of logged Data	0.772	SD of logged Data	1.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.95	95% Adjusted-CLT UCL (Chen-1995)	32.83
		95% Modified-t UCL (Johnson-1978)	28.35

Nonparametric Distribution Free UCLs

95% CLT UCL	23.81	95% Jackknife UCL	26.95
95% Standard Bootstrap UCL	22.74	95% Bootstrap-t UCL	400.3
95% Hall's Bootstrap UCL	210.7	95% Percentile Bootstrap UCL	26.57
95% BCA Bootstrap UCL	27.25		
90% Chebyshev(Mean, Sd) UCL	35.29	95% Chebyshev(Mean, Sd) UCL	46.81
97.5% Chebyshev(Mean, Sd) UCL	62.79	99% Chebyshev(Mean, Sd) UCL	94.19

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.63	Mean	21.42
Maximum	87	Median	3.38
SD	34.02	Std. Error of Mean	13.89
Coefficient of Variation	1.588	Skewness	1.955
Mean of logged Data	1.945	SD of logged Data	1.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	49.4	95% Adjusted-CLT UCL (Chen-1995)	56.1
		95% Modified-t UCL (Johnson-1978)	51.25

Nonparametric Distribution Free UCLs

95% CLT UCL	44.26	95% Jackknife UCL	49.4
95% Standard Bootstrap UCL	42.08	95% Bootstrap-t UCL	660.2
95% Hall's Bootstrap UCL	286.1	95% Percentile Bootstrap UCL	44.76
95% BCA Bootstrap UCL	49.58		
90% Chebyshev(Mean, Sd) UCL	63.08	95% Chebyshev(Mean, Sd) UCL	81.95
97.5% Chebyshev(Mean, Sd) UCL	108.1	99% Chebyshev(Mean, Sd) UCL	159.6

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.8	Mean	111.1
Maximum	458	Median	19.55
SD	177.7	Std. Error of Mean	72.54
Coefficient of Variation	1.599	Skewness	2.049
Mean of logged Data	3.666	SD of logged Data	1.526

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	257.3	95% Adjusted-CLT UCL (Chen-1995)	295.2
		95% Modified-t UCL (Johnson-1978)	267.4

Nonparametric Distribution Free UCLs

95% CLT UCL	230.4	95% Jackknife UCL	257.3
95% Standard Bootstrap UCL	219.8	95% Bootstrap-t UCL	3181
95% Hall's Bootstrap UCL	1800	95% Percentile Bootstrap UCL	237
95% BCA Bootstrap UCL	279.5		
90% Chebyshev(Mean, Sd) UCL	328.7	95% Chebyshev(Mean, Sd) UCL	427.3
97.5% Chebyshev(Mean, Sd) UCL	564.1	99% Chebyshev(Mean, Sd) UCL	832.8

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.6	Mean	133.1
Maximum	557	Median	24.25
SD	215.2	Std. Error of Mean	87.88
Coefficient of Variation	1.618	Skewness	2.118
Mean of logged Data	3.88	SD of logged Data	1.481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	310.1	95% Adjusted-CLT UCL (Chen-1995)	358.8
		95% Modified-t UCL (Johnson-1978)	322.8

Nonparametric Distribution Free UCLs

95% CLT UCL	277.6	95% Jackknife UCL	310.1
95% Standard Bootstrap UCL	265.3	95% Bootstrap-t UCL	4150
95% Hall's Bootstrap UCL	2150	95% Percentile Bootstrap UCL	289.3
95% BCA Bootstrap UCL	315		
90% Chebyshev(Mean, Sd) UCL	396.7	95% Chebyshev(Mean, Sd) UCL	516.1
97.5% Chebyshev(Mean, Sd) UCL	681.8	99% Chebyshev(Mean, Sd) UCL	1007

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22	Mean	161.3
Maximum	619	Median	37.05
SD	237.8	Std. Error of Mean	97.08
Coefficient of Variation	1.475	Skewness	1.943
Mean of logged Data	4.221	SD of logged Data	1.383

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	356.9	95% Adjusted-CLT UCL (Chen-1995)	403.2
		95% Modified-t UCL (Johnson-1978)	369.7

Nonparametric Distribution Free UCLs

95% CLT UCL	320.9	95% Jackknife UCL	356.9
95% Standard Bootstrap UCL	308.2	95% Bootstrap-t UCL	2909
95% Hall's Bootstrap UCL	2568	95% Percentile Bootstrap UCL	325.5
95% BCA Bootstrap UCL	363.1		
90% Chebyshev(Mean, Sd) UCL	452.5	95% Chebyshev(Mean, Sd) UCL	584.4
97.5% Chebyshev(Mean, Sd) UCL	767.5	99% Chebyshev(Mean, Sd) UCL	1127

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.2	Mean	104.4
Maximum	345	Median	46.7
SD	127.8	Std. Error of Mean	52.16
Coefficient of Variation	1.224	Skewness	1.776
Mean of logged Data	4.054	SD of logged Data	1.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	209.5	95% Adjusted-CLT UCL (Chen-1995)	230.6
		95% Modified-t UCL (Johnson-1978)	215.8

Nonparametric Distribution Free UCLs

95% CLT UCL	190.2	95% Jackknife UCL	209.5

95% Standard Bootstrap UCL	183.1	95% Bootstrap-t UCL	686.1
95% Hall's Bootstrap UCL	656	95% Percentile Bootstrap UCL	189.1
95% BCA Bootstrap UCL	215.9		
90% Chebyshev(Mean, Sd) UCL	260.9	95% Chebyshev(Mean, Sd) UCL	331.8
97.5% Chebyshev(Mean, Sd) UCL	430.1	99% Chebyshev(Mean, Sd) UCL	623.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.17	Mean	67.23
Maximum	268	Median	14.65
SD	103.2	Std. Error of Mean	42.11
Coefficient of Variation	1.534	Skewness	2.024
Mean of logged Data	3.284	SD of logged Data	1.43

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	152.1	95% Adjusted-CLT UCL (Chen-1995)	173.7
		95% Modified-t UCL (Johnson-1978)	157.9

Nonparametric Distribution Free UCLs

95% CLT UCL	136.5	95% Jackknife UCL	152.1
95% Standard Bootstrap UCL	131.6	95% Bootstrap-t UCL	1574
95% Hall's Bootstrap UCL	1067	95% Percentile Bootstrap UCL	138.8
95% BCA Bootstrap UCL	165.6		
90% Chebyshev(Mean, Sd) UCL	193.6	95% Chebyshev(Mean, Sd) UCL	250.8
97.5% Chebyshev(Mean, Sd) UCL	330.2	99% Chebyshev(Mean, Sd) UCL	486.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.1	Mean	154
Maximum	671	Median	28.05
SD	259.2	Std. Error of Mean	105.8
Coefficient of Variation	1.683	Skewness	2.225
Mean of logged Data	4	SD of logged Data	1.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	367.2	95% Adjusted-CLT UCL (Chen-1995)	430.8
		95% Modified-t UCL (Johnson-1978)	383.2

Nonparametric Distribution Free UCLs

95% CLT UCL	328	95% Jackknife UCL	367.2
95% Standard Bootstrap UCL	314.7	95% Bootstrap-t UCL	4453
95% Hall's Bootstrap UCL	2670	95% Percentile Bootstrap UCL	347.5
95% BCA Bootstrap UCL	371.4		
90% Chebyshev(Mean, Sd) UCL	471.4	95% Chebyshev(Mean, Sd) UCL	615.2
97.5% Chebyshev(Mean, Sd) UCL	814.8	99% Chebyshev(Mean, Sd) UCL	1207

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.68	Mean	26.5
Maximum	103	Median	6.95
SD	39.24	Std. Error of Mean	16.02
Coefficient of Variation	1.481	Skewness	2.036
Mean of logged Data	2.46	SD of logged Data	1.332

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.78	95% Adjusted-CLT UCL (Chen-1995)	67.08
		95% Modified-t UCL (Johnson-1978)	61

Nonparametric Distribution Free UCLs

95% CLT UCL	52.85	95% Jackknife UCL	58.78
95% Standard Bootstrap UCL	51.02	95% Bootstrap-t UCL	533.9
95% Hall's Bootstrap UCL	329.2	95% Percentile Bootstrap UCL	53.41
95% BCA Bootstrap UCL	59.53		
90% Chebyshev(Mean, Sd) UCL	74.56	95% Chebyshev(Mean, Sd) UCL	96.33
97.5% Chebyshev(Mean, Sd) UCL	126.5	99% Chebyshev(Mean, Sd) UCL	185.9

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.1	Mean	177.5
Maximum	669	Median	32.2
SD	262.6	Std. Error of Mean	107.2
Coefficient of Variation	1.48	Skewness	1.762
Mean of logged Data	4.197	SD of logged Data	1.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	393.5	95% Adjusted-CLT UCL (Chen-1995)	436.2
		95% Modified-t UCL (Johnson-1978)	406.3

Nonparametric Distribution Free UCLs

95% CLT UCL	353.8	95% Jackknife UCL	393.5
95% Standard Bootstrap UCL	337.9	95% Bootstrap-t UCL	4437
95% Hall's Bootstrap UCL	2951	95% Percentile Bootstrap UCL	349.1
95% BCA Bootstrap UCL	393.2		
90% Chebyshev(Mean, Sd) UCL	499	95% Chebyshev(Mean, Sd) UCL	644.7
97.5% Chebyshev(Mean, Sd) UCL	846.9	99% Chebyshev(Mean, Sd) UCL	1244

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.936	Mean	3.813
Maximum	16.2	Median	1.4
SD	6.076	Std. Error of Mean	2.48
Coefficient of Variation	1.594	Skewness	2.437
Mean of logged Data	0.685	SD of logged Data	1.053

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.811	95% Adjusted-CLT UCL (Chen-1995)	10.53
		95% Modified-t UCL (Johnson-1978)	9.222

Nonparametric Distribution Free UCLs

95% CLT UCL	7.892	95% Jackknife UCL	8.811
95% Standard Bootstrap UCL	7.552	95% Bootstrap-t UCL	69.51
95% Hall's Bootstrap UCL	46.54	95% Percentile Bootstrap UCL	8.723
95% BCA Bootstrap UCL	8.857		
90% Chebyshev(Mean, Sd) UCL	11.25	95% Chebyshev(Mean, Sd) UCL	14.62
97.5% Chebyshev(Mean, Sd) UCL	19.3	99% Chebyshev(Mean, Sd) UCL	28.49

Suggested UCL to Use

95% Hall's Bootstrap UCL	46.54

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.3	Mean	105.4
Maximum	391	Median	27.65
SD	149.9	Std. Error of Mean	61.18
Coefficient of Variation	1.422	Skewness	1.874
Mean of logged Data	3.853	SD of logged Data	1.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	228.7	95% Adjusted-CLT UCL (Chen-1995)	256
		95% Modified-t UCL (Johnson-1978)	236.5

Nonparametric Distribution Free UCLs

95% CLT UCL	206	95% Jackknife UCL	228.7
95% Standard Bootstrap UCL	197.5	95% Bootstrap-t UCL	1985
95% Hall's Bootstrap UCL	1444	95% Percentile Bootstrap UCL	207.1
95% BCA Bootstrap UCL	251.4		
90% Chebyshev(Mean, Sd) UCL	288.9	95% Chebyshev(Mean, Sd) UCL	372.1
97.5% Chebyshev(Mean, Sd) UCL	487.5	99% Chebyshev(Mean, Sd) UCL	714.1

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.68	Mean	13.62
Maximum	59.7	Median	5.37
SD	22.64	Std. Error of Mean	9.244
Coefficient of Variation	1.663	Skewness	2.416
Mean of logged Data	1.828	SD of logged Data	1.214

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.24	95% Adjusted-CLT UCL (Chen-1995)	38.57
		95% Modified-t UCL (Johnson-1978)	33.76

Nonparametric Distribution Free UCLs

95% CLT UCL	28.82	95% Jackknife UCL	32.24
95% Standard Bootstrap UCL	27.7	95% Bootstrap-t UCL	164.2
95% Hall's Bootstrap UCL	175	95% Percentile Bootstrap UCL	31.92
95% BCA Bootstrap UCL	32.69		
90% Chebyshev(Mean, Sd) UCL	41.35	95% Chebyshev(Mean, Sd) UCL	53.91
97.5% Chebyshev(Mean, Sd) UCL	71.35	99% Chebyshev(Mean, Sd) UCL	105.6

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	7.96	Mean	91.16
Maximum	367	Median	14.5
SD	143.6	Std. Error of Mean	58.63
Coefficient of Variation	1.576	Skewness	1.928
Mean of logged Data	3.403	SD of logged Data	1.604

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	209.3	95% Adjusted-CLT UCL (Chen-1995)	236.9
		95% Modified-t UCL (Johnson-1978)	217

Nonparametric Distribution Free UCLs

95% CLT UCL	187.6	95% Jackknife UCL	209.3
95% Standard Bootstrap UCL	179.9	95% Bootstrap-t UCL	2414
95% Hall's Bootstrap UCL	1341	95% Percentile Bootstrap UCL	190
95% BCA Bootstrap UCL	210.2		
90% Chebyshev(Mean, Sd) UCL	267.1	95% Chebyshev(Mean, Sd) UCL	346.7
97.5% Chebyshev(Mean, Sd) UCL	457.3	99% Chebyshev(Mean, Sd) UCL	674.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21	Mean	187
Maximum	776	Median	32.65
SD	300.6	Std. Error of Mean	122.7
Coefficient of Variation	1.607	Skewness	2.077
Mean of logged Data	4.197	SD of logged Data	1.512

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	434.3	95% Adjusted-CLT UCL (Chen-1995)	500
		95% Modified-t UCL (Johnson-1978)	451.6

Nonparametric Distribution Free UCLs

95% CLT UCL	388.9	95% Jackknife UCL	434.3
95% Standard Bootstrap UCL	370.5	95% Bootstrap-t UCL	6025
95% Hall's Bootstrap UCL	3926	95% Percentile Bootstrap UCL	402.6
95% BCA Bootstrap UCL	441.4		
90% Chebyshev(Mean, Sd) UCL	555.2	95% Chebyshev(Mean, Sd) UCL	721.9
97.5% Chebyshev(Mean, Sd) UCL	953.4	99% Chebyshev(Mean, Sd) UCL	1408

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.3	Mean	18.4

Maximum	35.2	Median	15.65
SD	8.323	Std. Error of Mean	3.398
Coefficient of Variation	0.452	Skewness	2.327
Mean of logged Data	2.85	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.25	95% Adjusted-CLT UCL (Chen-1995)	27.44
		95% Modified-t UCL (Johnson-1978)	25.79

Nonparametric Distribution Free UCLs

95% CLT UCL	23.99	95% Jackknife UCL	25.25
95% Standard Bootstrap UCL	23.4	95% Bootstrap-t UCL	47.87
95% Hall's Bootstrap UCL	54.7	95% Percentile Bootstrap UCL	24.92
95% BCA Bootstrap UCL	25.58		
90% Chebyshev(Mean, Sd) UCL	28.59	95% Chebyshev(Mean, Sd) UCL	33.21
97.5% Chebyshev(Mean, Sd) UCL	39.62	99% Chebyshev(Mean, Sd) UCL	52.21

Suggested UCL to Use

95% Student's-t UCL	25.25	or 95% Modified-t UCL	25.79

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	15.4	Mean	17.67
Maximum	18.9	Median	18.2
SD	1.44	Std. Error of Mean	0.588
Coefficient of Variation	0.0815	Skewness	-0.963
Mean of logged Data	2.869	SD of logged Data	0.084

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.85	95% Adjusted-CLT UCL (Chen-1995)	18.39

		95% Modified-t UCL (Johnson-1978)	18.81

Nonparametric Distribution Free UCLs

95% CLT UCL	18.63	95% Jackknife UCL	18.85
95% Standard Bootstrap UCL	18.54	95% Bootstrap-t UCL	18.57
95% Hall's Bootstrap UCL	18.29	95% Percentile Bootstrap UCL	18.53
95% BCA Bootstrap UCL	18.38		
90% Chebyshev(Mean, Sd) UCL	19.43	95% Chebyshev(Mean, Sd) UCL	20.23
97.5% Chebyshev(Mean, Sd) UCL	21.34	99% Chebyshev(Mean, Sd) UCL	23.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	53.8	Mean	80.77
Maximum	110	Median	79.6
SD	24.8	Std. Error of Mean	10.12
Coefficient of Variation	0.307	Skewness	0.0666
Mean of logged Data	4.351	SD of logged Data	0.315

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	101.2	95% Adjusted-CLT UCL (Chen-1995)	97.71
		95% Modified-t UCL (Johnson-1978)	101.2

Nonparametric Distribution Free UCLs

95% CLT UCL	97.42	95% Jackknife UCL	101.2
95% Standard Bootstrap UCL	95.85	95% Bootstrap-t UCL	102.5
95% Hall's Bootstrap UCL	90.3	95% Percentile Bootstrap UCL	95.77
95% BCA Bootstrap UCL	95.87		
90% Chebyshev(Mean, Sd) UCL	111.1	95% Chebyshev(Mean, Sd) UCL	124.9
97.5% Chebyshev(Mean, Sd) UCL	144	99% Chebyshev(Mean, Sd) UCL	181.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:26:29 AM
From File	Table 1. Parcel Analytical Results (APN32404624) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.07	Mean	7.283
Maximum	13.2	Median	7.37
SD	5.36	Std. Error of Mean	2.188
Coefficient of Variation	0.736	Skewness	0.0293
Mean of logged Data	1.681	SD of logged Data	0.904

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.69	95% Adjusted-CLT UCL (Chen-1995)	10.91
		95% Modified-t UCL (Johnson-1978)	11.7

Nonparametric Distribution Free UCLs

95% CLT UCL	10.88	95% Jackknife UCL	11.69
95% Standard Bootstrap UCL	10.57	95% Bootstrap-t UCL	11.95
95% Hall's Bootstrap UCL	9.134	95% Percentile Bootstrap UCL	10.55
95% BCA Bootstrap UCL	10.55		
90% Chebyshev(Mean, Sd) UCL	13.85	95% Chebyshev(Mean, Sd) UCL	16.82
97.5% Chebyshev(Mean, Sd) UCL	20.95	99% Chebyshev(Mean, Sd) UCL	29.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.81	Mean	9.049
Maximum	16.1	Median	9.25
SD	7.276	Std. Error of Mean	2.971
Coefficient of Variation	0.804	Skewness	-0.0138
Mean of logged Data	1.801	SD of logged Data	1.062

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.03	95% Adjusted-CLT UCL (Chen-1995)	13.92
		95% Modified-t UCL (Johnson-1978)	15.03

Nonparametric Distribution Free UCLs

95% CLT UCL	13.94	95% Jackknife UCL	15.03
95% Standard Bootstrap UCL	13.48	95% Bootstrap-t UCL	15.2
95% Hall's Bootstrap UCL	11.48	95% Percentile Bootstrap UCL	13.5
95% BCA Bootstrap UCL	13.55		
90% Chebyshev(Mean, Sd) UCL	17.96	95% Chebyshev(Mean, Sd) UCL	22
97.5% Chebyshev(Mean, Sd) UCL	27.6	99% Chebyshev(Mean, Sd) UCL	38.61

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.205	Mean	14.51
Maximum	24.8	Median	14.96
SD	11.05	Std. Error of Mean	4.509
Coefficient of Variation	0.761	Skewness	-0.0189
Mean of logged Data	2.334	SD of logged Data	0.967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.6	95% Adjusted-CLT UCL (Chen-1995)	21.89
		95% Modified-t UCL (Johnson-1978)	23.59

Nonparametric Distribution Free UCLs

95% CLT UCL	21.93	95% Jackknife UCL	23.6
95% Standard Bootstrap UCL	21.22	95% Bootstrap-t UCL	23.61
95% Hall's Bootstrap UCL	18.21	95% Percentile Bootstrap UCL	21.32
95% BCA Bootstrap UCL	21.16		
90% Chebyshev(Mean, Sd) UCL	28.04	95% Chebyshev(Mean, Sd) UCL	34.16
97.5% Chebyshev(Mean, Sd) UCL	42.67	99% Chebyshev(Mean, Sd) UCL	59.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.79	Mean	7.199
Maximum	11.8	Median	7.203
SD	4.645	Std. Error of Mean	1.896
Coefficient of Variation	0.645	Skewness	0.00447
Mean of logged Data	1.761	SD of logged Data	0.742

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.02	95% Adjusted-CLT UCL (Chen-1995)	10.32
		95% Modified-t UCL (Johnson-1978)	11.02

Nonparametric Distribution Free UCLs

95% CLT UCL	10.32	95% Jackknife UCL	11.02
95% Standard Bootstrap UCL	10	95% Bootstrap-t UCL	11.11
95% Hall's Bootstrap UCL	8.731	95% Percentile Bootstrap UCL	10.07
95% BCA Bootstrap UCL	10.05		
90% Chebyshev(Mean, Sd) UCL	12.89	95% Chebyshev(Mean, Sd) UCL	15.46

97.5% Chebyshev(Mean, Sd) UCL	19.04	99% Chebyshev(Mean, Sd) UCL	26.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.085	Mean	5.749
Maximum	9.85	Median	5.58
SD	3.643	Std. Error of Mean	1.487
Coefficient of Variation	0.634	Skewness	0.0525
Mean of logged Data	1.546	SD of logged Data	0.723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.746	95% Adjusted-CLT UCL (Chen-1995)	8.23
		95% Modified-t UCL (Johnson-1978)	8.751

Nonparametric Distribution Free UCLs

95% CLT UCL	8.196	95% Jackknife UCL	8.746
95% Standard Bootstrap UCL	8.012	95% Bootstrap-t UCL	8.897
95% Hall's Bootstrap UCL	7.01	95% Percentile Bootstrap UCL	8.003
95% BCA Bootstrap UCL	8.123		
90% Chebyshev(Mean, Sd) UCL	10.21	95% Chebyshev(Mean, Sd) UCL	12.23
97.5% Chebyshev(Mean, Sd) UCL	15.04	99% Chebyshev(Mean, Sd) UCL	20.55

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5

		Number of Missing Observations	0
Minimum	2.085	Mean	10.87
Maximum	20	Median	11.33
SD	8.48	Std. Error of Mean	3.462
Coefficient of Variation	0.78	Skewness	-0.00862
Mean of logged Data	2.01	SD of logged Data	1.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.85	95% Adjusted-CLT UCL (Chen-1995)	16.55
		95% Modified-t UCL (Johnson-1978)	17.85

Nonparametric Distribution Free UCLs

95% CLT UCL	16.57	95% Jackknife UCL	17.85
95% Standard Bootstrap UCL	16.04	95% Bootstrap-t UCL	18.02
95% Hall's Bootstrap UCL	13.88	95% Percentile Bootstrap UCL	16.02
95% BCA Bootstrap UCL	16.01		
90% Chebyshev(Mean, Sd) UCL	21.26	95% Chebyshev(Mean, Sd) UCL	25.96
97.5% Chebyshev(Mean, Sd) UCL	32.49	99% Chebyshev(Mean, Sd) UCL	45.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.12	Mean	3.158
Maximum	3.205	Median	3.153
SD	0.0333	Std. Error of Mean	0.0136
Coefficient of Variation	0.0105	Skewness	0.403
Mean of logged Data	1.15	SD of logged Data	0.0105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.185	95% Adjusted-CLT UCL (Chen-1995)	3.182
		95% Modified-t UCL (Johnson-1978)	3.185

Nonparametric Distribution Free UCLs

95% CLT UCL	3.18	95% Jackknife UCL	3.185
95% Standard Bootstrap UCL	3.178	95% Bootstrap-t UCL	3.188
95% Hall's Bootstrap UCL	3.183	95% Percentile Bootstrap UCL	3.178
95% BCA Bootstrap UCL	3.178		
90% Chebyshev(Mean, Sd) UCL	3.198	95% Chebyshev(Mean, Sd) UCL	3.217
97.5% Chebyshev(Mean, Sd) UCL	3.242	99% Chebyshev(Mean, Sd) UCL	3.293

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	10.82
Maximum	21.3	Median	11.04
SD	8.742	Std. Error of Mean	3.569
Coefficient of Variation	0.808	Skewness	0.0663
Mean of logged Data	1.968	SD of logged Data	1.091

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.01	95% Adjusted-CLT UCL (Chen-1995)	16.79
		95% Modified-t UCL (Johnson-1978)	18.03

Nonparametric Distribution Free UCLs

95% CLT UCL	16.69	95% Jackknife UCL	18.01
95% Standard Bootstrap UCL	16.21	95% Bootstrap-t UCL	18.69
95% Hall's Bootstrap UCL	14.13	95% Percentile Bootstrap UCL	16.55
95% BCA Bootstrap UCL	16.15		
90% Chebyshev(Mean, Sd) UCL	21.53	95% Chebyshev(Mean, Sd) UCL	26.38
97.5% Chebyshev(Mean, Sd) UCL	33.11	99% Chebyshev(Mean, Sd) UCL	46.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.205	Mean	8.539
Maximum	14.5	Median	8.385
SD	5.54	Std. Error of Mean	2.262
Coefficient of Variation	0.649	Skewness	0.0316
Mean of logged Data	1.929	SD of logged Data	0.746

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.1	95% Adjusted-CLT UCL (Chen-1995)	12.29
		95% Modified-t UCL (Johnson-1978)	13.1

Nonparametric Distribution Free UCLs

95% CLT UCL	12.26	95% Jackknife UCL	13.1
95% Standard Bootstrap UCL	12.02	95% Bootstrap-t UCL	13.25
95% Hall's Bootstrap UCL	10.41	95% Percentile Bootstrap UCL	11.97
95% BCA Bootstrap UCL	11.97		
90% Chebyshev(Mean, Sd) UCL	15.32	95% Chebyshev(Mean, Sd) UCL	18.4
97.5% Chebyshev(Mean, Sd) UCL	22.66	99% Chebyshev(Mean, Sd) UCL	31.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.915	Mean	0.961

Maximum	1.07	Median	0.953
SD	0.057	Std. Error of Mean	0.0233
Coefficient of Variation	0.0594	Skewness	1.789
Mean of logged Data	-0.0414	SD of logged Data	0.0575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.008	95% Adjusted-CLT UCL (Chen-1995)	1.017
		95% Modified-t UCL (Johnson-1978)	1.011

Nonparametric Distribution Free UCLs

95% CLT UCL	0.999	95% Jackknife UCL	1.008
95% Standard Bootstrap UCL	0.997	95% Bootstrap-t UCL	1.05
95% Hall's Bootstrap UCL	1.166	95% Percentile Bootstrap UCL	0.999
95% BCA Bootstrap UCL	1.007		
90% Chebyshev(Mean, Sd) UCL	1.031	95% Chebyshev(Mean, Sd) UCL	1.062
97.5% Chebyshev(Mean, Sd) UCL	1.106	99% Chebyshev(Mean, Sd) UCL	1.193

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.165	Mean	3.969
Maximum	5.38	Median	3.813
SD	0.925	Std. Error of Mean	0.378
Coefficient of Variation	0.233	Skewness	0.595
Mean of logged Data	1.357	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.73	95% Adjusted-CLT UCL (Chen-1995)	4.688

		95% Modified-t UCL (Johnson-1978)	4.746

Nonparametric Distribution Free UCLs

95% CLT UCL	4.59	95% Jackknife UCL	4.73
95% Standard Bootstrap UCL	4.533	95% Bootstrap-t UCL	5.022
95% Hall's Bootstrap UCL	4.44	95% Percentile Bootstrap UCL	4.544
95% BCA Bootstrap UCL	4.548		
90% Chebyshev(Mean, Sd) UCL	5.102	95% Chebyshev(Mean, Sd) UCL	5.616
97.5% Chebyshev(Mean, Sd) UCL	6.328	99% Chebyshev(Mean, Sd) UCL	7.727

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	10.77
Maximum	20.8	Median	10.33
SD	8.014	Std. Error of Mean	3.272
Coefficient of Variation	0.744	Skewness	0.154
Mean of logged Data	2.076	SD of logged Data	0.893

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.37	95% Adjusted-CLT UCL (Chen-1995)	16.37
		95% Modified-t UCL (Johnson-1978)	17.4

Nonparametric Distribution Free UCLs

95% CLT UCL	16.16	95% Jackknife UCL	17.37
95% Standard Bootstrap UCL	15.7	95% Bootstrap-t UCL	18.24
95% Hall's Bootstrap UCL	13.72	95% Percentile Bootstrap UCL	15.87
95% BCA Bootstrap UCL	15.88		
90% Chebyshev(Mean, Sd) UCL	20.59	95% Chebyshev(Mean, Sd) UCL	25.04
97.5% Chebyshev(Mean, Sd) UCL	31.21	99% Chebyshev(Mean, Sd) UCL	43.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.5	Mean	17.52
Maximum	23.8	Median	16.55
SD	3.134	Std. Error of Mean	1.279
Coefficient of Variation	0.179	Skewness	2.257
Mean of logged Data	2.852	SD of logged Data	0.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.09	95% Adjusted-CLT UCL (Chen-1995)	20.88
		95% Modified-t UCL (Johnson-1978)	20.29

Nonparametric Distribution Free UCLs

95% CLT UCL	19.62	95% Jackknife UCL	20.09
95% Standard Bootstrap UCL	19.41	95% Bootstrap-t UCL	26.57
95% Hall's Bootstrap UCL	29.74	95% Percentile Bootstrap UCL	19.9
95% BCA Bootstrap UCL	20.13		
90% Chebyshev(Mean, Sd) UCL	21.35	95% Chebyshev(Mean, Sd) UCL	23.09
97.5% Chebyshev(Mean, Sd) UCL	25.51	99% Chebyshev(Mean, Sd) UCL	30.25

Suggested UCL to Use

95% Student's-t UCL	20.09	or 95% Modified-t UCL	20.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11	Mean	12.37
Maximum	14.1	Median	12.2
SD	1.331	Std. Error of Mean	0.543
Coefficient of Variation	0.108	Skewness	0.239
Mean of logged Data	2.51	SD of logged Data	0.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.46	95% Adjusted-CLT UCL (Chen-1995)	13.32
		95% Modified-t UCL (Johnson-1978)	13.47

Nonparametric Distribution Free UCLs

95% CLT UCL	13.26	95% Jackknife UCL	13.46
95% Standard Bootstrap UCL	13.19	95% Bootstrap-t UCL	13.54
95% Hall's Bootstrap UCL	12.93	95% Percentile Bootstrap UCL	13.18
95% BCA Bootstrap UCL	13.2		
90% Chebyshev(Mean, Sd) UCL	14	95% Chebyshev(Mean, Sd) UCL	14.73
97.5% Chebyshev(Mean, Sd) UCL	15.76	99% Chebyshev(Mean, Sd) UCL	17.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	54.6	Mean	60.67
Maximum	69	Median	60.7
SD	5.502	Std. Error of Mean	2.246
Coefficient of Variation	0.0907	Skewness	0.455
Mean of logged Data	4.102	SD of logged Data	0.0899

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	65.19	95% Adjusted-CLT UCL (Chen-1995)	64.81
		95% Modified-t UCL (Johnson-1978)	65.26

Nonparametric Distribution Free UCLs

95% CLT UCL	64.36	95% Jackknife UCL	65.19
95% Standard Bootstrap UCL	64.07	95% Bootstrap-t UCL	66.07

95% Hall's Bootstrap UCL	63.89	95% Percentile Bootstrap UCL	64.25
95% BCA Bootstrap UCL	64.25		
90% Chebyshev(Mean, Sd) UCL	67.41	95% Chebyshev(Mean, Sd) UCL	70.46
97.5% Chebyshev(Mean, Sd) UCL	74.69	99% Chebyshev(Mean, Sd) UCL	83.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:28:23 AM
From File	Table 1. Parcel Analytical Reults (APN32404625) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.601	Mean	0.889
Maximum	0.995	Median	0.935
SD	0.146	Std. Error of Mean	0.0596
Coefficient of Variation	0.164	Skewness	-2.106
Mean of logged Data	-0.131	SD of logged Data	0.189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.009	95% Adjusted-CLT UCL (Chen-1995)	0.933
		95% Modified-t UCL (Johnson-1978)	1.001

Nonparametric Distribution Free UCLs

95% CLT UCL	0.987	95% Jackknife UCL	1.009
95% Standard Bootstrap UCL	0.979	95% Bootstrap-t UCL	0.972
95% Hall's Bootstrap UCL	0.948	95% Percentile Bootstrap UCL	0.965
95% BCA Bootstrap UCL	0.952		
90% Chebyshev(Mean, Sd) UCL	1.068	95% Chebyshev(Mean, Sd) UCL	1.149
97.5% Chebyshev(Mean, Sd) UCL	1.262	99% Chebyshev(Mean, Sd) UCL	1.483

Suggested UCL to Use

95% Student's-t UCL	1.009	or 95% Modified-t UCL	1.001

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	5.918
Maximum	10.6	Median	5.97
SD	3.754	Std. Error of Mean	1.533
Coefficient of Variation	0.634	Skewness	0.095
Mean of logged Data	1.57	SD of logged Data	0.74

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.006	95% Adjusted-CLT UCL (Chen-1995)	8.502
		95% Modified-t UCL (Johnson-1978)	9.016

Nonparametric Distribution Free UCLs

95% CLT UCL	8.439	95% Jackknife UCL	9.006
95% Standard Bootstrap UCL	8.191	95% Bootstrap-t UCL	9.39
95% Hall's Bootstrap UCL	7.422	95% Percentile Bootstrap UCL	8.263
95% BCA Bootstrap UCL	8.188		
90% Chebyshev(Mean, Sd) UCL	10.52	95% Chebyshev(Mean, Sd) UCL	12.6
97.5% Chebyshev(Mean, Sd) UCL	15.49	99% Chebyshev(Mean, Sd) UCL	21.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.55	Mean	6.75
Maximum	12.2	Median	7.015
SD	4.776	Std. Error of Mean	1.95
Coefficient of Variation	0.708	Skewness	-0.0403
Mean of logged Data	1.608	SD of logged Data	0.925

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.68	95% Adjusted-CLT UCL (Chen-1995)	9.923
		95% Modified-t UCL (Johnson-1978)	10.67

Nonparametric Distribution Free UCLs

95% CLT UCL	9.957	95% Jackknife UCL	10.68
95% Standard Bootstrap UCL	9.673	95% Bootstrap-t UCL	10.71
95% Hall's Bootstrap UCL	8.725	95% Percentile Bootstrap UCL	9.638
95% BCA Bootstrap UCL	9.675		
90% Chebyshev(Mean, Sd) UCL	12.6	95% Chebyshev(Mean, Sd) UCL	15.25
97.5% Chebyshev(Mean, Sd) UCL	18.93	99% Chebyshev(Mean, Sd) UCL	26.15

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.71	Mean	10.57
Maximum	18.6	Median	11.5
SD	7.042	Std. Error of Mean	2.875
Coefficient of Variation	0.666	Skewness	-0.0956
Mean of logged Data	2.096	SD of logged Data	0.857

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.36	95% Adjusted-CLT UCL (Chen-1995)	15.17
		95% Modified-t UCL (Johnson-1978)	16.34

Nonparametric Distribution Free UCLs

95% CLT UCL	15.29	95% Jackknife UCL	16.36
95% Standard Bootstrap UCL	14.88	95% Bootstrap-t UCL	16.29
95% Hall's Bootstrap UCL	13.51	95% Percentile Bootstrap UCL	14.8

95% BCA Bootstrap UCL	14.87		
90% Chebyshev(Mean, Sd) UCL	19.19	95% Chebyshev(Mean, Sd) UCL	23.1
97.5% Chebyshev(Mean, Sd) UCL	28.52	99% Chebyshev(Mean, Sd) UCL	39.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	6.235
Maximum	9.23	Median	6.585
SD	2.636	Std. Error of Mean	1.076
Coefficient of Variation	0.423	Skewness	-0.195
Mean of logged Data	1.743	SD of logged Data	0.473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.404	95% Adjusted-CLT UCL (Chen-1995)	7.914
		95% Modified-t UCL (Johnson-1978)	8.389

Nonparametric Distribution Free UCLs

95% CLT UCL	8.005	95% Jackknife UCL	8.404
95% Standard Bootstrap UCL	7.823	95% Bootstrap-t UCL	8.414
95% Hall's Bootstrap UCL	7.571	95% Percentile Bootstrap UCL	7.842
95% BCA Bootstrap UCL	7.729		
90% Chebyshev(Mean, Sd) UCL	9.464	95% Chebyshev(Mean, Sd) UCL	10.93
97.5% Chebyshev(Mean, Sd) UCL	12.96	99% Chebyshev(Mean, Sd) UCL	16.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.07	Mean	4.648
Maximum	7.47	Median	4.87
SD	2.252	Std. Error of Mean	0.919
Coefficient of Variation	0.485	Skewness	-0.0907
Mean of logged Data	1.419	SD of logged Data	0.556

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.5	95% Adjusted-CLT UCL (Chen-1995)	6.123
		95% Modified-t UCL (Johnson-1978)	6.494

Nonparametric Distribution Free UCLs

95% CLT UCL	6.16	95% Jackknife UCL	6.5
95% Standard Bootstrap UCL	6.018	95% Bootstrap-t UCL	6.506
95% Hall's Bootstrap UCL	5.833	95% Percentile Bootstrap UCL	5.96
95% BCA Bootstrap UCL	5.958		
90% Chebyshev(Mean, Sd) UCL	7.406	95% Chebyshev(Mean, Sd) UCL	8.655
97.5% Chebyshev(Mean, Sd) UCL	10.39	99% Chebyshev(Mean, Sd) UCL	13.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness. These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.06	Mean	9.033
Maximum	16	Median	9.9
SD	6.314	Std. Error of Mean	2.578

Coefficient of Variation	0.699	Skewness	-0.129
Mean of logged Data	1.896	SD of logged Data	0.941

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.23	95% Adjusted-CLT UCL (Chen-1995)	13.13
		95% Modified-t UCL (Johnson-1978)	14.21

Nonparametric Distribution Free UCLs

95% CLT UCL	13.27	95% Jackknife UCL	14.23
95% Standard Bootstrap UCL	12.86	95% Bootstrap-t UCL	14.14
95% Hall's Bootstrap UCL	11.73	95% Percentile Bootstrap UCL	12.98
95% BCA Bootstrap UCL	12.76		
90% Chebyshev(Mean, Sd) UCL	16.77	95% Chebyshev(Mean, Sd) UCL	20.27
97.5% Chebyshev(Mean, Sd) UCL	25.13	99% Chebyshev(Mean, Sd) UCL	34.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.41	Mean	2.953
Maximum	3.32	Median	3.085
SD	0.405	Std. Error of Mean	0.165
Coefficient of Variation	0.137	Skewness	-0.643
Mean of logged Data	1.074	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3.286	95% Adjusted-CLT UCL (Chen-1995)	3.178
		95% Modified-t UCL (Johnson-1978)	3.279

Nonparametric Distribution Free UCLs

95% CLT UCL	3.225	95% Jackknife UCL	3.286
95% Standard Bootstrap UCL	3.204	95% Bootstrap-t UCL	3.237
95% Hall's Bootstrap UCL	3.126	95% Percentile Bootstrap UCL	3.196
95% BCA Bootstrap UCL	3.158		
90% Chebyshev(Mean, Sd) UCL	3.449	95% Chebyshev(Mean, Sd) UCL	3.673
97.5% Chebyshev(Mean, Sd) UCL	3.985	99% Chebyshev(Mean, Sd) UCL	4.598

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.42	Mean	9.805
Maximum	18.2	Median	9.91
SD	7.288	Std. Error of Mean	2.975
Coefficient of Variation	0.743	Skewness	0.048
Mean of logged Data	1.968	SD of logged Data	0.926

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.8	95% Adjusted-CLT UCL (Chen-1995)	14.76
		95% Modified-t UCL (Johnson-1978)	15.81

Nonparametric Distribution Free UCLs

95% CLT UCL	14.7	95% Jackknife UCL	15.8
95% Standard Bootstrap UCL	14.19	95% Bootstrap-t UCL	16.42
95% Hall's Bootstrap UCL	12.42	95% Percentile Bootstrap UCL	14.27
95% BCA Bootstrap UCL	14.28		
90% Chebyshev(Mean, Sd) UCL	18.73	95% Chebyshev(Mean, Sd) UCL	22.77
97.5% Chebyshev(Mean, Sd) UCL	28.39	99% Chebyshev(Mean, Sd) UCL	39.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	6.552
Maximum	10.2	Median	6.855
SD	2.983	Std. Error of Mean	1.218
Coefficient of Variation	0.455	Skewness	-0.0809
Mean of logged Data	1.779	SD of logged Data	0.509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.006	95% Adjusted-CLT UCL (Chen-1995)	8.512
		95% Modified-t UCL (Johnson-1978)	8.999

Nonparametric Distribution Free UCLs

95% CLT UCL	8.555	95% Jackknife UCL	9.006
95% Standard Bootstrap UCL	8.337	95% Bootstrap-t UCL	9.096
95% Hall's Bootstrap UCL	7.98	95% Percentile Bootstrap UCL	8.403
95% BCA Bootstrap UCL	8.32		
90% Chebyshev(Mean, Sd) UCL	10.21	95% Chebyshev(Mean, Sd) UCL	11.86
97.5% Chebyshev(Mean, Sd) UCL	14.16	99% Chebyshev(Mean, Sd) UCL	18.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	0.895	Mean	1.008
Maximum	1.31	Median	0.965
SD	0.153	Std. Error of Mean	0.0624
Coefficient of Variation	0.152	Skewness	2.128
Mean of logged Data	-0.00102	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.133	95% Adjusted-CLT UCL (Chen-1995)	1.168
		95% Modified-t UCL (Johnson-1978)	1.142

Nonparametric Distribution Free UCLs

95% CLT UCL	1.11	95% Jackknife UCL	1.133
95% Standard Bootstrap UCL	1.1	95% Bootstrap-t UCL	1.344
95% Hall's Bootstrap UCL	1.584	95% Percentile Bootstrap UCL	1.123
95% BCA Bootstrap UCL	1.143		
90% Chebyshev(Mean, Sd) UCL	1.195	95% Chebyshev(Mean, Sd) UCL	1.279
97.5% Chebyshev(Mean, Sd) UCL	1.397	99% Chebyshev(Mean, Sd) UCL	1.628

Suggested UCL to Use

95% Student's-t UCL	1.133	or 95% Modified-t UCL	1.142

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	4.081
Maximum	5.38	Median	3.893
SD	0.957	Std. Error of Mean	0.391
Coefficient of Variation	0.235	Skewness	0.352
Mean of logged Data	1.384	SD of logged Data	0.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.868	95% Adjusted-CLT UCL (Chen-1995)	4.784
		95% Modified-t UCL (Johnson-1978)	4.878

Nonparametric Distribution Free UCLs

95% CLT UCL	4.724	95% Jackknife UCL	4.868
95% Standard Bootstrap UCL	4.672	95% Bootstrap-t UCL	4.879
95% Hall's Bootstrap UCL	4.471	95% Percentile Bootstrap UCL	4.699
95% BCA Bootstrap UCL	4.709		
90% Chebyshev(Mean, Sd) UCL	5.253	95% Chebyshev(Mean, Sd) UCL	5.784
97.5% Chebyshev(Mean, Sd) UCL	6.521	99% Chebyshev(Mean, Sd) UCL	7.969

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.32	Mean	9.428
Maximum	17	Median	9.565
SD	7.038	Std. Error of Mean	2.873
Coefficient of Variation	0.746	Skewness	0.00879
Mean of logged Data	1.923	SD of logged Data	0.936

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.22	95% Adjusted-CLT UCL (Chen-1995)	14.17
		95% Modified-t UCL (Johnson-1978)	15.22

Nonparametric Distribution Free UCLs

95% CLT UCL	14.15	95% Jackknife UCL	15.22
95% Standard Bootstrap UCL	13.66	95% Bootstrap-t UCL	15.57
95% Hall's Bootstrap UCL	11.87	95% Percentile Bootstrap UCL	13.69
95% BCA Bootstrap UCL	13.69		
90% Chebyshev(Mean, Sd) UCL	18.05	95% Chebyshev(Mean, Sd) UCL	21.95
97.5% Chebyshev(Mean, Sd) UCL	27.37	99% Chebyshev(Mean, Sd) UCL	38.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13	Mean	14.72
Maximum	16.3	Median	14.85
SD	1.463	Std. Error of Mean	0.597
Coefficient of Variation	0.0994	Skewness	-0.18
Mean of logged Data	2.685	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.92	95% Adjusted-CLT UCL (Chen-1995)	15.65
		95% Modified-t UCL (Johnson-1978)	15.91

Nonparametric Distribution Free UCLs

95% CLT UCL	15.7	95% Jackknife UCL	15.92
95% Standard Bootstrap UCL	15.61	95% Bootstrap-t UCL	15.76
95% Hall's Bootstrap UCL	15.52	95% Percentile Bootstrap UCL	15.62
95% BCA Bootstrap UCL	15.63		
90% Chebyshev(Mean, Sd) UCL	16.51	95% Chebyshev(Mean, Sd) UCL	17.32
97.5% Chebyshev(Mean, Sd) UCL	18.45	99% Chebyshev(Mean, Sd) UCL	20.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	19

Maximum	54.9	Median	12.35
SD	17.6	Std. Error of Mean	7.186
Coefficient of Variation	0.926	Skewness	2.44
Mean of logged Data	2.724	SD of logged Data	0.631

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.48	95% Adjusted-CLT UCL (Chen-1995)	38.47
		95% Modified-t UCL (Johnson-1978)	34.67

Nonparametric Distribution Free UCLs

95% CLT UCL	30.82	95% Jackknife UCL	33.48
95% Standard Bootstrap UCL	29.91	95% Bootstrap-t UCL	239
95% Hall's Bootstrap UCL	247.5	95% Percentile Bootstrap UCL	33.23
95% BCA Bootstrap UCL	33.67		
90% Chebyshev(Mean, Sd) UCL	40.56	95% Chebyshev(Mean, Sd) UCL	50.32
97.5% Chebyshev(Mean, Sd) UCL	63.88	99% Chebyshev(Mean, Sd) UCL	90.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	50.32

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	50.4	Mean	51.42
Maximum	54.2	Median	50.85
SD	1.455	Std. Error of Mean	0.594
Coefficient of Variation	0.0283	Skewness	1.848
Mean of logged Data	3.94	SD of logged Data	0.0278

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.61	95% Adjusted-CLT UCL (Chen-1995)	52.87

		95% Modified-t UCL (Johnson-1978)	52.69

Nonparametric Distribution Free UCLs

95% CLT UCL	52.39	95% Jackknife UCL	52.61
95% Standard Bootstrap UCL	52.31	95% Bootstrap-t UCL	54.12
95% Hall's Bootstrap UCL	56.11	95% Percentile Bootstrap UCL	52.45
95% BCA Bootstrap UCL	52.67		
90% Chebyshev(Mean, Sd) UCL	53.2	95% Chebyshev(Mean, Sd) UCL	54.01
97.5% Chebyshev(Mean, Sd) UCL	55.13	99% Chebyshev(Mean, Sd) UCL	57.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:30:17 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404629A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.66	Mean	1.479
Maximum	2.11	Median	1.62
SD	0.553	Std. Error of Mean	0.226
Coefficient of Variation	0.374	Skewness	-0.611
Mean of logged Data	0.318	SD of logged Data	0.445

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.934	95% Adjusted-CLT UCL (Chen-1995)	1.79
		95% Modified-t UCL (Johnson-1978)	1.924

Nonparametric Distribution Free UCLs

95% CLT UCL	1.85	95% Jackknife UCL	1.934
95% Standard Bootstrap UCL	1.82	95% Bootstrap-t UCL	1.857
95% Hall's Bootstrap UCL	1.746	95% Percentile Bootstrap UCL	1.813
95% BCA Bootstrap UCL	1.786		
90% Chebyshev(Mean, Sd) UCL	2.156	95% Chebyshev(Mean, Sd) UCL	2.463
97.5% Chebyshev(Mean, Sd) UCL	2.888	99% Chebyshev(Mean, Sd) UCL	3.724

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.453	Mean	0.606
Maximum	0.799	Median	0.559
SD	0.151	Std. Error of Mean	0.0618
Coefficient of Variation	0.25	Skewness	0.577
Mean of logged Data	-0.526	SD of logged Data	0.244

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.731	95% Adjusted-CLT UCL (Chen-1995)	0.724
		95% Modified-t UCL (Johnson-1978)	0.733

Nonparametric Distribution Free UCLs

95% CLT UCL	0.708	95% Jackknife UCL	0.731
95% Standard Bootstrap UCL	0.699	95% Bootstrap-t UCL	0.884
95% Hall's Bootstrap UCL	0.823	95% Percentile Bootstrap UCL	0.701
95% BCA Bootstrap UCL	0.708		
90% Chebyshev(Mean, Sd) UCL	0.792	95% Chebyshev(Mean, Sd) UCL	0.876
97.5% Chebyshev(Mean, Sd) UCL	0.992	99% Chebyshev(Mean, Sd) UCL	1.222

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.59	Mean	2.14
Maximum	3.48	Median	2.035
SD	0.697	Std. Error of Mean	0.285
Coefficient of Variation	0.326	Skewness	1.829
Mean of logged Data	0.724	SD of logged Data	0.287

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.714	95% Adjusted-CLT UCL (Chen-1995)	2.836
		95% Modified-t UCL (Johnson-1978)	2.749

Nonparametric Distribution Free UCLs

95% CLT UCL	2.608	95% Jackknife UCL	2.714
95% Standard Bootstrap UCL	2.567	95% Bootstrap-t UCL	3.146
95% Hall's Bootstrap UCL	4.628	95% Percentile Bootstrap UCL	2.622
95% BCA Bootstrap UCL	2.748		
90% Chebyshev(Mean, Sd) UCL	2.994	95% Chebyshev(Mean, Sd) UCL	3.381
97.5% Chebyshev(Mean, Sd) UCL	3.918	99% Chebyshev(Mean, Sd) UCL	4.973

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.17	Mean	25
Maximum	78.3	Median	15.9
SD	27.14	Std. Error of Mean	11.08
Coefficient of Variation	1.086	Skewness	2.055
Mean of logged Data	2.805	SD of logged Data	0.984

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.32	95% Adjusted-CLT UCL (Chen-1995)	53.16
		95% Modified-t UCL (Johnson-1978)	48.87

Nonparametric Distribution Free UCLs

95% CLT UCL	43.22	95% Jackknife UCL	47.32
95% Standard Bootstrap UCL	41.44	95% Bootstrap-t UCL	91.04
95% Hall's Bootstrap UCL	122.8	95% Percentile Bootstrap UCL	44.83
95% BCA Bootstrap UCL	49.33		
90% Chebyshev(Mean, Sd) UCL	58.24	95% Chebyshev(Mean, Sd) UCL	73.3
97.5% Chebyshev(Mean, Sd) UCL	94.2	99% Chebyshev(Mean, Sd) UCL	135.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.31	Mean	34.67
Maximum	106	Median	23.4
SD	36.31	Std. Error of Mean	14.82
Coefficient of Variation	1.047	Skewness	2.054
Mean of logged Data	3.164	SD of logged Data	0.944

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	64.54	95% Adjusted-CLT UCL (Chen-1995)	72.33
		95% Modified-t UCL (Johnson-1978)	66.61

Nonparametric Distribution Free UCLs

95% CLT UCL	59.05	95% Jackknife UCL	64.54
95% Standard Bootstrap UCL	56.63	95% Bootstrap-t UCL	118.7
95% Hall's Bootstrap UCL	165.4	95% Percentile Bootstrap UCL	59.69
95% BCA Bootstrap UCL	65.35		
90% Chebyshev(Mean, Sd) UCL	79.14	95% Chebyshev(Mean, Sd) UCL	99.28
97.5% Chebyshev(Mean, Sd) UCL	127.2	99% Chebyshev(Mean, Sd) UCL	182.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.99	Mean	51.85
Maximum	164	Median	32.65

SD	57.02	Std. Error of Mean	23.28
Coefficient of Variation	1.1	Skewness	2.073
Mean of logged Data	3.531	SD of logged Data	0.981

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	98.75	95% Adjusted-CLT UCL (Chen-1995)	111.2
		95% Modified-t UCL (Johnson-1978)	102

Nonparametric Distribution Free UCLs

95% CLT UCL	90.14	95% Jackknife UCL	98.75
95% Standard Bootstrap UCL	86.02	95% Bootstrap-t UCL	201
95% Hall's Bootstrap UCL	256.8	95% Percentile Bootstrap UCL	93.32
95% BCA Bootstrap UCL	100.6		
90% Chebyshev(Mean, Sd) UCL	121.7	95% Chebyshev(Mean, Sd) UCL	153.3
97.5% Chebyshev(Mean, Sd) UCL	197.2	99% Chebyshev(Mean, Sd) UCL	283.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.79	Mean	30.78
Maximum	82.3	Median	22.55
SD	27.96	Std. Error of Mean	11.42
Coefficient of Variation	0.908	Skewness	1.53
Mean of logged Data	3.066	SD of logged Data	0.979

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	53.78	95% Adjusted-CLT UCL (Chen-1995)	57.18
		95% Modified-t UCL (Johnson-1978)	54.97

Nonparametric Distribution Free UCLs

95% CLT UCL	49.56	95% Jackknife UCL	53.78
95% Standard Bootstrap UCL	47.56	95% Bootstrap-t UCL	83.03
95% Hall's Bootstrap UCL	138.1	95% Percentile Bootstrap UCL	49.65
95% BCA Bootstrap UCL	53.47		
90% Chebyshev(Mean, Sd) UCL	65.03	95% Chebyshev(Mean, Sd) UCL	80.54
97.5% Chebyshev(Mean, Sd) UCL	102.1	99% Chebyshev(Mean, Sd) UCL	144.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.61	Mean	19.39
Maximum	62.2	Median	12.95
SD	21.66	Std. Error of Mean	8.844
Coefficient of Variation	1.117	Skewness	2.112
Mean of logged Data	2.544	SD of logged Data	0.975

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.21	95% Adjusted-CLT UCL (Chen-1995)	42.09
		95% Modified-t UCL (Johnson-1978)	38.48

Nonparametric Distribution Free UCLs

95% CLT UCL	33.94	95% Jackknife UCL	37.21
95% Standard Bootstrap UCL	32.76	95% Bootstrap-t UCL	70.58
95% Hall's Bootstrap UCL	94.43	95% Percentile Bootstrap UCL	35.54
95% BCA Bootstrap UCL	38.42		
90% Chebyshev(Mean, Sd) UCL	45.92	95% Chebyshev(Mean, Sd) UCL	57.94
97.5% Chebyshev(Mean, Sd) UCL	74.62	99% Chebyshev(Mean, Sd) UCL	107.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.96	Mean	40.58
Maximum	123	Median	27.65
SD	42.11	Std. Error of Mean	17.19
Coefficient of Variation	1.038	Skewness	2.02
Mean of logged Data	3.318	SD of logged Data	0.958

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	75.21	95% Adjusted-CLT UCL (Chen-1995)	84
		95% Modified-t UCL (Johnson-1978)	77.58

Nonparametric Distribution Free UCLs

95% CLT UCL	68.85	95% Jackknife UCL	75.21
95% Standard Bootstrap UCL	66.22	95% Bootstrap-t UCL	129.8
95% Hall's Bootstrap UCL	193.7	95% Percentile Bootstrap UCL	70.99
95% BCA Bootstrap UCL	79.32		
90% Chebyshev(Mean, Sd) UCL	92.15	95% Chebyshev(Mean, Sd) UCL	115.5
97.5% Chebyshev(Mean, Sd) UCL	147.9	99% Chebyshev(Mean, Sd) UCL	211.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.83	Mean	8.127
Maximum	22.4	Median	6.225
SD	7.315	Std. Error of Mean	2.986
Coefficient of Variation	0.9	Skewness	1.995
Mean of logged Data	1.83	SD of logged Data	0.757

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.14	95% Adjusted-CLT UCL (Chen-1995)	15.64
		95% Modified-t UCL (Johnson-1978)	14.55

Nonparametric Distribution Free UCLs

95% CLT UCL	13.04	95% Jackknife UCL	14.14
95% Standard Bootstrap UCL	12.53	95% Bootstrap-t UCL	23.2
95% Hall's Bootstrap UCL	31.49	95% Percentile Bootstrap UCL	13.44
95% BCA Bootstrap UCL	14.35		
90% Chebyshev(Mean, Sd) UCL	17.09	95% Chebyshev(Mean, Sd) UCL	21.14
97.5% Chebyshev(Mean, Sd) UCL	26.78	99% Chebyshev(Mean, Sd) UCL	37.84

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.07	Mean	28.61
Maximum	80.8	Median	20.9
SD	26.72	Std. Error of Mean	10.91
Coefficient of Variation	0.934	Skewness	1.996
Mean of logged Data	3.057	SD of logged Data	0.821

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.59	95% Adjusted-CLT UCL (Chen-1995)	56.05
		95% Modified-t UCL (Johnson-1978)	52.08

Nonparametric Distribution Free UCLs

95% CLT UCL	46.56	95% Jackknife UCL	50.59
95% Standard Bootstrap UCL	45.61	95% Bootstrap-t UCL	83.2
95% Hall's Bootstrap UCL	118.7	95% Percentile Bootstrap UCL	48.1

95% BCA Bootstrap UCL	50.55		
90% Chebyshev(Mean, Sd) UCL	61.34	95% Chebyshev(Mean, Sd) UCL	76.16
97.5% Chebyshev(Mean, Sd) UCL	96.74	99% Chebyshev(Mean, Sd) UCL	137.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.01	Mean	1.233
Maximum	1.3	Median	1.288
SD	0.113	Std. Error of Mean	0.0463
Coefficient of Variation	0.092	Skewness	-2.083
Mean of logged Data	0.205	SD of logged Data	0.0989

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.326	95% Adjusted-CLT UCL (Chen-1995)	1.267
		95% Modified-t UCL (Johnson-1978)	1.319

Nonparametric Distribution Free UCLs

95% CLT UCL	1.309	95% Jackknife UCL	1.326
95% Standard Bootstrap UCL	1.302	95% Bootstrap-t UCL	1.293
95% Hall's Bootstrap UCL	1.276	95% Percentile Bootstrap UCL	1.292
95% BCA Bootstrap UCL	1.281		
90% Chebyshev(Mean, Sd) UCL	1.371	95% Chebyshev(Mean, Sd) UCL	1.434
97.5% Chebyshev(Mean, Sd) UCL	1.522	99% Chebyshev(Mean, Sd) UCL	1.693

Suggested UCL to Use

95% Student's-t UCL	1.326	or 95% Modified-t UCL	1.319

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.1	Mean	28.22
Maximum	86.4	Median	18.25
SD	29.82	Std. Error of Mean	12.17
Coefficient of Variation	1.057	Skewness	1.999
Mean of logged Data	2.944	SD of logged Data	0.962

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.75	95% Adjusted-CLT UCL (Chen-1995)	58.86
		95% Modified-t UCL (Johnson-1978)	54.4

Nonparametric Distribution Free UCLs

95% CLT UCL	48.24	95% Jackknife UCL	52.75
95% Standard Bootstrap UCL	46.19	95% Bootstrap-t UCL	89.28
95% Hall's Bootstrap UCL	133.2	95% Percentile Bootstrap UCL	48.27
95% BCA Bootstrap UCL	53.82		
90% Chebyshev(Mean, Sd) UCL	64.74	95% Chebyshev(Mean, Sd) UCL	81.28
97.5% Chebyshev(Mean, Sd) UCL	104.2	99% Chebyshev(Mean, Sd) UCL	149.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.22	Mean	2.147
Maximum	2.66	Median	2.32
SD	0.547	Std. Error of Mean	0.223
Coefficient of Variation	0.255	Skewness	-1.122
Mean of logged Data	0.731	SD of logged Data	0.295

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.596	95% Adjusted-CLT UCL (Chen-1995)	2.404
		95% Modified-t UCL (Johnson-1978)	2.579

Nonparametric Distribution Free UCLs

95% CLT UCL	2.514	95% Jackknife UCL	2.596
95% Standard Bootstrap UCL	2.479	95% Bootstrap-t UCL	2.474
95% Hall's Bootstrap UCL	2.396	95% Percentile Bootstrap UCL	2.46
95% BCA Bootstrap UCL	2.423		
90% Chebyshev(Mean, Sd) UCL	2.816	95% Chebyshev(Mean, Sd) UCL	3.119
97.5% Chebyshev(Mean, Sd) UCL	3.54	99% Chebyshev(Mean, Sd) UCL	4.367

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.19	Mean	8.038
Maximum	17	Median	7.17
SD	4.841	Std. Error of Mean	1.976
Coefficient of Variation	0.602	Skewness	1.512
Mean of logged Data	1.948	SD of logged Data	0.566

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.02	95% Adjusted-CLT UCL (Chen-1995)	12.59
		95% Modified-t UCL (Johnson-1978)	12.22

Nonparametric Distribution Free UCLs

95% CLT UCL	11.29	95% Jackknife UCL	12.02
95% Standard Bootstrap UCL	11.03	95% Bootstrap-t UCL	15.08
95% Hall's Bootstrap UCL	25.18	95% Percentile Bootstrap UCL	11.33
95% BCA Bootstrap UCL	12.19		
90% Chebyshev(Mean, Sd) UCL	13.97	95% Chebyshev(Mean, Sd) UCL	16.65
97.5% Chebyshev(Mean, Sd) UCL	20.38	99% Chebyshev(Mean, Sd) UCL	27.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.61	Mean	27.87
Maximum	76.3	Median	20.65
SD	24.86	Std. Error of Mean	10.15
Coefficient of Variation	0.892	Skewness	1.963
Mean of logged Data	3.048	SD of logged Data	0.807

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.32	95% Adjusted-CLT UCL (Chen-1995)	53.26
		95% Modified-t UCL (Johnson-1978)	49.68

Nonparametric Distribution Free UCLs

95% CLT UCL	44.56	95% Jackknife UCL	48.32
95% Standard Bootstrap UCL	43.04	95% Bootstrap-t UCL	75.36
95% Hall's Bootstrap UCL	119.5	95% Percentile Bootstrap UCL	44.62
95% BCA Bootstrap UCL	49.33		
90% Chebyshev(Mean, Sd) UCL	58.32	95% Chebyshev(Mean, Sd) UCL	72.11
97.5% Chebyshev(Mean, Sd) UCL	91.26	99% Chebyshev(Mean, Sd) UCL	128.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.685	Mean	0.783
Maximum	1.08	Median	0.743
SD	0.148	Std. Error of Mean	0.0603
Coefficient of Variation	0.189	Skewness	2.272
Mean of logged Data	-0.257	SD of logged Data	0.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.905	95% Adjusted-CLT UCL (Chen-1995)	0.942
		95% Modified-t UCL (Johnson-1978)	0.914

Nonparametric Distribution Free UCLs

95% CLT UCL	0.883	95% Jackknife UCL	0.905
95% Standard Bootstrap UCL	0.877	95% Bootstrap-t UCL	1.182
95% Hall's Bootstrap UCL	1.465	95% Percentile Bootstrap UCL	0.903
95% BCA Bootstrap UCL	0.911		
90% Chebyshev(Mean, Sd) UCL	0.964	95% Chebyshev(Mean, Sd) UCL	1.046
97.5% Chebyshev(Mean, Sd) UCL	1.16	99% Chebyshev(Mean, Sd) UCL	1.383

Suggested UCL to Use

95% Student's-t UCL	0.905	or 95% Modified-t UCL	0.914

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.8	Mean	14.48
Maximum	17	Median	14.05
SD	1.798	Std. Error of Mean	0.734
Coefficient of Variation	0.124	Skewness	0.526
Mean of logged Data	2.667	SD of logged Data	0.122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.96	95% Adjusted-CLT UCL (Chen-1995)	15.86
		95% Modified-t UCL (Johnson-1978)	15.99

Nonparametric Distribution Free UCLs

95% CLT UCL	15.69	95% Jackknife UCL	15.96
95% Standard Bootstrap UCL	15.59	95% Bootstrap-t UCL	16.31
95% Hall's Bootstrap UCL	15.8	95% Percentile Bootstrap UCL	15.57
95% BCA Bootstrap UCL	15.65		
90% Chebyshev(Mean, Sd) UCL	16.69	95% Chebyshev(Mean, Sd) UCL	17.68
97.5% Chebyshev(Mean, Sd) UCL	19.07	99% Chebyshev(Mean, Sd) UCL	21.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26.8	Mean	82.43
Maximum	291	Median	39.2
SD	103.5	Std. Error of Mean	42.25
Coefficient of Variation	1.255	Skewness	2.319
Mean of logged Data	3.976	SD of logged Data	0.907

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	167.6	95% Adjusted-CLT UCL (Chen-1995)	194.7
		95% Modified-t UCL (Johnson-1978)	174.2

Nonparametric Distribution Free UCLs

95% CLT UCL	151.9	95% Jackknife UCL	167.6
95% Standard Bootstrap UCL	144.5	95% Bootstrap-t UCL	825.8
95% Hall's Bootstrap UCL	591.7	95% Percentile Bootstrap UCL	161.9
95% BCA Bootstrap UCL	204.2		
90% Chebyshev(Mean, Sd) UCL	209.2	95% Chebyshev(Mean, Sd) UCL	266.6

97.5% Chebyshev(Mean, Sd) UCL	346.3	99% Chebyshev(Mean, Sd) UCL	502.8

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	57	Mean	83.15
Maximum	113	Median	85.4
SD	20.07	Std. Error of Mean	8.192
Coefficient of Variation	0.241	Skewness	0.192
Mean of logged Data	4.396	SD of logged Data	0.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.66	95% Adjusted-CLT UCL (Chen-1995)	97.31
		95% Modified-t UCL (Johnson-1978)	99.76

Nonparametric Distribution Free UCLs

95% CLT UCL	96.62	95% Jackknife UCL	99.66
95% Standard Bootstrap UCL	95.36	95% Bootstrap-t UCL	99.48
95% Hall's Bootstrap UCL	98.02	95% Percentile Bootstrap UCL	94.63
95% BCA Bootstrap UCL	96.07		
90% Chebyshev(Mean, Sd) UCL	107.7	95% Chebyshev(Mean, Sd) UCL	118.9
97.5% Chebyshev(Mean, Sd) UCL	134.3	99% Chebyshev(Mean, Sd) UCL	164.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:32:17 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404631b) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.27	Mean	1.46
Maximum	1.78	Median	1.33
SD	0.279	Std. Error of Mean	0.161
Coefficient of Variation	0.191	Skewness	1.642
Mean of logged Data	0.367	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.93	95% Adjusted-CLT UCL (Chen-1995)	1.888
		95% Modified-t UCL (Johnson-1978)	1.955

Nonparametric Distribution Free UCLs

95% CLT UCL	1.725	95% Jackknife UCL	1.93
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.943	95% Chebyshev(Mean, Sd) UCL	2.161
97.5% Chebyshev(Mean, Sd) UCL	2.465	99% Chebyshev(Mean, Sd) UCL	3.061

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	1.69	Mean	2.02
Maximum	2.53	Median	1.84
SD	0.448	Std. Error of Mean	0.259
Coefficient of Variation	0.222	Skewness	1.516
Mean of logged Data	0.688	SD of logged Data	0.213

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.775	95% Adjusted-CLT UCL (Chen-1995)	2.687
		95% Modified-t UCL (Johnson-1978)	2.813

Nonparametric Distribution Free UCLs

95% CLT UCL	2.445	95% Jackknife UCL	2.775
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.796	95% Chebyshev(Mean, Sd) UCL	3.147
97.5% Chebyshev(Mean, Sd) UCL	3.635	99% Chebyshev(Mean, Sd) UCL	4.594

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.8	Mean	14.1
Maximum	16.6	Median	13.9
SD	2.406	Std. Error of Mean	1.389
Coefficient of Variation	0.171	Skewness	0.371
Mean of logged Data	2.636	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	18.16	95% Adjusted-CLT UCL (Chen-1995)	16.7
		95% Modified-t UCL (Johnson-1978)	18.21

Nonparametric Distribution Free UCLs

95% CLT UCL	16.39	95% Jackknife UCL	18.16
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	18.27	95% Chebyshev(Mean, Sd) UCL	20.16
97.5% Chebyshev(Mean, Sd) UCL	22.78	99% Chebyshev(Mean, Sd) UCL	27.92

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.115	Mean	15.27
Maximum	24.9	Median	18.8
SD	11.8	Std. Error of Mean	6.81
Coefficient of Variation	0.772	Skewness	-1.226
Mean of logged Data	2.299	SD of logged Data	1.35

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.16	95% Adjusted-CLT UCL (Chen-1995)	21.32
		95% Modified-t UCL (Johnson-1978)	34.35

Nonparametric Distribution Free UCLs

95% CLT UCL	26.47	95% Jackknife UCL	35.16
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	35.7	95% Chebyshev(Mean, Sd) UCL	44.96
97.5% Chebyshev(Mean, Sd) UCL	57.8	99% Chebyshev(Mean, Sd) UCL	83.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.255	Mean	24.59
Maximum	38.7	Median	31.8
SD	18.79	Std. Error of Mean	10.85
Coefficient of Variation	0.764	Skewness	-1.473
Mean of logged Data	2.765	SD of logged Data	1.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.27	95% Adjusted-CLT UCL (Chen-1995)	32.57
		95% Modified-t UCL (Johnson-1978)	54.73

Nonparametric Distribution Free UCLs

95% CLT UCL	42.43	95% Jackknife UCL	56.27
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	57.13	95% Chebyshev(Mean, Sd) UCL	71.88
97.5% Chebyshev(Mean, Sd) UCL	92.34	99% Chebyshev(Mean, Sd) UCL	132.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	10.3	Mean	12.63
Maximum	15	Median	12.6
SD	2.35	Std. Error of Mean	1.357
Coefficient of Variation	0.186	Skewness	0.0638
Mean of logged Data	2.525	SD of logged Data	0.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.6	95% Adjusted-CLT UCL (Chen-1995)	14.92
		95% Modified-t UCL (Johnson-1978)	16.6

Nonparametric Distribution Free UCLs

95% CLT UCL	14.87	95% Jackknife UCL	16.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	16.7	95% Chebyshev(Mean, Sd) UCL	18.55
97.5% Chebyshev(Mean, Sd) UCL	21.11	99% Chebyshev(Mean, Sd) UCL	26.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.02	Mean	4.978
Maximum	10.8	Median	2.115
SD	5.042	Std. Error of Mean	2.911
Coefficient of Variation	1.013	Skewness	1.731
Mean of logged Data	1.277	SD of logged Data	0.955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.48	95% Adjusted-CLT UCL (Chen-1995)	12.88
		95% Modified-t UCL (Johnson-1978)	13.96

Nonparametric Distribution Free UCLs

95% CLT UCL	9.766	95% Jackknife UCL	13.48
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.71	95% Chebyshev(Mean, Sd) UCL	17.67
97.5% Chebyshev(Mean, Sd) UCL	23.16	99% Chebyshev(Mean, Sd) UCL	33.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.7	Mean	19.83
Maximum	23.1	Median	20.7
SD	3.775	Std. Error of Mean	2.18
Coefficient of Variation	0.19	Skewness	-0.979
Mean of logged Data	2.975	SD of logged Data	0.199

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.2	95% Adjusted-CLT UCL (Chen-1995)	22.1
		95% Modified-t UCL (Johnson-1978)	25.99

Nonparametric Distribution Free UCLs

95% CLT UCL	23.42	95% Jackknife UCL	26.2
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	26.37	95% Chebyshev(Mean, Sd) UCL	29.33
97.5% Chebyshev(Mean, Sd) UCL	33.45	99% Chebyshev(Mean, Sd) UCL	41.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	16.7	Mean	22.1
Maximum	27.2	Median	22.4
SD	5.256	Std. Error of Mean	3.035
Coefficient of Variation	0.238	Skewness	-0.256
Mean of logged Data	3.076	SD of logged Data	0.246

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.96	95% Adjusted-CLT UCL (Chen-1995)	26.61
		95% Modified-t UCL (Johnson-1978)	30.89

Nonparametric Distribution Free UCLs

95% CLT UCL	27.09	95% Jackknife UCL	30.96
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	31.2	95% Chebyshev(Mean, Sd) UCL	35.33
97.5% Chebyshev(Mean, Sd) UCL	41.05	99% Chebyshev(Mean, Sd) UCL	52.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.29	Mean	1.355
Maximum	1.47	Median	1.305
SD	0.0999	Std. Error of Mean	0.0577
Coefficient of Variation	0.0737	Skewness	1.688
Mean of logged Data	0.302	SD of logged Data	0.0723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.523	95% Adjusted-CLT UCL (Chen-1995)	1.51
		95% Modified-t UCL (Johnson-1978)	1.533

Nonparametric Distribution Free UCLs

95% CLT UCL	1.45	95% Jackknife UCL	1.523
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.528	95% Chebyshev(Mean, Sd) UCL	1.606
97.5% Chebyshev(Mean, Sd) UCL	1.715	99% Chebyshev(Mean, Sd) UCL	1.929

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.255	Mean	12.69
Maximum	19.9	Median	14.9
SD	8.541	Std. Error of Mean	4.931
Coefficient of Variation	0.673	Skewness	-1.089
Mean of logged Data	2.291	SD of logged Data	0.973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.08	95% Adjusted-CLT UCL (Chen-1995)	17.48
		95% Modified-t UCL (Johnson-1978)	26.57

Nonparametric Distribution Free UCLs

95% CLT UCL	20.8	95% Jackknife UCL	27.08
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	27.48	95% Chebyshev(Mean, Sd) UCL	34.18
97.5% Chebyshev(Mean, Sd) UCL	43.48	99% Chebyshev(Mean, Sd) UCL	61.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.8	Mean	2.283
Maximum	2.89	Median	2.16
SD	0.555	Std. Error of Mean	0.321
Coefficient of Variation	0.243	Skewness	0.95
Mean of logged Data	0.806	SD of logged Data	0.239

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.22	95% Adjusted-CLT UCL (Chen-1995)	2.999
		95% Modified-t UCL (Johnson-1978)	3.249

Nonparametric Distribution Free UCLs

95% CLT UCL	2.811	95% Jackknife UCL	3.22
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.245	95% Chebyshev(Mean, Sd) UCL	3.681
97.5% Chebyshev(Mean, Sd) UCL	4.286	99% Chebyshev(Mean, Sd) UCL	5.474

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	7.9	Mean	10.63
Maximum	14	Median	10
SD	3.099	Std. Error of Mean	1.789
Coefficient of Variation	0.291	Skewness	0.881
Mean of logged Data	2.336	SD of logged Data	0.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.86	95% Adjusted-CLT UCL (Chen-1995)	14.55
		95% Modified-t UCL (Johnson-1978)	16.01

Nonparametric Distribution Free UCLs

95% CLT UCL	13.58	95% Jackknife UCL	15.86
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	16	95% Chebyshev(Mean, Sd) UCL	18.43
97.5% Chebyshev(Mean, Sd) UCL	21.81	99% Chebyshev(Mean, Sd) UCL	28.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	15.3	Mean	20.37
Maximum	25	Median	20.8
SD	4.864	Std. Error of Mean	2.809
Coefficient of Variation	0.239	Skewness	-0.398
Mean of logged Data	2.994	SD of logged Data	0.248

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.57	95% Adjusted-CLT UCL (Chen-1995)	24.3
		95% Modified-t UCL (Johnson-1978)	28.46

Nonparametric Distribution Free UCLs

95% CLT UCL	24.99	95% Jackknife UCL	28.57
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	28.79	95% Chebyshev(Mean, Sd) UCL	32.61
97.5% Chebyshev(Mean, Sd) UCL	37.91	99% Chebyshev(Mean, Sd) UCL	48.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	13	Mean	14.23
Maximum	15	Median	14.7
SD	1.079	Std. Error of Mean	0.623
Coefficient of Variation	0.0758	Skewness	-1.583
Mean of logged Data	2.654	SD of logged Data	0.0774

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.05	95% Adjusted-CLT UCL (Chen-1995)	14.65
		95% Modified-t UCL (Johnson-1978)	15.96

Nonparametric Distribution Free UCLs

95% CLT UCL	15.26	95% Jackknife UCL	16.05
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	16.1	95% Chebyshev(Mean, Sd) UCL	16.95
97.5% Chebyshev(Mean, Sd) UCL	18.12	99% Chebyshev(Mean, Sd) UCL	20.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	19.5	Mean	21.57
Maximum	23.6	Median	21.6
SD	2.05	Std. Error of Mean	1.184
Coefficient of Variation	0.0951	Skewness	-0.0731
Mean of logged Data	3.068	SD of logged Data	0.0955

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.02	95% Adjusted-CLT UCL (Chen-1995)	23.46
		95% Modified-t UCL (Johnson-1978)	25.01

Nonparametric Distribution Free UCLs

95% CLT UCL	23.51	95% Jackknife UCL	25.02
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.12	95% Chebyshev(Mean, Sd) UCL	26.73

97.5% Chebyshev(Mean, Sd) UCL	28.96	99% Chebyshev(Mean, Sd) UCL	33.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	73.4	Mean	76.63
Maximum	79.3	Median	77.2
SD	2.991	Std. Error of Mean	1.727
Coefficient of Variation	0.039	Skewness	-0.822
Mean of logged Data	4.339	SD of logged Data	0.0393

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	81.67	95% Adjusted-CLT UCL (Chen-1995)	78.6
		95% Modified-t UCL (Johnson-1978)	81.54

Nonparametric Distribution Free UCLs

95% CLT UCL	79.47	95% Jackknife UCL	81.67
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	81.81	95% Chebyshev(Mean, Sd) UCL	84.16
97.5% Chebyshev(Mean, Sd) UCL	87.42	99% Chebyshev(Mean, Sd) UCL	93.81

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:34:07 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404638) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.1	Mean	5.017
Maximum	8.68	Median	5.245
SD	3.647	Std. Error of Mean	1.489
Coefficient of Variation	0.727	Skewness	-0.0716
Mean of logged Data	1.288	SD of logged Data	0.963

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.017	95% Adjusted-CLT UCL (Chen-1995)	7.419
		95% Modified-t UCL (Johnson-1978)	8.01

Nonparametric Distribution Free UCLs

95% CLT UCL	7.466	95% Jackknife UCL	8.017
95% Standard Bootstrap UCL	7.172	95% Bootstrap-t UCL	8.125
95% Hall's Bootstrap UCL	6.462	95% Percentile Bootstrap UCL	7.315
95% BCA Bootstrap UCL	7.215		
90% Chebyshev(Mean, Sd) UCL	9.483	95% Chebyshev(Mean, Sd) UCL	11.51
97.5% Chebyshev(Mean, Sd) UCL	14.32	99% Chebyshev(Mean, Sd) UCL	19.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics			
Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.524	Mean	3.235
Maximum	8.03	Median	2.385
SD	2.924	Std. Error of Mean	1.194
Coefficient of Variation	0.904	Skewness	0.983
Mean of logged Data	0.755	SD of logged Data	1.071

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.641	95% Adjusted-CLT UCL (Chen-1995)	5.711
		95% Modified-t UCL (Johnson-1978)	5.72

Nonparametric Distribution Free UCLs

95% CLT UCL	5.199	95% Jackknife UCL	5.641
95% Standard Bootstrap UCL	5.014	95% Bootstrap-t UCL	7.977
95% Hall's Bootstrap UCL	17.96	95% Percentile Bootstrap UCL	5.054
95% BCA Bootstrap UCL	5.567		
90% Chebyshev(Mean, Sd) UCL	6.816	95% Chebyshev(Mean, Sd) UCL	8.439
97.5% Chebyshev(Mean, Sd) UCL	10.69	99% Chebyshev(Mean, Sd) UCL	15.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics			
Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.96	Mean	10.8
Maximum	24.8	Median	9.03
SD	9.381	Std. Error of Mean	3.83
Coefficient of Variation	0.869	Skewness	0.567
Mean of logged Data	1.946	SD of logged Data	1.103

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.52	95% Adjusted-CLT UCL (Chen-1995)	18.05
		95% Modified-t UCL (Johnson-1978)	18.66

Nonparametric Distribution Free UCLs

95% CLT UCL	17.1	95% Jackknife UCL	18.52
95% Standard Bootstrap UCL	16.57	95% Bootstrap-t UCL	23.39
95% Hall's Bootstrap UCL	16.29	95% Percentile Bootstrap UCL	16.76
95% BCA Bootstrap UCL	17.54		
90% Chebyshev(Mean, Sd) UCL	22.29	95% Chebyshev(Mean, Sd) UCL	27.49
97.5% Chebyshev(Mean, Sd) UCL	34.72	99% Chebyshev(Mean, Sd) UCL	48.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.8	Mean	49.65
Maximum	108	Median	44.45
SD	36.59	Std. Error of Mean	14.94
Coefficient of Variation	0.737	Skewness	0.718
Mean of logged Data	3.635	SD of logged Data	0.849

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	79.75	95% Adjusted-CLT UCL (Chen-1995)	78.9
		95% Modified-t UCL (Johnson-1978)	80.48

Nonparametric Distribution Free UCLs

95% CLT UCL	74.22	95% Jackknife UCL	79.75
95% Standard Bootstrap UCL	71.82	95% Bootstrap-t UCL	90.24
95% Hall's Bootstrap UCL	79.09	95% Percentile Bootstrap UCL	72.35
95% BCA Bootstrap UCL	74.45		
90% Chebyshev(Mean, Sd) UCL	94.46	95% Chebyshev(Mean, Sd) UCL	114.8
97.5% Chebyshev(Mean, Sd) UCL	142.9	99% Chebyshev(Mean, Sd) UCL	198.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.3	Mean	63.5
Maximum	133	Median	58.85
SD	45.95	Std. Error of Mean	18.76
Coefficient of Variation	0.724	Skewness	0.526
Mean of logged Data	3.885	SD of logged Data	0.839

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	101.3	95% Adjusted-CLT UCL (Chen-1995)	98.66
		95% Modified-t UCL (Johnson-1978)	102

Nonparametric Distribution Free UCLs

95% CLT UCL	94.35	95% Jackknife UCL	101.3
95% Standard Bootstrap UCL	91.89	95% Bootstrap-t UCL	111.2
95% Hall's Bootstrap UCL	89	95% Percentile Bootstrap UCL	92.77
95% BCA Bootstrap UCL	93.55		
90% Chebyshev(Mean, Sd) UCL	119.8	95% Chebyshev(Mean, Sd) UCL	145.3
97.5% Chebyshev(Mean, Sd) UCL	180.6	99% Chebyshev(Mean, Sd) UCL	250.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.3	Mean	94.88
Maximum	195	Median	86.25

SD	71.4	Std. Error of Mean	29.15
Coefficient of Variation	0.753	Skewness	0.362
Mean of logged Data	4.251	SD of logged Data	0.898

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	153.6	95% Adjusted-CLT UCL (Chen-1995)	147.4
		95% Modified-t UCL (Johnson-1978)	154.3

Nonparametric Distribution Free UCLs

95% CLT UCL	142.8	95% Jackknife UCL	153.6
95% Standard Bootstrap UCL	138.7	95% Bootstrap-t UCL	160.6
95% Hall's Bootstrap UCL	128.7	95% Percentile Bootstrap UCL	143.4
95% BCA Bootstrap UCL	139.6		
90% Chebyshev(Mean, Sd) UCL	182.3	95% Chebyshev(Mean, Sd) UCL	221.9
97.5% Chebyshev(Mean, Sd) UCL	276.9	99% Chebyshev(Mean, Sd) UCL	384.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.9	Mean	51.27
Maximum	105	Median	48.35
SD	37.74	Std. Error of Mean	15.41
Coefficient of Variation	0.736	Skewness	0.369
Mean of logged Data	3.654	SD of logged Data	0.866

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	82.32	95% Adjusted-CLT UCL (Chen-1995)	79.09
		95% Modified-t UCL (Johnson-1978)	82.7

Nonparametric Distribution Free UCLs

95% CLT UCL	76.61	95% Jackknife UCL	82.32
95% Standard Bootstrap UCL	74.7	95% Bootstrap-t UCL	89.18
95% Hall's Bootstrap UCL	68.45	95% Percentile Bootstrap UCL	74.78
95% BCA Bootstrap UCL	75.5		
90% Chebyshev(Mean, Sd) UCL	97.49	95% Chebyshev(Mean, Sd) UCL	118.4
97.5% Chebyshev(Mean, Sd) UCL	147.5	99% Chebyshev(Mean, Sd) UCL	204.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.06	Mean	36.94
Maximum	78.2	Median	34.65
SD	27.54	Std. Error of Mean	11.24
Coefficient of Variation	0.746	Skewness	0.492
Mean of logged Data	3.319	SD of logged Data	0.882

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.6	95% Adjusted-CLT UCL (Chen-1995)	57.85
		95% Modified-t UCL (Johnson-1978)	59.98

Nonparametric Distribution Free UCLs

95% CLT UCL	55.44	95% Jackknife UCL	59.6
95% Standard Bootstrap UCL	54.02	95% Bootstrap-t UCL	65.15
95% Hall's Bootstrap UCL	51.59	95% Percentile Bootstrap UCL	54.65
95% BCA Bootstrap UCL	55.97		
90% Chebyshev(Mean, Sd) UCL	70.68	95% Chebyshev(Mean, Sd) UCL	85.96
97.5% Chebyshev(Mean, Sd) UCL	107.2	99% Chebyshev(Mean, Sd) UCL	148.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.7	Mean	82.23
Maximum	157	Median	74.85
SD	59.96	Std. Error of Mean	24.48
Coefficient of Variation	0.729	Skewness	0.205
Mean of logged Data	4.113	SD of logged Data	0.904

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	131.6	95% Adjusted-CLT UCL (Chen-1995)	124.7
		95% Modified-t UCL (Johnson-1978)	131.9

Nonparametric Distribution Free UCLs

95% CLT UCL	122.5	95% Jackknife UCL	131.6
95% Standard Bootstrap UCL	119.9	95% Bootstrap-t UCL	129.6
95% Hall's Bootstrap UCL	113.2	95% Percentile Bootstrap UCL	118.7
95% BCA Bootstrap UCL	114		
90% Chebyshev(Mean, Sd) UCL	155.7	95% Chebyshev(Mean, Sd) UCL	188.9
97.5% Chebyshev(Mean, Sd) UCL	235.1	99% Chebyshev(Mean, Sd) UCL	325.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.98	Mean	12.63
Maximum	26.5	Median	11.72
SD	9.286	Std. Error of Mean	3.791
Coefficient of Variation	0.735	Skewness	0.485
Mean of logged Data	2.254	SD of logged Data	0.871

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.27	95% Adjusted-CLT UCL (Chen-1995)	19.67
		95% Modified-t UCL (Johnson-1978)	20.39

Nonparametric Distribution Free UCLs

95% CLT UCL	18.86	95% Jackknife UCL	20.27
95% Standard Bootstrap UCL	18.25	95% Bootstrap-t UCL	21.91
95% Hall's Bootstrap UCL	17.66	95% Percentile Bootstrap UCL	18.44
95% BCA Bootstrap UCL	19.21		
90% Chebyshev(Mean, Sd) UCL	24	95% Chebyshev(Mean, Sd) UCL	29.15
97.5% Chebyshev(Mean, Sd) UCL	36.3	99% Chebyshev(Mean, Sd) UCL	50.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.6	Mean	117.3
Maximum	252	Median	94.4
SD	99.49	Std. Error of Mean	40.62
Coefficient of Variation	0.848	Skewness	0.442
Mean of logged Data	4.346	SD of logged Data	1.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	199.1	95% Adjusted-CLT UCL (Chen-1995)	191.9
		95% Modified-t UCL (Johnson-1978)	200.4

Nonparametric Distribution Free UCLs

95% CLT UCL	184.1	95% Jackknife UCL	199.1
95% Standard Bootstrap UCL	179.4	95% Bootstrap-t UCL	210.5
95% Hall's Bootstrap UCL	175.9	95% Percentile Bootstrap UCL	179.6

95% BCA Bootstrap UCL	185.3		
90% Chebyshev(Mean, Sd) UCL	239.2	95% Chebyshev(Mean, Sd) UCL	294.3
97.5% Chebyshev(Mean, Sd) UCL	371	99% Chebyshev(Mean, Sd) UCL	521.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.205	Mean	3.145
Maximum	7.86	Median	2.06
SD	2.61	Std. Error of Mean	1.065
Coefficient of Variation	0.83	Skewness	1.498
Mean of logged Data	0.892	SD of logged Data	0.756

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.292	95% Adjusted-CLT UCL (Chen-1995)	5.594
		95% Modified-t UCL (Johnson-1978)	5.4

Nonparametric Distribution Free UCLs

95% CLT UCL	4.897	95% Jackknife UCL	5.292
95% Standard Bootstrap UCL	4.781	95% Bootstrap-t UCL	9.129
95% Hall's Bootstrap UCL	13.24	95% Percentile Bootstrap UCL	4.773
95% BCA Bootstrap UCL	5.355		
90% Chebyshev(Mean, Sd) UCL	6.341	95% Chebyshev(Mean, Sd) UCL	7.789
97.5% Chebyshev(Mean, Sd) UCL	9.798	99% Chebyshev(Mean, Sd) UCL	13.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.1	Mean	52.45
Maximum	109	Median	48.65
SD	38.29	Std. Error of Mean	15.63
Coefficient of Variation	0.73	Skewness	0.466
Mean of logged Data	3.688	SD of logged Data	0.845

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	83.95	95% Adjusted-CLT UCL (Chen-1995)	81.34
		95% Modified-t UCL (Johnson-1978)	84.45

Nonparametric Distribution Free UCLs

95% CLT UCL	78.16	95% Jackknife UCL	83.95
95% Standard Bootstrap UCL	75.58	95% Bootstrap-t UCL	90.82
95% Hall's Bootstrap UCL	71.83	95% Percentile Bootstrap UCL	77.02
95% BCA Bootstrap UCL	76.85		
90% Chebyshev(Mean, Sd) UCL	99.35	95% Chebyshev(Mean, Sd) UCL	120.6
97.5% Chebyshev(Mean, Sd) UCL	150.1	99% Chebyshev(Mean, Sd) UCL	208

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.12	Mean	14.96
Maximum	30.8	Median	13.07
SD	13.32	Std. Error of Mean	5.439
Coefficient of Variation	0.891	Skewness	0.182
Mean of logged Data	2.18	SD of logged Data	1.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.92	95% Adjusted-CLT UCL (Chen-1995)	24.34
		95% Modified-t UCL (Johnson-1978)	25.98

Nonparametric Distribution Free UCLs

95% CLT UCL	23.9	95% Jackknife UCL	25.92
95% Standard Bootstrap UCL	22.93	95% Bootstrap-t UCL	25.46
95% Hall's Bootstrap UCL	20.13	95% Percentile Bootstrap UCL	23.55
95% BCA Bootstrap UCL	23.54		
90% Chebyshev(Mean, Sd) UCL	31.27	95% Chebyshev(Mean, Sd) UCL	38.67
97.5% Chebyshev(Mean, Sd) UCL	48.93	99% Chebyshev(Mean, Sd) UCL	69.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.97	Mean	63.86
Maximum	153	Median	47.35
SD	59.98	Std. Error of Mean	24.49
Coefficient of Variation	0.939	Skewness	0.648
Mean of logged Data	3.625	SD of logged Data	1.243

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	113.2	95% Adjusted-CLT UCL (Chen-1995)	111.1
		95% Modified-t UCL (Johnson-1978)	114.3

Nonparametric Distribution Free UCLs

95% CLT UCL	104.1	95% Jackknife UCL	113.2
95% Standard Bootstrap UCL	100.9	95% Bootstrap-t UCL	161.6
95% Hall's Bootstrap UCL	99.88	95% Percentile Bootstrap UCL	102.4
95% BCA Bootstrap UCL	103.6		
90% Chebyshev(Mean, Sd) UCL	137.3	95% Chebyshev(Mean, Sd) UCL	170.6
97.5% Chebyshev(Mean, Sd) UCL	216.8	99% Chebyshev(Mean, Sd) UCL	307.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.1	Mean	115.6
Maximum	236	Median	96.65
SD	93.91	Std. Error of Mean	38.34
Coefficient of Variation	0.813	Skewness	0.341
Mean of logged Data	4.364	SD of logged Data	1.047

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	192.8	95% Adjusted-CLT UCL (Chen-1995)	184.3
		95% Modified-t UCL (Johnson-1978)	193.7

Nonparametric Distribution Free UCLs

95% CLT UCL	178.6	95% Jackknife UCL	192.8
95% Standard Bootstrap UCL	172.5	95% Bootstrap-t UCL	195.3
95% Hall's Bootstrap UCL	175.5	95% Percentile Bootstrap UCL	175.4
95% BCA Bootstrap UCL	173.6		
90% Chebyshev(Mean, Sd) UCL	230.6	95% Chebyshev(Mean, Sd) UCL	282.7
97.5% Chebyshev(Mean, Sd) UCL	355	99% Chebyshev(Mean, Sd) UCL	497

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	24.58
Maximum	60.6	Median	17.4

SD	18.16	Std. Error of Mean	7.414
Coefficient of Variation	0.739	Skewness	2.161
Mean of logged Data	3.04	SD of logged Data	0.572

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.52	95% Adjusted-CLT UCL (Chen-1995)	43.76
		95% Modified-t UCL (Johnson-1978)	40.61

Nonparametric Distribution Free UCLs

95% CLT UCL	36.78	95% Jackknife UCL	39.52
95% Standard Bootstrap UCL	35.74	95% Bootstrap-t UCL	91.33
95% Hall's Bootstrap UCL	90.45	95% Percentile Bootstrap UCL	38.17
95% BCA Bootstrap UCL	40.82		
90% Chebyshev(Mean, Sd) UCL	46.82	95% Chebyshev(Mean, Sd) UCL	56.9
97.5% Chebyshev(Mean, Sd) UCL	70.88	99% Chebyshev(Mean, Sd) UCL	98.35

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.8	Mean	29.48
Maximum	42.6	Median	30.85
SD	10.96	Std. Error of Mean	4.476
Coefficient of Variation	0.372	Skewness	-0.218
Mean of logged Data	3.318	SD of logged Data	0.411

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.5	95% Adjusted-CLT UCL (Chen-1995)	36.42
		95% Modified-t UCL (Johnson-1978)	38.44

Nonparametric Distribution Free UCLs

95% CLT UCL	36.85	95% Jackknife UCL	38.5
95% Standard Bootstrap UCL	36.02	95% Bootstrap-t UCL	37.83
95% Hall's Bootstrap UCL	35.51	95% Percentile Bootstrap UCL	35.95
95% BCA Bootstrap UCL	35.72		
90% Chebyshev(Mean, Sd) UCL	42.91	95% Chebyshev(Mean, Sd) UCL	48.99
97.5% Chebyshev(Mean, Sd) UCL	57.43	99% Chebyshev(Mean, Sd) UCL	74.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46.5	Mean	98.13
Maximum	150	Median	98
SD	53.58	Std. Error of Mean	21.87
Coefficient of Variation	0.546	Skewness	6.5615E-4
Mean of logged Data	4.443	SD of logged Data	0.6

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	142.2	95% Adjusted-CLT UCL (Chen-1995)	134.1
		95% Modified-t UCL (Johnson-1978)	142.2

Nonparametric Distribution Free UCLs

95% CLT UCL	134.1	95% Jackknife UCL	142.2
95% Standard Bootstrap UCL	130.3	95% Bootstrap-t UCL	142.7
95% Hall's Bootstrap UCL	115.7	95% Percentile Bootstrap UCL	131.2
95% BCA Bootstrap UCL	130.8		
90% Chebyshev(Mean, Sd) UCL	163.8	95% Chebyshev(Mean, Sd) UCL	193.5
97.5% Chebyshev(Mean, Sd) UCL	234.7	99% Chebyshev(Mean, Sd) UCL	315.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:35:52 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404639)mz - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.782	Mean	2.309
Maximum	6.5	Median	0.977
SD	2.799	Std. Error of Mean	1.4
Coefficient of Variation	1.212	Skewness	1.979
Mean of logged Data	0.387	SD of logged Data	1.006

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.603	95% Adjusted-CLT UCL (Chen-1995)	6.09
		95% Modified-t UCL (Johnson-1978)	5.833

Nonparametric Distribution Free UCLs

95% CLT UCL	4.611	95% Jackknife UCL	5.603
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.508	95% Chebyshev(Mean, Sd) UCL	8.41
97.5% Chebyshev(Mean, Sd) UCL	11.05	99% Chebyshev(Mean, Sd) UCL	16.23

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0

Minimum	1.12	Mean	4.373
Maximum	14	Median	1.185
SD	6.419	Std. Error of Mean	3.209
Coefficient of Variation	1.468	Skewness	2
Mean of logged Data	0.772	SD of logged Data	1.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.93	95% Adjusted-CLT UCL (Chen-1995)	13.08
		95% Modified-t UCL (Johnson-1978)	12.46

Nonparametric Distribution Free UCLs

95% CLT UCL	9.651	95% Jackknife UCL	11.93
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14	95% Chebyshev(Mean, Sd) UCL	18.36
97.5% Chebyshev(Mean, Sd) UCL	24.41	99% Chebyshev(Mean, Sd) UCL	36.3

Suggested UCL to Use
Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	3.54	Mean	16.13
Maximum	47	Median	6.99
SD	20.64	Std. Error of Mean	10.32
Coefficient of Variation	1.28	Skewness	1.962
Mean of logged Data	2.251	SD of logged Data	1.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL

95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	40.42	95% Adjusted-CLT UCL (Chen-1995)	43.93
		95% Modified-t UCL (Johnson-1978)	42.11

Nonparametric Distribution Free UCLs

95% CLT UCL	33.11	95% Jackknife UCL	40.42
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	47.1	95% Chebyshev(Mean, Sd) UCL	61.12
97.5% Chebyshev(Mean, Sd) UCL	80.59	99% Chebyshev(Mean, Sd) UCL	118.8

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	36.1	Mean	135
Maximum	420	Median	41.9
SD	190	Std. Error of Mean	95.02
Coefficient of Variation	1.408	Skewness	1.999
Mean of logged Data	4.274	SD of logged Data	1.179

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	358.6	95% Adjusted-CLT UCL (Chen-1995)	392.7
		95% Modified-t UCL (Johnson-1978)	374.4

Nonparametric Distribution Free UCLs

95% CLT UCL	291.3	95% Jackknife UCL	358.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	420	95% Chebyshev(Mean, Sd) UCL	549.1
97.5% Chebyshev(Mean, Sd) UCL	728.4	99% Chebyshev(Mean, Sd) UCL	1080

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	48.8	Mean	111.3
Maximum	290	Median	53.15
SD	119.2	Std. Error of Mean	59.59
Coefficient of Variation	1.071	Skewness	1.997
Mean of logged Data	4.376	SD of logged Data	0.864

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	251.5	95% Adjusted-CLT UCL (Chen-1995)	272.9
		95% Modified-t UCL (Johnson-1978)	261.4

Nonparametric Distribution Free UCLs

95% CLT UCL	209.3	95% Jackknife UCL	251.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	290	95% Chebyshev(Mean, Sd) UCL	371
97.5% Chebyshev(Mean, Sd) UCL	483.4	99% Chebyshev(Mean, Sd) UCL	704.2

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	371

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	65.1	Mean	191.1
Maximum	560	Median	69.55
SD	246	Std. Error of Mean	123

Coefficient of Variation	1.288	Skewness	1.999
Mean of logged Data	4.747	SD of logged Data	1.055

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	480.5	95% Adjusted-CLT UCL (Chen-1995)	524.7
		95% Modified-t UCL (Johnson-1978)	501

Nonparametric Distribution Free UCLs

95% CLT UCL	393.4	95% Jackknife UCL	480.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	560	95% Chebyshev(Mean, Sd) UCL	727.2
97.5% Chebyshev(Mean, Sd) UCL	959.1	99% Chebyshev(Mean, Sd) UCL	1415

Suggested UCL to Use
Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	35.1	Mean	102.6
Maximum	300	Median	37.65
SD	131.6	Std. Error of Mean	65.81
Coefficient of Variation	1.283	Skewness	1.998
Mean of logged Data	4.129	SD of logged Data	1.052

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	257.5	95% Adjusted-CLT UCL (Chen-1995)	281.1
		95% Modified-t UCL (Johnson-1978)	268.4

Nonparametric Distribution Free UCLs

95% CLT UCL	210.8	95% Jackknife UCL	257.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	300	95% Chebyshev(Mean, Sd) UCL	389.5
97.5% Chebyshev(Mean, Sd) UCL	513.6	99% Chebyshev(Mean, Sd) UCL	757.4

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	23.9	Mean	78.68
Maximum	240	Median	25.4
SD	107.6	Std. Error of Mean	53.78
Coefficient of Variation	1.367	Skewness	1.999
Mean of logged Data	3.781	SD of logged Data	1.134

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	205.2	95% Adjusted-CLT UCL (Chen-1995)	224.6
		95% Modified-t UCL (Johnson-1978)	214.2

Nonparametric Distribution Free UCLs

95% CLT UCL	167.1	95% Jackknife UCL	205.2
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	240	95% Chebyshev(Mean, Sd) UCL	313.1
97.5% Chebyshev(Mean, Sd) UCL	414.5	99% Chebyshev(Mean, Sd) UCL	613.8

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	50	Mean	150.7
Maximum	450	Median	51.35
SD	199.6	Std. Error of Mean	99.78
Coefficient of Variation	1.324	Skewness	2
Mean of logged Data	4.475	SD of logged Data	1.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	385.5	95% Adjusted-CLT UCL (Chen-1995)	421.4
		95% Modified-t UCL (Johnson-1978)	402.1

Nonparametric Distribution Free UCLs

95% CLT UCL	314.8	95% Jackknife UCL	385.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	450	95% Chebyshev(Mean, Sd) UCL	585.6
97.5% Chebyshev(Mean, Sd) UCL	773.8	99% Chebyshev(Mean, Sd) UCL	1143

Suggested UCL to Use
Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	9.41	Mean	27.06
Maximum	79	Median	9.905
SD	34.63	Std. Error of Mean	17.32
Coefficient of Variation	1.28	Skewness	1.999
Mean of logged Data	2.799	SD of logged Data	1.047

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	67.81	95% Adjusted-CLT UCL (Chen-1995)	74.03
		95% Modified-t UCL (Johnson-1978)	70.69

Nonparametric Distribution Free UCLs

95% CLT UCL	55.54	95% Jackknife UCL	67.81
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	79	95% Chebyshev(Mean, Sd) UCL	102.5
97.5% Chebyshev(Mean, Sd) UCL	135.2	99% Chebyshev(Mean, Sd) UCL	199.3

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	57.3	Mean	230.2
Maximum	710	Median	76.7
SD	320	Std. Error of Mean	160
Coefficient of Variation	1.39	Skewness	1.995
Mean of logged Data	4.823	SD of logged Data	1.17

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	606.7	95% Adjusted-CLT UCL (Chen-1995)	663.9
		95% Modified-t UCL (Johnson-1978)	633.3

Nonparametric Distribution Free UCLs

95% CLT UCL	493.4	95% Jackknife UCL	606.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		

90% Chebyshev(Mean, Sd) UCL	710.2	95% Chebyshev(Mean, Sd) UCL	927.6
97.5% Chebyshev(Mean, Sd) UCL	1229	99% Chebyshev(Mean, Sd) UCL	1822

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.215	Mean	2.908
Maximum	7.9	Median	1.258
SD	3.329	Std. Error of Mean	1.664
Coefficient of Variation	1.145	Skewness	1.999
Mean of logged Data	0.68	SD of logged Data	0.925

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.824	95% Adjusted-CLT UCL (Chen-1995)	7.423
		95% Modified-t UCL (Johnson-1978)	7.101

Nonparametric Distribution Free UCLs

95% CLT UCL	5.645	95% Jackknife UCL	6.824
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	7.9	95% Chebyshev(Mean, Sd) UCL	10.16
97.5% Chebyshev(Mean, Sd) UCL	13.3	99% Chebyshev(Mean, Sd) UCL	19.47

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.16

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	38.9	Mean	103.1
Maximum	290	Median	41.65
SD	124.7	Std. Error of Mean	62.33
Coefficient of Variation	1.21	Skewness	1.998
Mean of logged Data	4.197	SD of logged Data	0.984

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	249.7	95% Adjusted-CLT UCL (Chen-1995)	272.1
		95% Modified-t UCL (Johnson-1978)	260.1

Nonparametric Distribution Free UCLs

95% CLT UCL	205.6	95% Jackknife UCL	249.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	290	95% Chebyshev(Mean, Sd) UCL	374.7
97.5% Chebyshev(Mean, Sd) UCL	492.3	99% Chebyshev(Mean, Sd) UCL	723.2

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	374.7

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.47	Mean	5.135
Maximum	15	Median	2.035
SD	6.582	Std. Error of Mean	3.291
Coefficient of Variation	1.282	Skewness	1.989
Mean of logged Data	1.128	SD of logged Data	1.065

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.88	95% Adjusted-CLT UCL (Chen-1995)	14.05
		95% Modified-t UCL (Johnson-1978)	13.43

Nonparametric Distribution Free UCLs

95% CLT UCL	10.55	95% Jackknife UCL	12.88
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.01	95% Chebyshev(Mean, Sd) UCL	19.48
97.5% Chebyshev(Mean, Sd) UCL	25.69	99% Chebyshev(Mean, Sd) UCL	37.88

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	22.5	Mean	98.3
Maximum	300	Median	35.35
SD	134.6	Std. Error of Mean	67.3
Coefficient of Variation	1.369	Skewness	1.988
Mean of logged Data	3.987	SD of logged Data	1.164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	256.7	95% Adjusted-CLT UCL (Chen-1995)	280.5
		95% Modified-t UCL (Johnson-1978)	267.8

Nonparametric Distribution Free UCLs

95% CLT UCL	209	95% Jackknife UCL	256.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	300.2	95% Chebyshev(Mean, Sd) UCL	391.7

97.5% Chebyshev(Mean, Sd) UCL	518.6	99% Chebyshev(Mean, Sd) UCL	767.9

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	55.3	Mean	233.8
Maximum	740	Median	70
SD	337.5	Std. Error of Mean	168.8
Coefficient of Variation	1.444	Skewness	1.997
Mean of logged Data	4.779	SD of logged Data	1.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	631	95% Adjusted-CLT UCL (Chen-1995)	691.5
		95% Modified-t UCL (Johnson-1978)	659.1

Nonparametric Distribution Free UCLs

95% CLT UCL	511.4	95% Jackknife UCL	631
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	740.1	95% Chebyshev(Mean, Sd) UCL	969.4
97.5% Chebyshev(Mean, Sd) UCL	1288	99% Chebyshev(Mean, Sd) UCL	1913

Suggested UCL to Use

Recommendation Provided only for 95% Confidence Coefficient

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4

		Number of Missing Observations	0
Minimum	0.72	Mean	1.074
Maximum	2.1	Median	0.738
SD	0.684	Std. Error of Mean	0.342
Coefficient of Variation	0.637	Skewness	1.998
Mean of logged Data	-0.049	SD of logged Data	0.528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.879	95% Adjusted-CLT UCL (Chen-1995)	2.002
		95% Modified-t UCL (Johnson-1978)	1.936

Nonparametric Distribution Free UCLs

95% CLT UCL	1.637	95% Jackknife UCL	1.879
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.1	95% Chebyshev(Mean, Sd) UCL	2.565
97.5% Chebyshev(Mean, Sd) UCL	3.21	99% Chebyshev(Mean, Sd) UCL	4.478

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.565

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	4	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.4	Mean	12.73
Maximum	14.3	Median	14.1
SD	2.889	Std. Error of Mean	1.445
Coefficient of Variation	0.227	Skewness	-1.975
Mean of logged Data	2.52	SD of logged Data	0.262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.13	95% Adjusted-CLT UCL (Chen-1995)	13.58
		95% Modified-t UCL (Johnson-1978)	15.89

Nonparametric Distribution Free UCLs

95% CLT UCL	15.1	95% Jackknife UCL	16.13
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	17.06	95% Chebyshev(Mean, Sd) UCL	19.02
97.5% Chebyshev(Mean, Sd) UCL	21.75	99% Chebyshev(Mean, Sd) UCL	27.1

Suggested UCL to Use

95% Student's-t UCL	16.13	or 95% Modified-t UCL	15.89

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	15.7	Mean	24.68
Maximum	40.6	Median	21.2
SD	11.24	Std. Error of Mean	5.618
Coefficient of Variation	0.455	Skewness	1.418
Mean of logged Data	3.136	SD of logged Data	0.421

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.9	95% Adjusted-CLT UCL (Chen-1995)	38.17
		95% Modified-t UCL (Johnson-1978)	38.56

Nonparametric Distribution Free UCLs

95% CLT UCL	33.92	95% Jackknife UCL	37.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A

95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	41.53	95% Chebyshev(Mean, Sd) UCL	49.16
97.5% Chebyshev(Mean, Sd) UCL	59.76	99% Chebyshev(Mean, Sd) UCL	80.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	37.3	Mean	45.25
Maximum	48.4	Median	47.65
SD	5.331	Std. Error of Mean	2.665
Coefficient of Variation	0.118	Skewness	-1.933
Mean of logged Data	3.807	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.52	95% Adjusted-CLT UCL (Chen-1995)	46.88
		95% Modified-t UCL (Johnson-1978)	51.09

Nonparametric Distribution Free UCLs

95% CLT UCL	49.63	95% Jackknife UCL	51.52
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	53.25	95% Chebyshev(Mean, Sd) UCL	56.87
97.5% Chebyshev(Mean, Sd) UCL	61.9	99% Chebyshev(Mean, Sd) UCL	71.77

Suggested UCL to Use

95% Student's-t UCL	51.52	or 95% Modified-t UCL	51.09

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:37:49 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404640)mz - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.17	Mean	43.59
Maximum	160	Median	6.1
SD	77.67	Std. Error of Mean	38.84
Coefficient of Variation	1.782	Skewness	1.99
Mean of logged Data	2.284	SD of logged Data	1.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	135	95% Adjusted-CLT UCL (Chen-1995)	148.8
		95% Modified-t UCL (Johnson-1978)	141.4

Nonparametric Distribution Free UCLs

95% CLT UCL	107.5	95% Jackknife UCL	135
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	160.1	95% Chebyshev(Mean, Sd) UCL	212.9
97.5% Chebyshev(Mean, Sd) UCL	286.1	99% Chebyshev(Mean, Sd) UCL	430

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0

Minimum	5.82	Mean	148.5
Maximum	550	Median	19.07
SD	267.9	Std. Error of Mean	133.9
Coefficient of Variation	1.804	Skewness	1.992
Mean of logged Data	3.418	SD of logged Data	2.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	463.7	95% Adjusted-CLT UCL (Chen-1995)	511.3
		95% Modified-t UCL (Johnson-1978)	485.9

Nonparametric Distribution Free UCLs

95% CLT UCL	368.8	95% Jackknife UCL	463.7
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	550.3	95% Chebyshev(Mean, Sd) UCL	732.3
97.5% Chebyshev(Mean, Sd) UCL	984.9	99% Chebyshev(Mean, Sd) UCL	1481

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	19.8	Mean	338.2
Maximum	1200	Median	66.4
SD	575.2	Std. Error of Mean	287.6
Coefficient of Variation	1.701	Skewness	1.987
Mean of logged Data	4.596	SD of logged Data	1.768

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	1015	95% Adjusted-CLT UCL (Chen-1995)	1117
		95% Modified-t UCL (Johnson-1978)	1063

Nonparametric Distribution Free UCLs

95% CLT UCL	811.2	95% Jackknife UCL	1015
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1201	95% Chebyshev(Mean, Sd) UCL	1592
97.5% Chebyshev(Mean, Sd) UCL	2134	99% Chebyshev(Mean, Sd) UCL	3200

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	179	Mean	2258
Maximum	8000	Median	427
SD	3831	Std. Error of Mean	1916
Coefficient of Variation	1.697	Skewness	1.989
Mean of logged Data	6.542	SD of logged Data	1.699

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6767	95% Adjusted-CLT UCL (Chen-1995)	7445
		95% Modified-t UCL (Johnson-1978)	7084

Nonparametric Distribution Free UCLs

95% CLT UCL	5409	95% Jackknife UCL	6767
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	8005	95% Chebyshev(Mean, Sd) UCL	10609
97.5% Chebyshev(Mean, Sd) UCL	14222	99% Chebyshev(Mean, Sd) UCL	21319

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	215	Mean	1729
Maximum	5700	Median	500
SD	2657	Std. Error of Mean	1329
Coefficient of Variation	1.537	Skewness	1.957
Mean of logged Data	6.555	SD of logged Data	1.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4856	95% Adjusted-CLT UCL (Chen-1995)	5303
		95% Modified-t UCL (Johnson-1978)	5072

Nonparametric Distribution Free UCLs

95% CLT UCL	3914	95% Jackknife UCL	4856
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5715	95% Chebyshev(Mean, Sd) UCL	7520
97.5% Chebyshev(Mean, Sd) UCL	10026	99% Chebyshev(Mean, Sd) UCL	14949

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	255	Mean	773.8
Maximum	1600	Median	620
SD	619.5	Std. Error of Mean	309.8
Coefficient of Variation	0.801	Skewness	0.973
Mean of logged Data	6.389	SD of logged Data	0.849

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1503	95% Adjusted-CLT UCL (Chen-1995)	1444
		95% Modified-t UCL (Johnson-1978)	1528

Nonparametric Distribution Free UCLs

95% CLT UCL	1283	95% Jackknife UCL	1503
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1703	95% Chebyshev(Mean, Sd) UCL	2124
97.5% Chebyshev(Mean, Sd) UCL	2708	99% Chebyshev(Mean, Sd) UCL	3856

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	150	Mean	1704
Maximum	6000	Median	332.5
SD	2867	Std. Error of Mean	1434
Coefficient of Variation	1.683	Skewness	1.987
Mean of logged Data	6.294	SD of logged Data	1.67

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5078	95% Adjusted-CLT UCL (Chen-1995)	5584
		95% Modified-t UCL (Johnson-1978)	5315

Nonparametric Distribution Free UCLs

95% CLT UCL	4062	95% Jackknife UCL	5078

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6005	95% Chebyshev(Mean, Sd) UCL	7953
97.5% Chebyshev(Mean, Sd) UCL	10657	99% Chebyshev(Mean, Sd) UCL	15968

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	109	Mean	1201
Maximum	4200	Median	248
SD	2002	Std. Error of Mean	1001
Coefficient of Variation	1.666	Skewness	1.985
Mean of logged Data	5.979	SD of logged Data	1.645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3557	95% Adjusted-CLT UCL (Chen-1995)	3909
		95% Modified-t UCL (Johnson-1978)	3722

Nonparametric Distribution Free UCLs

95% CLT UCL	2847	95% Jackknife UCL	3557
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4204	95% Chebyshev(Mean, Sd) UCL	5564
97.5% Chebyshev(Mean, Sd) UCL	7451	99% Chebyshev(Mean, Sd) UCL	11159

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	243	Mean	3092
Maximum	11000	Median	561.5
SD	5279	Std. Error of Mean	2640
Coefficient of Variation	1.708	Skewness	1.985
Mean of logged Data	6.798	SD of logged Data	1.758

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9303	95% Adjusted-CLT UCL (Chen-1995)	10232
		95% Modified-t UCL (Johnson-1978)	9740

Nonparametric Distribution Free UCLs

95% CLT UCL	7433	95% Jackknife UCL	9303
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11010	95% Chebyshev(Mean, Sd) UCL	14597
97.5% Chebyshev(Mean, Sd) UCL	19576	99% Chebyshev(Mean, Sd) UCL	29355

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	40.6	Mean	458.4
Maximum	1600	Median	96.45
SD	762.3	Std. Error of Mean	381.1
Coefficient of Variation	1.663	Skewness	1.982
Mean of logged Data	5.006	SD of logged Data	1.663

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1355	95% Adjusted-CLT UCL (Chen-1995)	1489
		95% Modified-t UCL (Johnson-1978)	1418

Nonparametric Distribution Free UCLs

95% CLT UCL	1085	95% Jackknife UCL	1355
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1602	95% Chebyshev(Mean, Sd) UCL	2120
97.5% Chebyshev(Mean, Sd) UCL	2839	99% Chebyshev(Mean, Sd) UCL	4251

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	267	Mean	3919
Maximum	14000	Median	704.5
SD	6728	Std. Error of Mean	3364
Coefficient of Variation	1.717	Skewness	1.987
Mean of logged Data	7.014	SD of logged Data	1.776

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11836	95% Adjusted-CLT UCL (Chen-1995)	13023
		95% Modified-t UCL (Johnson-1978)	12393

Nonparametric Distribution Free UCLs

95% CLT UCL	9452	95% Jackknife UCL	11836
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14011	95% Chebyshev(Mean, Sd) UCL	18583
97.5% Chebyshev(Mean, Sd) UCL	24928	99% Chebyshev(Mean, Sd) UCL	37391

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	1.65	Mean	72
Maximum	270	Median	8.18
SD	132	Std. Error of Mean	66.02
Coefficient of Variation	1.834	Skewness	1.996
Mean of logged Data	2.561	SD of logged Data	2.165

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	227.4	95% Adjusted-CLT UCL (Chen-1995)	251
		95% Modified-t UCL (Johnson-1978)	238.4

Nonparametric Distribution Free UCLs

95% CLT UCL	180.6	95% Jackknife UCL	227.4
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	270.1	95% Chebyshev(Mean, Sd) UCL	359.8
97.5% Chebyshev(Mean, Sd) UCL	484.3	99% Chebyshev(Mean, Sd) UCL	728.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0

Minimum	166	Mean	1509
Maximum	5100	Median	384.5
SD	2400	Std. Error of Mean	1200
Coefficient of Variation	1.59	Skewness	1.973
Mean of logged Data	6.345	SD of logged Data	1.543

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4332	95% Adjusted-CLT UCL (Chen-1995)	4747
		95% Modified-t UCL (Johnson-1978)	4530

Nonparametric Distribution Free UCLs

95% CLT UCL	3482	95% Jackknife UCL	4332
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5108	95% Chebyshev(Mean, Sd) UCL	6739
97.5% Chebyshev(Mean, Sd) UCL	9002	99% Chebyshev(Mean, Sd) UCL	13447

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	6.55	Mean	126.1
Maximum	460	Median	18.96
SD	222.9	Std. Error of Mean	111.4
Coefficient of Variation	1.767	Skewness	1.984
Mean of logged Data	3.342	SD of logged Data	1.996

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	388.4	95% Adjusted-CLT UCL (Chen-1995)	427.6
		95% Modified-t UCL (Johnson-1978)	406.8

Nonparametric Distribution Free UCLs

95% CLT UCL	309.4	95% Jackknife UCL	388.4
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	460.4	95% Chebyshev(Mean, Sd) UCL	611.9
97.5% Chebyshev(Mean, Sd) UCL	822.1	99% Chebyshev(Mean, Sd) UCL	1235

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	106	Mean	1734
Maximum	6200	Median	314
SD	2980	Std. Error of Mean	1490
Coefficient of Variation	1.719	Skewness	1.99
Mean of logged Data	6.202	SD of logged Data	1.773

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5240	95% Adjusted-CLT UCL (Chen-1995)	5769
		95% Modified-t UCL (Johnson-1978)	5487

Nonparametric Distribution Free UCLs

95% CLT UCL	4184	95% Jackknife UCL	5240
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6204	95% Chebyshev(Mean, Sd) UCL	8229
97.5% Chebyshev(Mean, Sd) UCL	11039	99% Chebyshev(Mean, Sd) UCL	16560

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	284	Mean	4432
Maximum	16000	Median	721
SD	7720	Std. Error of Mean	3860
Coefficient of Variation	1.742	Skewness	1.988
Mean of logged Data	7.06	SD of logged Data	1.836

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13516	95% Adjusted-CLT UCL (Chen-1995)	14881
		95% Modified-t UCL (Johnson-1978)	14155

Nonparametric Distribution Free UCLs

95% CLT UCL	10781	95% Jackknife UCL	13516
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	16012	95% Chebyshev(Mean, Sd) UCL	21257
97.5% Chebyshev(Mean, Sd) UCL	28537	99% Chebyshev(Mean, Sd) UCL	42838

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	4	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	9.9	Mean	11.21
Maximum	11.75	Median	11.6
SD	0.878	Std. Error of Mean	0.439
Coefficient of Variation	0.0783	Skewness	-1.96
Mean of logged Data	2.415	SD of logged Data	0.0816

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.25	95% Adjusted-CLT UCL (Chen-1995)	11.47
		95% Modified-t UCL (Johnson-1978)	12.17

Nonparametric Distribution Free UCLs

95% CLT UCL	11.93	95% Jackknife UCL	12.25
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.53	95% Chebyshev(Mean, Sd) UCL	13.13
97.5% Chebyshev(Mean, Sd) UCL	13.95	99% Chebyshev(Mean, Sd) UCL	15.58

Suggested UCL to Use

95% Student's-t UCL	12.25	or 95% Modified-t UCL	12.17

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	24	Mean	46.6
Maximum	108	Median	27.2
SD	40.98	Std. Error of Mean	20.49
Coefficient of Variation	0.879	Skewness	1.987
Mean of logged Data	3.616	SD of logged Data	0.714

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL

95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	94.82	95% Adjusted-CLT UCL (Chen-1995)	102.1
		95% Modified-t UCL (Johnson-1978)	98.21

Nonparametric Distribution Free UCLs

95% CLT UCL	80.3	95% Jackknife UCL	94.82
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	108.1	95% Chebyshev(Mean, Sd) UCL	135.9
97.5% Chebyshev(Mean, Sd) UCL	174.6	99% Chebyshev(Mean, Sd) UCL	250.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	135.9

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	45.1	Mean	52.53
Maximum	60.6	Median	52.2
SD	7.453	Std. Error of Mean	3.726
Coefficient of Variation	0.142	Skewness	0.116
Mean of logged Data	3.954	SD of logged Data	0.142

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	61.29	95% Adjusted-CLT UCL (Chen-1995)	58.89
		95% Modified-t UCL (Johnson-1978)	61.33

Nonparametric Distribution Free UCLs

95% CLT UCL	58.65	95% Jackknife UCL	61.29
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	63.7	95% Chebyshev(Mean, Sd) UCL	68.77
97.5% Chebyshev(Mean, Sd) UCL	75.8	99% Chebyshev(Mean, Sd) UCL	89.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:54:04 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404656) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.85	Mean	4.9
Maximum	5.57	Median	5.28
SD	0.921	Std. Error of Mean	0.532
Coefficient of Variation	0.188	Skewness	-1.541
Mean of logged Data	1.576	SD of logged Data	0.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.452	95% Adjusted-CLT UCL (Chen-1995)	5.269
		95% Modified-t UCL (Johnson-1978)	6.374

Nonparametric Distribution Free UCLs

95% CLT UCL	5.774	95% Jackknife UCL	6.452
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.495	95% Chebyshev(Mean, Sd) UCL	7.217
97.5% Chebyshev(Mean, Sd) UCL	8.22	99% Chebyshev(Mean, Sd) UCL	10.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2	Mean	2.603
Maximum	3.64	Median	2.17
SD	0.902	Std. Error of Mean	0.521
Coefficient of Variation	0.346	Skewness	1.663
Mean of logged Data	0.92	SD of logged Data	0.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.124	95% Adjusted-CLT UCL (Chen-1995)	3.994
		95% Modified-t UCL (Johnson-1978)	4.207

Nonparametric Distribution Free UCLs

95% CLT UCL	3.46	95% Jackknife UCL	4.124
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.165	95% Chebyshev(Mean, Sd) UCL	4.873
97.5% Chebyshev(Mean, Sd) UCL	5.855	99% Chebyshev(Mean, Sd) UCL	7.784

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	5.93	Mean	8.623
Maximum	12.6	Median	7.34
SD	3.515	Std. Error of Mean	2.03
Coefficient of Variation	0.408	Skewness	1.424
Mean of logged Data	2.102	SD of logged Data	0.388

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.55	95% Adjusted-CLT UCL (Chen-1995)	13.74
		95% Modified-t UCL (Johnson-1978)	14.83

Nonparametric Distribution Free UCLs

95% CLT UCL	11.96	95% Jackknife UCL	14.55
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.71	95% Chebyshev(Mean, Sd) UCL	17.47
97.5% Chebyshev(Mean, Sd) UCL	21.3	99% Chebyshev(Mean, Sd) UCL	28.82

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	57.3	Mean	68.23
Maximum	81.4	Median	66
SD	12.2	Std. Error of Mean	7.046
Coefficient of Variation	0.179	Skewness	0.796
Mean of logged Data	4.212	SD of logged Data	0.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	88.81	95% Adjusted-CLT UCL (Chen-1995)	83.28
		95% Modified-t UCL (Johnson-1978)	89.35

Nonparametric Distribution Free UCLs

95% CLT UCL	79.82	95% Jackknife UCL	88.81
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	89.37	95% Chebyshev(Mean, Sd) UCL	98.95
97.5% Chebyshev(Mean, Sd) UCL	112.2	99% Chebyshev(Mean, Sd) UCL	138.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	79.1	Mean	94.67
Maximum	109	Median	95.9
SD	14.99	Std. Error of Mean	8.653
Coefficient of Variation	0.158	Skewness	-0.368
Mean of logged Data	4.542	SD of logged Data	0.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	119.9	95% Adjusted-CLT UCL (Chen-1995)	106.9
		95% Modified-t UCL (Johnson-1978)	119.6

Nonparametric Distribution Free UCLs

95% CLT UCL	108.9	95% Jackknife UCL	119.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	120.6	95% Chebyshev(Mean, Sd) UCL	132.4
97.5% Chebyshev(Mean, Sd) UCL	148.7	99% Chebyshev(Mean, Sd) UCL	180.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	105	Mean	127.3
Maximum	139	Median	138
SD	19.35	Std. Error of Mean	11.17
Coefficient of Variation	0.152	Skewness	-1.727
Mean of logged Data	4.839	SD of logged Data	0.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	160	95% Adjusted-CLT UCL (Chen-1995)	133.8
		95% Modified-t UCL (Johnson-1978)	158.1

Nonparametric Distribution Free UCLs

95% CLT UCL	145.7	95% Jackknife UCL	160
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	160.8	95% Chebyshev(Mean, Sd) UCL	176
97.5% Chebyshev(Mean, Sd) UCL	197.1	99% Chebyshev(Mean, Sd) UCL	238.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	57.7	Mean	73.87
Maximum	85.1	Median	78.8
SD	14.35	Std. Error of Mean	8.285
Coefficient of Variation	0.194	Skewness	-1.364
Mean of logged Data	4.289	SD of logged Data	0.206

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	98.06	95% Adjusted-CLT UCL (Chen-1995)	80.52
		95% Modified-t UCL (Johnson-1978)	96.97

Nonparametric Distribution Free UCLs

95% CLT UCL	87.49	95% Jackknife UCL	98.06
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	98.72	95% Chebyshev(Mean, Sd) UCL	110
97.5% Chebyshev(Mean, Sd) UCL	125.6	99% Chebyshev(Mean, Sd) UCL	156.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	45.1	Mean	51.47
Maximum	55.5	Median	53.8
SD	5.579	Std. Error of Mean	3.221
Coefficient of Variation	0.108	Skewness	-1.553
Mean of logged Data	3.937	SD of logged Data	0.112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.87	95% Adjusted-CLT UCL (Chen-1995)	53.68
		95% Modified-t UCL (Johnson-1978)	60.39

Nonparametric Distribution Free UCLs

95% CLT UCL	56.76	95% Jackknife UCL	60.87
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		

90% Chebyshev(Mean, Sd) UCL	61.13	95% Chebyshev(Mean, Sd) UCL	65.51
97.5% Chebyshev(Mean, Sd) UCL	71.58	99% Chebyshev(Mean, Sd) UCL	83.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	84.1	Mean	90.8
Maximum	98.7	Median	89.6
SD	7.374	Std. Error of Mean	4.257
Coefficient of Variation	0.0812	Skewness	0.713
Mean of logged Data	4.506	SD of logged Data	0.0806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.2	95% Adjusted-CLT UCL (Chen-1995)	99.67
		95% Modified-t UCL (Johnson-1978)	103.5

Nonparametric Distribution Free UCLs

95% CLT UCL	97.8	95% Jackknife UCL	103.2
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	103.6	95% Chebyshev(Mean, Sd) UCL	109.4
97.5% Chebyshev(Mean, Sd) UCL	117.4	99% Chebyshev(Mean, Sd) UCL	133.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.2	Mean	18.83
Maximum	22.8	Median	18.5
SD	3.811	Std. Error of Mean	2.2
Coefficient of Variation	0.202	Skewness	0.391
Mean of logged Data	2.922	SD of logged Data	0.203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.26	95% Adjusted-CLT UCL (Chen-1995)	22.98
		95% Modified-t UCL (Johnson-1978)	25.34

Nonparametric Distribution Free UCLs

95% CLT UCL	22.45	95% Jackknife UCL	25.26
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.43	95% Chebyshev(Mean, Sd) UCL	28.42
97.5% Chebyshev(Mean, Sd) UCL	32.57	99% Chebyshev(Mean, Sd) UCL	40.73

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	91.5	Mean	118.5
Maximum	147	Median	117
SD	27.78	Std. Error of Mean	16.04
Coefficient of Variation	0.234	Skewness	0.242
Mean of logged Data	4.756	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	165.3	95% Adjusted-CLT UCL (Chen-1995)	147.3
		95% Modified-t UCL (Johnson-1978)	165.7

Nonparametric Distribution Free UCLs

95% CLT UCL	144.9	95% Jackknife UCL	165.3
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	166.6	95% Chebyshev(Mean, Sd) UCL	188.4
97.5% Chebyshev(Mean, Sd) UCL	218.7	99% Chebyshev(Mean, Sd) UCL	278.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	70.9	Mean	87.3
Maximum	100	Median	91
SD	14.9	Std. Error of Mean	8.602
Coefficient of Variation	0.171	Skewness	-1.049
Mean of logged Data	4.459	SD of logged Data	0.178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	112.4	95% Adjusted-CLT UCL (Chen-1995)	95.88
		95% Modified-t UCL (Johnson-1978)	111.5

Nonparametric Distribution Free UCLs

95% CLT UCL	101.4	95% Jackknife UCL	112.4
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	113.1	95% Chebyshev(Mean, Sd) UCL	124.8
97.5% Chebyshev(Mean, Sd) UCL	141	99% Chebyshev(Mean, Sd) UCL	172.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	5.16	Mean	7.057
Maximum	8.21	Median	7.8
SD	1.655	Std. Error of Mean	0.956
Coefficient of Variation	0.235	Skewness	-1.613
Mean of logged Data	1.933	SD of logged Data	0.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.847	95% Adjusted-CLT UCL (Chen-1995)	7.677
		95% Modified-t UCL (Johnson-1978)	9.699

Nonparametric Distribution Free UCLs

95% CLT UCL	8.629	95% Jackknife UCL	9.847
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	9.924	95% Chebyshev(Mean, Sd) UCL	11.22
97.5% Chebyshev(Mean, Sd) UCL	13.02	99% Chebyshev(Mean, Sd) UCL	16.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	35.9	Mean	59.4
Maximum	71.9	Median	70.4
SD	20.37	Std. Error of Mean	11.76
Coefficient of Variation	0.343	Skewness	-1.721
Mean of logged Data	4.037	SD of logged Data	0.395

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	93.73	95% Adjusted-CLT UCL (Chen-1995)	66.25
		95% Modified-t UCL (Johnson-1978)	91.79

Nonparametric Distribution Free UCLs

95% CLT UCL	78.74	95% Jackknife UCL	93.73
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	94.67	95% Chebyshev(Mean, Sd) UCL	110.7
97.5% Chebyshev(Mean, Sd) UCL	132.8	99% Chebyshev(Mean, Sd) UCL	176.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	90.7	Mean	112.6
Maximum	132	Median	115
SD	20.76	Std. Error of Mean	11.98
Coefficient of Variation	0.184	Skewness	-0.52
Mean of logged Data	4.712	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	147.6	95% Adjusted-CLT UCL (Chen-1995)	128.4
		95% Modified-t UCL (Johnson-1978)	147

Nonparametric Distribution Free UCLs

95% CLT UCL	132.3	95% Jackknife UCL	147.6
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	148.5	95% Chebyshev(Mean, Sd) UCL	164.8
97.5% Chebyshev(Mean, Sd) UCL	187.4	99% Chebyshev(Mean, Sd) UCL	231.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.2	Mean	15.33
Maximum	15.5	Median	15.3
SD	0.153	Std. Error of Mean	0.0882
Coefficient of Variation	0.00996	Skewness	0.935
Mean of logged Data	2.73	SD of logged Data	0.00995

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.59	95% Adjusted-CLT UCL (Chen-1995)	15.53
		95% Modified-t UCL (Johnson-1978)	15.6

Nonparametric Distribution Free UCLs

95% CLT UCL	15.48	95% Jackknife UCL	15.59
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.6	95% Chebyshev(Mean, Sd) UCL	15.72
97.5% Chebyshev(Mean, Sd) UCL	15.88	99% Chebyshev(Mean, Sd) UCL	16.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.4	Mean	15.77
Maximum	16	Median	15.9
SD	0.321	Std. Error of Mean	0.186
Coefficient of Variation	0.0204	Skewness	-1.545
Mean of logged Data	2.758	SD of logged Data	0.0205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.31	95% Adjusted-CLT UCL (Chen-1995)	15.9
		95% Modified-t UCL (Johnson-1978)	16.28

Nonparametric Distribution Free UCLs

95% CLT UCL	16.07	95% Jackknife UCL	16.31
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	16.32	95% Chebyshev(Mean, Sd) UCL	16.58
97.5% Chebyshev(Mean, Sd) UCL	16.93	99% Chebyshev(Mean, Sd) UCL	17.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	82.9	Mean	85.93
Maximum	91.4	Median	83.5
SD	4.744	Std. Error of Mean	2.739
Coefficient of Variation	0.0552	Skewness	1.701
Mean of logged Data	4.453	SD of logged Data	0.0544

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	93.93	95% Adjusted-CLT UCL (Chen-1995)	93.31
		95% Modified-t UCL (Johnson-1978)	94.38

Nonparametric Distribution Free UCLs

95% CLT UCL	90.44	95% Jackknife UCL	93.93
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	94.15	95% Chebyshev(Mean, Sd) UCL	97.87
97.5% Chebyshev(Mean, Sd) UCL	103	99% Chebyshev(Mean, Sd) UCL	113.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:56:39 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404658) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.736	Mean	2.182
Maximum	3.75	Median	1.915
SD	1.323	Std. Error of Mean	0.54
Coefficient of Variation	0.606	Skewness	0.293
Mean of logged Data	0.603	SD of logged Data	0.676

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.27	95% Adjusted-CLT UCL (Chen-1995)	3.139
		95% Modified-t UCL (Johnson-1978)	3.281

Nonparametric Distribution Free UCLs

95% CLT UCL	3.07	95% Jackknife UCL	3.27
95% Standard Bootstrap UCL	2.997	95% Bootstrap-t UCL	3.298
95% Hall's Bootstrap UCL	2.991	95% Percentile Bootstrap UCL	3.013
95% BCA Bootstrap UCL	3.089		
90% Chebyshev(Mean, Sd) UCL	3.802	95% Chebyshev(Mean, Sd) UCL	4.536
97.5% Chebyshev(Mean, Sd) UCL	5.554	99% Chebyshev(Mean, Sd) UCL	7.555

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.423	Mean	1.009
Maximum	1.72	Median	1.019
SD	0.535	Std. Error of Mean	0.218
Coefficient of Variation	0.53	Skewness	0.143
Mean of logged Data	-0.127	SD of logged Data	0.59

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.449	95% Adjusted-CLT UCL (Chen-1995)	1.381
		95% Modified-t UCL (Johnson-1978)	1.451

Nonparametric Distribution Free UCLs

95% CLT UCL	1.368	95% Jackknife UCL	1.449
95% Standard Bootstrap UCL	1.335	95% Bootstrap-t UCL	1.507
95% Hall's Bootstrap UCL	1.261	95% Percentile Bootstrap UCL	1.337
95% BCA Bootstrap UCL	1.322		
90% Chebyshev(Mean, Sd) UCL	1.664	95% Chebyshev(Mean, Sd) UCL	1.96
97.5% Chebyshev(Mean, Sd) UCL	2.372	99% Chebyshev(Mean, Sd) UCL	3.181

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2	Mean	4.891
Maximum	8.1	Median	4.585
SD	2.866	Std. Error of Mean	1.17
Coefficient of Variation	0.586	Skewness	0.147
Mean of logged Data	1.421	SD of logged Data	0.652

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	7.248	95% Adjusted-CLT UCL (Chen-1995)	6.89
		95% Modified-t UCL (Johnson-1978)	7.26

Nonparametric Distribution Free UCLs

95% CLT UCL	6.815	95% Jackknife UCL	7.248
95% Standard Bootstrap UCL	6.637	95% Bootstrap-t UCL	7.1
95% Hall's Bootstrap UCL	6.152	95% Percentile Bootstrap UCL	6.717
95% BCA Bootstrap UCL	6.738		
90% Chebyshev(Mean, Sd) UCL	8.401	95% Chebyshev(Mean, Sd) UCL	9.991
97.5% Chebyshev(Mean, Sd) UCL	12.2	99% Chebyshev(Mean, Sd) UCL	16.53

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.7	Mean	34.12
Maximum	61.2	Median	35.4
SD	19.8	Std. Error of Mean	8.083
Coefficient of Variation	0.58	Skewness	0.142
Mean of logged Data	3.358	SD of logged Data	0.674

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.4	95% Adjusted-CLT UCL (Chen-1995)	47.91
		95% Modified-t UCL (Johnson-1978)	50.48

Nonparametric Distribution Free UCLs

95% CLT UCL	47.41	95% Jackknife UCL	50.4
95% Standard Bootstrap UCL	46.35	95% Bootstrap-t UCL	52.2
95% Hall's Bootstrap UCL	44.22	95% Percentile Bootstrap UCL	45.7
95% BCA Bootstrap UCL	47.43		
90% Chebyshev(Mean, Sd) UCL	58.37	95% Chebyshev(Mean, Sd) UCL	69.35
97.5% Chebyshev(Mean, Sd) UCL	84.6	99% Chebyshev(Mean, Sd) UCL	114.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.5	Mean	48.78
Maximum	91.7	Median	49.3
SD	28.57	Std. Error of Mean	11.66
Coefficient of Variation	0.586	Skewness	0.399
Mean of logged Data	3.721	SD of logged Data	0.659

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	72.29	95% Adjusted-CLT UCL (Chen-1995)	70
		95% Modified-t UCL (Johnson-1978)	72.61

Nonparametric Distribution Free UCLs

95% CLT UCL	67.97	95% Jackknife UCL	72.29
95% Standard Bootstrap UCL	66.34	95% Bootstrap-t UCL	76.86
95% Hall's Bootstrap UCL	66.05	95% Percentile Bootstrap UCL	67.78
95% BCA Bootstrap UCL	68.75		
90% Chebyshev(Mean, Sd) UCL	83.78	95% Chebyshev(Mean, Sd) UCL	99.63
97.5% Chebyshev(Mean, Sd) UCL	121.6	99% Chebyshev(Mean, Sd) UCL	164.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.6	Mean	65.67
Maximum	121	Median	65.7
SD	38.13	Std. Error of Mean	15.56
Coefficient of Variation	0.581	Skewness	0.34
Mean of logged Data	4.022	SD of logged Data	0.649

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	97.03	95% Adjusted-CLT UCL (Chen-1995)	93.58
		95% Modified-t UCL (Johnson-1978)	97.39

Nonparametric Distribution Free UCLs

95% CLT UCL	91.27	95% Jackknife UCL	97.03
95% Standard Bootstrap UCL	88.62	95% Bootstrap-t UCL	101.9
95% Hall's Bootstrap UCL	85.48	95% Percentile Bootstrap UCL	90.38
95% BCA Bootstrap UCL	88.73		
90% Chebyshev(Mean, Sd) UCL	112.4	95% Chebyshev(Mean, Sd) UCL	133.5
97.5% Chebyshev(Mean, Sd) UCL	162.9	99% Chebyshev(Mean, Sd) UCL	220.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.9	Mean	38.02
Maximum	68	Median	36.4
SD	20.63	Std. Error of Mean	8.421
Coefficient of Variation	0.543	Skewness	0.347
Mean of logged Data	3.499	SD of logged Data	0.599

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	54.99	95% Adjusted-CLT UCL (Chen-1995)	53.14
		95% Modified-t UCL (Johnson-1978)	55.18

Nonparametric Distribution Free UCLs

95% CLT UCL	51.87	95% Jackknife UCL	54.99

95% Standard Bootstrap UCL	50.59	95% Bootstrap-t UCL	58.76
95% Hall's Bootstrap UCL	49.22	95% Percentile Bootstrap UCL	51.18
95% BCA Bootstrap UCL	51.28		
90% Chebyshev(Mean, Sd) UCL	63.28	95% Chebyshev(Mean, Sd) UCL	74.72
97.5% Chebyshev(Mean, Sd) UCL	90.61	99% Chebyshev(Mean, Sd) UCL	121.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	25.87
Maximum	44	Median	26.45
SD	13.79	Std. Error of Mean	5.632
Coefficient of Variation	0.533	Skewness	0.124
Mean of logged Data	3.116	SD of logged Data	0.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.21	95% Adjusted-CLT UCL (Chen-1995)	35.43
		95% Modified-t UCL (Johnson-1978)	37.26

Nonparametric Distribution Free UCLs

95% CLT UCL	35.13	95% Jackknife UCL	37.21
95% Standard Bootstrap UCL	34.33	95% Bootstrap-t UCL	37.83
95% Hall's Bootstrap UCL	31.98	95% Percentile Bootstrap UCL	34.22
95% BCA Bootstrap UCL	34.03		
90% Chebyshev(Mean, Sd) UCL	42.76	95% Chebyshev(Mean, Sd) UCL	50.41
97.5% Chebyshev(Mean, Sd) UCL	61.04	99% Chebyshev(Mean, Sd) UCL	81.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.1	Mean	48.45
Maximum	87.1	Median	48.95
SD	28.63	Std. Error of Mean	11.69
Coefficient of Variation	0.591	Skewness	0.18
Mean of logged Data	3.706	SD of logged Data	0.674

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	72	95% Adjusted-CLT UCL (Chen-1995)	68.59
		95% Modified-t UCL (Johnson-1978)	72.14

Nonparametric Distribution Free UCLs

95% CLT UCL	67.67	95% Jackknife UCL	72
95% Standard Bootstrap UCL	66.2	95% Bootstrap-t UCL	73.74
95% Hall's Bootstrap UCL	61.95	95% Percentile Bootstrap UCL	66
95% BCA Bootstrap UCL	65.42		
90% Chebyshev(Mean, Sd) UCL	83.51	95% Chebyshev(Mean, Sd) UCL	99.39
97.5% Chebyshev(Mean, Sd) UCL	121.4	99% Chebyshev(Mean, Sd) UCL	164.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.71	Mean	8.438
Maximum	15.9	Median	7.435
SD	4.706	Std. Error of Mean	1.921
Coefficient of Variation	0.558	Skewness	0.73
Mean of logged Data	2	SD of logged Data	0.568

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.31	95% Adjusted-CLT UCL (Chen-1995)	12.21
		95% Modified-t UCL (Johnson-1978)	12.41

Nonparametric Distribution Free UCLs

95% CLT UCL	11.6	95% Jackknife UCL	12.31
95% Standard Bootstrap UCL	11.25	95% Bootstrap-t UCL	14.71
95% Hall's Bootstrap UCL	11.22	95% Percentile Bootstrap UCL	11.49
95% BCA Bootstrap UCL	11.73		
90% Chebyshev(Mean, Sd) UCL	14.2	95% Chebyshev(Mean, Sd) UCL	16.81
97.5% Chebyshev(Mean, Sd) UCL	20.44	99% Chebyshev(Mean, Sd) UCL	27.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19	Mean	54.38
Maximum	96.9	Median	56.15
SD	32.25	Std. Error of Mean	13.17
Coefficient of Variation	0.593	Skewness	0.0979
Mean of logged Data	3.815	SD of logged Data	0.694

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.92	95% Adjusted-CLT UCL (Chen-1995)	76.61
		95% Modified-t UCL (Johnson-1978)	81.01

Nonparametric Distribution Free UCLs

95% CLT UCL	76.04	95% Jackknife UCL	80.92
95% Standard Bootstrap UCL	73.64	95% Bootstrap-t UCL	83.97
95% Hall's Bootstrap UCL	69.82	95% Percentile Bootstrap UCL	74.35
95% BCA Bootstrap UCL	73.73		
90% Chebyshev(Mean, Sd) UCL	93.89	95% Chebyshev(Mean, Sd) UCL	111.8
97.5% Chebyshev(Mean, Sd) UCL	136.6	99% Chebyshev(Mean, Sd) UCL	185.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.4	Mean	44.07
Maximum	80.2	Median	42.65
SD	24.54	Std. Error of Mean	10.02
Coefficient of Variation	0.557	Skewness	0.413
Mean of logged Data	3.642	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	64.26	95% Adjusted-CLT UCL (Chen-1995)	62.35
		95% Modified-t UCL (Johnson-1978)	64.54

Nonparametric Distribution Free UCLs

95% CLT UCL	60.55	95% Jackknife UCL	64.26
95% Standard Bootstrap UCL	59.38	95% Bootstrap-t UCL	70.25
95% Hall's Bootstrap UCL	57.09	95% Percentile Bootstrap UCL	59.88
95% BCA Bootstrap UCL	59.97		
90% Chebyshev(Mean, Sd) UCL	74.13	95% Chebyshev(Mean, Sd) UCL	87.74
97.5% Chebyshev(Mean, Sd) UCL	106.6	99% Chebyshev(Mean, Sd) UCL	143.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.17	Mean	2.727
Maximum	3.925	Median	3.068
SD	1.238	Std. Error of Mean	0.506
Coefficient of Variation	0.454	Skewness	-0.413
Mean of logged Data	0.895	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.745	95% Adjusted-CLT UCL (Chen-1995)	3.467
		95% Modified-t UCL (Johnson-1978)	3.731

Nonparametric Distribution Free UCLs

95% CLT UCL	3.558	95% Jackknife UCL	3.745
95% Standard Bootstrap UCL	3.504	95% Bootstrap-t UCL	3.732
95% Hall's Bootstrap UCL	3.271	95% Percentile Bootstrap UCL	3.523
95% BCA Bootstrap UCL	3.414		
90% Chebyshev(Mean, Sd) UCL	4.243	95% Chebyshev(Mean, Sd) UCL	4.93
97.5% Chebyshev(Mean, Sd) UCL	5.884	99% Chebyshev(Mean, Sd) UCL	7.756

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.45	Mean	22.41
Maximum	39.6	Median	23.85
SD	13.38	Std. Error of Mean	5.462
Coefficient of Variation	0.597	Skewness	-0.00599
Mean of logged Data	2.917	SD of logged Data	0.723

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.42	95% Adjusted-CLT UCL (Chen-1995)	31.38
		95% Modified-t UCL (Johnson-1978)	33.42

Nonparametric Distribution Free UCLs

95% CLT UCL	31.4	95% Jackknife UCL	33.42
95% Standard Bootstrap UCL	30.63	95% Bootstrap-t UCL	33.88
95% Hall's Bootstrap UCL	29.16	95% Percentile Bootstrap UCL	30.95
95% BCA Bootstrap UCL	31.26		
90% Chebyshev(Mean, Sd) UCL	38.8	95% Chebyshev(Mean, Sd) UCL	46.22
97.5% Chebyshev(Mean, Sd) UCL	56.52	99% Chebyshev(Mean, Sd) UCL	76.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.9	Mean	54.35
Maximum	95.3	Median	56.3
SD	31.81	Std. Error of Mean	12.99
Coefficient of Variation	0.585	Skewness	0.0802
Mean of logged Data	3.821	SD of logged Data	0.677

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	80.52	95% Adjusted-CLT UCL (Chen-1995)	76.16
		95% Modified-t UCL (Johnson-1978)	80.59

Nonparametric Distribution Free UCLs

95% CLT UCL	75.71	95% Jackknife UCL	80.52
95% Standard Bootstrap UCL	73.78	95% Bootstrap-t UCL	83.16
95% Hall's Bootstrap UCL	69.23	95% Percentile Bootstrap UCL	73.28
95% BCA Bootstrap UCL	73.55		
90% Chebyshev(Mean, Sd) UCL	93.31	95% Chebyshev(Mean, Sd) UCL	111

97.5% Chebyshev(Mean, Sd) UCL	135.4	99% Chebyshev(Mean, Sd) UCL	183.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.8	Mean	66.68
Maximum	94.4	Median	68.5
SD	21.18	Std. Error of Mean	8.646
Coefficient of Variation	0.318	Skewness	-0.123
Mean of logged Data	4.154	SD of logged Data	0.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	84.11	95% Adjusted-CLT UCL (Chen-1995)	80.44
		95% Modified-t UCL (Johnson-1978)	84.03

Nonparametric Distribution Free UCLs

95% CLT UCL	80.91	95% Jackknife UCL	84.11
95% Standard Bootstrap UCL	79.73	95% Bootstrap-t UCL	84.76
95% Hall's Bootstrap UCL	78.31	95% Percentile Bootstrap UCL	79.6
95% BCA Bootstrap UCL	79.6		
90% Chebyshev(Mean, Sd) UCL	92.62	95% Chebyshev(Mean, Sd) UCL	104.4
97.5% Chebyshev(Mean, Sd) UCL	120.7	99% Chebyshev(Mean, Sd) UCL	152.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.675	Mean	62.45
Maximum	105	Median	66.7
SD	33.19	Std. Error of Mean	13.55
Coefficient of Variation	0.532	Skewness	-1.013
Mean of logged Data	3.787	SD of logged Data	1.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	89.75	95% Adjusted-CLT UCL (Chen-1995)	78.75
		95% Modified-t UCL (Johnson-1978)	88.82

Nonparametric Distribution Free UCLs

95% CLT UCL	84.74	95% Jackknife UCL	89.75
95% Standard Bootstrap UCL	83.41	95% Bootstrap-t UCL	81.48
95% Hall's Bootstrap UCL	80.42	95% Percentile Bootstrap UCL	80.57
95% BCA Bootstrap UCL	78.57		
90% Chebyshev(Mean, Sd) UCL	103.1	95% Chebyshev(Mean, Sd) UCL	121.5
97.5% Chebyshev(Mean, Sd) UCL	147.1	99% Chebyshev(Mean, Sd) UCL	197.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:59:32 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404659) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.89	Mean	7.24
Maximum	10.6	Median	6.765
SD	2.091	Std. Error of Mean	0.854
Coefficient of Variation	0.289	Skewness	0.74
Mean of logged Data	1.946	SD of logged Data	0.282

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.96	95% Adjusted-CLT UCL (Chen-1995)	8.92
		95% Modified-t UCL (Johnson-1978)	9.003

Nonparametric Distribution Free UCLs

95% CLT UCL	8.644	95% Jackknife UCL	8.96
95% Standard Bootstrap UCL	8.497	95% Bootstrap-t UCL	9.337
95% Hall's Bootstrap UCL	9.514	95% Percentile Bootstrap UCL	8.615
95% BCA Bootstrap UCL	8.695		
90% Chebyshev(Mean, Sd) UCL	9.801	95% Chebyshev(Mean, Sd) UCL	10.96
97.5% Chebyshev(Mean, Sd) UCL	12.57	99% Chebyshev(Mean, Sd) UCL	15.74

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.637	Mean	1.615
Maximum	2.56	Median	1.78
SD	0.764	Std. Error of Mean	0.312
Coefficient of Variation	0.473	Skewness	-0.237
Mean of logged Data	0.363	SD of logged Data	0.559

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.243	95% Adjusted-CLT UCL (Chen-1995)	2.096
		95% Modified-t UCL (Johnson-1978)	2.238

Nonparametric Distribution Free UCLs

95% CLT UCL	2.128	95% Jackknife UCL	2.243
95% Standard Bootstrap UCL	2.081	95% Bootstrap-t UCL	2.185
95% Hall's Bootstrap UCL	2.023	95% Percentile Bootstrap UCL	2.083
95% BCA Bootstrap UCL	2.038		
90% Chebyshev(Mean, Sd) UCL	2.551	95% Chebyshev(Mean, Sd) UCL	2.974
97.5% Chebyshev(Mean, Sd) UCL	3.562	99% Chebyshev(Mean, Sd) UCL	4.718

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.61	Mean	4.918
Maximum	8.5	Median	4.68
SD	3.093	Std. Error of Mean	1.263
Coefficient of Variation	0.629	Skewness	0.0946
Mean of logged Data	1.391	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.462	95% Adjusted-CLT UCL (Chen-1995)	7.046
		95% Modified-t UCL (Johnson-1978)	7.47

Nonparametric Distribution Free UCLs

95% CLT UCL	6.994	95% Jackknife UCL	7.462
95% Standard Bootstrap UCL	6.806	95% Bootstrap-t UCL	7.406
95% Hall's Bootstrap UCL	6.163	95% Percentile Bootstrap UCL	6.923
95% BCA Bootstrap UCL	6.832		
90% Chebyshev(Mean, Sd) UCL	8.705	95% Chebyshev(Mean, Sd) UCL	10.42
97.5% Chebyshev(Mean, Sd) UCL	12.8	99% Chebyshev(Mean, Sd) UCL	17.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.82	Mean	33.05
Maximum	64.4	Median	28.35
SD	21.21	Std. Error of Mean	8.659
Coefficient of Variation	0.642	Skewness	0.596
Mean of logged Data	3.303	SD of logged Data	0.713

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	50.5	95% Adjusted-CLT UCL (Chen-1995)	49.55
		95% Modified-t UCL (Johnson-1978)	50.85

Nonparametric Distribution Free UCLs

95% CLT UCL	47.3	95% Jackknife UCL	50.5
95% Standard Bootstrap UCL	45.78	95% Bootstrap-t UCL	62.39
95% Hall's Bootstrap UCL	63.74	95% Percentile Bootstrap UCL	46.59
95% BCA Bootstrap UCL	47.3		
90% Chebyshev(Mean, Sd) UCL	59.03	95% Chebyshev(Mean, Sd) UCL	70.8
97.5% Chebyshev(Mean, Sd) UCL	87.13	99% Chebyshev(Mean, Sd) UCL	119.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.9	Mean	49.38
Maximum	98.4	Median	41.8
SD	32.72	Std. Error of Mean	13.36
Coefficient of Variation	0.663	Skewness	0.621
Mean of logged Data	3.686	SD of logged Data	0.753

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	76.3	95% Adjusted-CLT UCL (Chen-1995)	74.98
		95% Modified-t UCL (Johnson-1978)	76.87

Nonparametric Distribution Free UCLs

95% CLT UCL	71.36	95% Jackknife UCL	76.3
95% Standard Bootstrap UCL	69.33	95% Bootstrap-t UCL	92.05
95% Hall's Bootstrap UCL	109.9	95% Percentile Bootstrap UCL	69.15
95% BCA Bootstrap UCL	70.67		
90% Chebyshev(Mean, Sd) UCL	89.46	95% Chebyshev(Mean, Sd) UCL	107.6
97.5% Chebyshev(Mean, Sd) UCL	132.8	99% Chebyshev(Mean, Sd) UCL	182.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.3	Mean	62.13
Maximum	125	Median	53

SD	41.44	Std. Error of Mean	16.92
Coefficient of Variation	0.667	Skewness	0.634
Mean of logged Data	3.917	SD of logged Data	0.745

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	96.22	95% Adjusted-CLT UCL (Chen-1995)	94.64
		95% Modified-t UCL (Johnson-1978)	96.95

Nonparametric Distribution Free UCLs

95% CLT UCL	89.96	95% Jackknife UCL	96.22
95% Standard Bootstrap UCL	87.58	95% Bootstrap-t UCL	109.6
95% Hall's Bootstrap UCL	114.1	95% Percentile Bootstrap UCL	87.33
95% BCA Bootstrap UCL	90.9		
90% Chebyshev(Mean, Sd) UCL	112.9	95% Chebyshev(Mean, Sd) UCL	135.9
97.5% Chebyshev(Mean, Sd) UCL	167.8	99% Chebyshev(Mean, Sd) UCL	230.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.59	Mean	38.08
Maximum	79.5	Median	31.8
SD	26.94	Std. Error of Mean	11
Coefficient of Variation	0.708	Skewness	0.674
Mean of logged Data	3.398	SD of logged Data	0.798

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.25	95% Adjusted-CLT UCL (Chen-1995)	59.41
		95% Modified-t UCL (Johnson-1978)	60.75

Nonparametric Distribution Free UCLs

95% CLT UCL	56.17	95% Jackknife UCL	60.25
95% Standard Bootstrap UCL	54.29	95% Bootstrap-t UCL	66.81
95% Hall's Bootstrap UCL	64.66	95% Percentile Bootstrap UCL	55.23
95% BCA Bootstrap UCL	57.92		
90% Chebyshev(Mean, Sd) UCL	71.08	95% Chebyshev(Mean, Sd) UCL	86.03
97.5% Chebyshev(Mean, Sd) UCL	106.8	99% Chebyshev(Mean, Sd) UCL	147.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.7	Mean	24.8
Maximum	48.9	Median	21.4
SD	15.63	Std. Error of Mean	6.382
Coefficient of Variation	0.63	Skewness	0.66
Mean of logged Data	3.027	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.66	95% Adjusted-CLT UCL (Chen-1995)	37.13
		95% Modified-t UCL (Johnson-1978)	37.95

Nonparametric Distribution Free UCLs

95% CLT UCL	35.3	95% Jackknife UCL	37.66
95% Standard Bootstrap UCL	34.35	95% Bootstrap-t UCL	40.97
95% Hall's Bootstrap UCL	41.2	95% Percentile Bootstrap UCL	34.97
95% BCA Bootstrap UCL	36.17		
90% Chebyshev(Mean, Sd) UCL	43.95	95% Chebyshev(Mean, Sd) UCL	52.62
97.5% Chebyshev(Mean, Sd) UCL	64.66	99% Chebyshev(Mean, Sd) UCL	88.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.7	Mean	47.5
Maximum	91.6	Median	41.95
SD	29.65	Std. Error of Mean	12.1
Coefficient of Variation	0.624	Skewness	0.557
Mean of logged Data	3.675	SD of logged Data	0.695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	71.89	95% Adjusted-CLT UCL (Chen-1995)	70.35
		95% Modified-t UCL (Johnson-1978)	72.35

Nonparametric Distribution Free UCLs

95% CLT UCL	67.41	95% Jackknife UCL	71.89
95% Standard Bootstrap UCL	65.6	95% Bootstrap-t UCL	80.58
95% Hall's Bootstrap UCL	81.89	95% Percentile Bootstrap UCL	66.43
95% BCA Bootstrap UCL	67.52		
90% Chebyshev(Mean, Sd) UCL	83.81	95% Chebyshev(Mean, Sd) UCL	100.3
97.5% Chebyshev(Mean, Sd) UCL	123.1	99% Chebyshev(Mean, Sd) UCL	167.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.8	Mean	9.52
Maximum	18.7	Median	8.885
SD	6.028	Std. Error of Mean	2.461
Coefficient of Variation	0.633	Skewness	0.516
Mean of logged Data	2.059	SD of logged Data	0.715

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.48	95% Adjusted-CLT UCL (Chen-1995)	14.12
		95% Modified-t UCL (Johnson-1978)	14.56

Nonparametric Distribution Free UCLs

95% CLT UCL	13.57	95% Jackknife UCL	14.48
95% Standard Bootstrap UCL	13.2	95% Bootstrap-t UCL	15.51
95% Hall's Bootstrap UCL	13.16	95% Percentile Bootstrap UCL	13.33
95% BCA Bootstrap UCL	13.8		
90% Chebyshev(Mean, Sd) UCL	16.9	95% Chebyshev(Mean, Sd) UCL	20.25
97.5% Chebyshev(Mean, Sd) UCL	24.89	99% Chebyshev(Mean, Sd) UCL	34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.6	Mean	53.67
Maximum	108	Median	43.25
SD	35.9	Std. Error of Mean	14.66
Coefficient of Variation	0.669	Skewness	0.734
Mean of logged Data	3.781	SD of logged Data	0.714

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	83.2	95% Adjusted-CLT UCL (Chen-1995)	82.47
		95% Modified-t UCL (Johnson-1978)	83.93

Nonparametric Distribution Free UCLs

95% CLT UCL	77.78	95% Jackknife UCL	83.2
95% Standard Bootstrap UCL	76	95% Bootstrap-t UCL	105
95% Hall's Bootstrap UCL	133	95% Percentile Bootstrap UCL	76.93

95% BCA Bootstrap UCL	80.53		
90% Chebyshev(Mean, Sd) UCL	97.64	95% Chebyshev(Mean, Sd) UCL	117.6
97.5% Chebyshev(Mean, Sd) UCL	145.2	99% Chebyshev(Mean, Sd) UCL	199.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.335	Mean	3.316
Maximum	5.25	Median	3.37
SD	2.083	Std. Error of Mean	0.851
Coefficient of Variation	0.628	Skewness	-0.00419
Mean of logged Data	0.999	SD of logged Data	0.717

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.03	95% Adjusted-CLT UCL (Chen-1995)	4.713
		95% Modified-t UCL (Johnson-1978)	5.03

Nonparametric Distribution Free UCLs

95% CLT UCL	4.715	95% Jackknife UCL	5.03
95% Standard Bootstrap UCL	4.613	95% Bootstrap-t UCL	5.034
95% Hall's Bootstrap UCL	3.998	95% Percentile Bootstrap UCL	4.587
95% BCA Bootstrap UCL	4.578		
90% Chebyshev(Mean, Sd) UCL	5.868	95% Chebyshev(Mean, Sd) UCL	7.023
97.5% Chebyshev(Mean, Sd) UCL	8.628	99% Chebyshev(Mean, Sd) UCL	11.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.9	Mean	42.57
Maximum	88.8	Median	33.75
SD	29.8	Std. Error of Mean	12.17
Coefficient of Variation	0.7	Skewness	0.775
Mean of logged Data	3.522	SD of logged Data	0.772

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.09	95% Adjusted-CLT UCL (Chen-1995)	66.69
		95% Modified-t UCL (Johnson-1978)	67.73

Nonparametric Distribution Free UCLs

95% CLT UCL	62.58	95% Jackknife UCL	67.09
95% Standard Bootstrap UCL	60.99	95% Bootstrap-t UCL	94.69
95% Hall's Bootstrap UCL	114.9	95% Percentile Bootstrap UCL	61.32
95% BCA Bootstrap UCL	64.1		
90% Chebyshev(Mean, Sd) UCL	79.07	95% Chebyshev(Mean, Sd) UCL	95.6
97.5% Chebyshev(Mean, Sd) UCL	118.6	99% Chebyshev(Mean, Sd) UCL	163.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.93	Mean	9.082
Maximum	12.2	Median	9.815
SD	3.247	Std. Error of Mean	1.325
Coefficient of Variation	0.358	Skewness	-0.784
Mean of logged Data	2.137	SD of logged Data	0.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.75	95% Adjusted-CLT UCL (Chen-1995)	10.81
		95% Modified-t UCL (Johnson-1978)	11.68

Nonparametric Distribution Free UCLs

95% CLT UCL	11.26	95% Jackknife UCL	11.75
95% Standard Bootstrap UCL	11	95% Bootstrap-t UCL	11.27
95% Hall's Bootstrap UCL	10.69	95% Percentile Bootstrap UCL	10.94
95% BCA Bootstrap UCL	10.82		
90% Chebyshev(Mean, Sd) UCL	13.06	95% Chebyshev(Mean, Sd) UCL	14.86
97.5% Chebyshev(Mean, Sd) UCL	17.36	99% Chebyshev(Mean, Sd) UCL	22.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.46	Mean	23.48
Maximum	47.4	Median	18.55
SD	15.79	Std. Error of Mean	6.448
Coefficient of Variation	0.673	Skewness	0.785
Mean of logged Data	2.956	SD of logged Data	0.708

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.47	95% Adjusted-CLT UCL (Chen-1995)	36.29
		95% Modified-t UCL (Johnson-1978)	36.81

Nonparametric Distribution Free UCLs

95% CLT UCL	34.08	95% Jackknife UCL	36.47
95% Standard Bootstrap UCL	33.02	95% Bootstrap-t UCL	52.44

95% Hall's Bootstrap UCL	122.8	95% Percentile Bootstrap UCL	33.65
95% BCA Bootstrap UCL	33.68		
90% Chebyshev(Mean, Sd) UCL	42.82	95% Chebyshev(Mean, Sd) UCL	51.58
97.5% Chebyshev(Mean, Sd) UCL	63.74	99% Chebyshev(Mean, Sd) UCL	87.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17	Mean	54.4
Maximum	106	Median	45.4
SD	34.86	Std. Error of Mean	14.23
Coefficient of Variation	0.641	Skewness	0.651
Mean of logged Data	3.807	SD of logged Data	0.695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	83.08	95% Adjusted-CLT UCL (Chen-1995)	81.85
		95% Modified-t UCL (Johnson-1978)	83.71

Nonparametric Distribution Free UCLs

95% CLT UCL	77.81	95% Jackknife UCL	83.08
95% Standard Bootstrap UCL	75.27	95% Bootstrap-t UCL	109.1
95% Hall's Bootstrap UCL	134.7	95% Percentile Bootstrap UCL	76.68
95% BCA Bootstrap UCL	77.2		
90% Chebyshev(Mean, Sd) UCL	97.1	95% Chebyshev(Mean, Sd) UCL	116.4
97.5% Chebyshev(Mean, Sd) UCL	143.3	99% Chebyshev(Mean, Sd) UCL	196

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.3	Mean	16.55
Maximum	24.3	Median	15.2
SD	3.843	Std. Error of Mean	1.569
Coefficient of Variation	0.232	Skewness	2.32
Mean of logged Data	2.788	SD of logged Data	0.201

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.71	95% Adjusted-CLT UCL (Chen-1995)	20.72
		95% Modified-t UCL (Johnson-1978)	19.96

Nonparametric Distribution Free UCLs

95% CLT UCL	19.13	95% Jackknife UCL	19.71
95% Standard Bootstrap UCL	18.94	95% Bootstrap-t UCL	31.47
95% Hall's Bootstrap UCL	32.14	95% Percentile Bootstrap UCL	19.58
95% BCA Bootstrap UCL	19.87		
90% Chebyshev(Mean, Sd) UCL	21.26	95% Chebyshev(Mean, Sd) UCL	23.39
97.5% Chebyshev(Mean, Sd) UCL	26.35	99% Chebyshev(Mean, Sd) UCL	32.16

Suggested UCL to Use

95% Student's-t UCL	19.71	or 95% Modified-t UCL	19.96

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.2	Mean	53.72
Maximum	70.4	Median	60.25
SD	17.65	Std. Error of Mean	7.205
Coefficient of Variation	0.329	Skewness	-1.093
Mean of logged Data	3.924	SD of logged Data	0.407

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	68.24	95% Adjusted-CLT UCL (Chen-1995)	62.13
		95% Modified-t UCL (Johnson-1978)	67.7

Nonparametric Distribution Free UCLs

95% CLT UCL	65.57	95% Jackknife UCL	68.24
95% Standard Bootstrap UCL	64.7	95% Bootstrap-t UCL	64.28
95% Hall's Bootstrap UCL	61.88	95% Percentile Bootstrap UCL	63.9
95% BCA Bootstrap UCL	62.7		
90% Chebyshev(Mean, Sd) UCL	75.33	95% Chebyshev(Mean, Sd) UCL	85.12
97.5% Chebyshev(Mean, Sd) UCL	98.71	99% Chebyshev(Mean, Sd) UCL	125.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.7	Mean	56.55
Maximum	64.7	Median	56.6
SD	8.248	Std. Error of Mean	3.367
Coefficient of Variation	0.146	Skewness	0.00208
Mean of logged Data	4.026	SD of logged Data	0.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	63.34	95% Adjusted-CLT UCL (Chen-1995)	62.09
		95% Modified-t UCL (Johnson-1978)	63.34

Nonparametric Distribution Free UCLs

95% CLT UCL	62.09	95% Jackknife UCL	63.34
95% Standard Bootstrap UCL	61.54	95% Bootstrap-t UCL	63.45
95% Hall's Bootstrap UCL	59.27	95% Percentile Bootstrap UCL	61.6
95% BCA Bootstrap UCL	61.6		

90% Chebyshev(Mean, Sd) UCL	66.65	95% Chebyshev(Mean, Sd) UCL	71.23
97.5% Chebyshev(Mean, Sd) UCL	77.58	99% Chebyshev(Mean, Sd) UCL	90.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:41:17 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404664) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.692	Mean	0.829
Maximum	0.975	Median	0.821
SD	0.142	Std. Error of Mean	0.0818
Coefficient of Variation	0.171	Skewness	0.264
Mean of logged Data	-0.197	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.068	95% Adjusted-CLT UCL (Chen-1995)	0.977
		95% Modified-t UCL (Johnson-1978)	1.07

Nonparametric Distribution Free UCLs

95% CLT UCL	0.964	95% Jackknife UCL	1.068
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.075	95% Chebyshev(Mean, Sd) UCL	1.186
97.5% Chebyshev(Mean, Sd) UCL	1.34	99% Chebyshev(Mean, Sd) UCL	1.643

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	0.664	Mean	0.754
Maximum	0.849	Median	0.748
SD	0.0926	Std. Error of Mean	0.0535
Coefficient of Variation	0.123	Skewness	0.274
Mean of logged Data	-0.288	SD of logged Data	0.123

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.91	95% Adjusted-CLT UCL (Chen-1995)	0.851
		95% Modified-t UCL (Johnson-1978)	0.911

Nonparametric Distribution Free UCLs

95% CLT UCL	0.842	95% Jackknife UCL	0.91
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.914	95% Chebyshev(Mean, Sd) UCL	0.987
97.5% Chebyshev(Mean, Sd) UCL	1.088	99% Chebyshev(Mean, Sd) UCL	1.286

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.86	Mean	2.083
Maximum	2.46	Median	1.93
SD	0.328	Std. Error of Mean	0.189
Coefficient of Variation	0.157	Skewness	1.644
Mean of logged Data	0.726	SD of logged Data	0.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	2.636	95% Adjusted-CLT UCL (Chen-1995)	2.587
		95% Modified-t UCL (Johnson-1978)	2.666

Nonparametric Distribution Free UCLs

95% CLT UCL	2.395	95% Jackknife UCL	2.636
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.652	95% Chebyshev(Mean, Sd) UCL	2.909
97.5% Chebyshev(Mean, Sd) UCL	3.266	99% Chebyshev(Mean, Sd) UCL	3.968

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	17.1	Mean	17.6
Maximum	18.3	Median	17.4
SD	0.624	Std. Error of Mean	0.361
Coefficient of Variation	0.0355	Skewness	1.293
Mean of logged Data	2.867	SD of logged Data	0.0352

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.65	95% Adjusted-CLT UCL (Chen-1995)	18.48
		95% Modified-t UCL (Johnson-1978)	18.7

Nonparametric Distribution Free UCLs

95% CLT UCL	18.19	95% Jackknife UCL	18.65
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	18.68	95% Chebyshev(Mean, Sd) UCL	19.17
97.5% Chebyshev(Mean, Sd) UCL	19.85	99% Chebyshev(Mean, Sd) UCL	21.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	23.3	Mean	24.03
Maximum	24.8	Median	24
SD	0.751	Std. Error of Mean	0.433
Coefficient of Variation	0.0312	Skewness	0.199
Mean of logged Data	3.179	SD of logged Data	0.0312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.3	95% Adjusted-CLT UCL (Chen-1995)	24.8
		95% Modified-t UCL (Johnson-1978)	25.31

Nonparametric Distribution Free UCLs

95% CLT UCL	24.75	95% Jackknife UCL	25.3
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.33	95% Chebyshev(Mean, Sd) UCL	25.92
97.5% Chebyshev(Mean, Sd) UCL	26.74	99% Chebyshev(Mean, Sd) UCL	28.34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	32.9	Mean	34.17
Maximum	36.1	Median	33.5
SD	1.701	Std. Error of Mean	0.982
Coefficient of Variation	0.0498	Skewness	1.493
Mean of logged Data	3.53	SD of logged Data	0.0492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.03	95% Adjusted-CLT UCL (Chen-1995)	36.69
		95% Modified-t UCL (Johnson-1978)	37.18

Nonparametric Distribution Free UCLs

95% CLT UCL	35.78	95% Jackknife UCL	37.03
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	37.11	95% Chebyshev(Mean, Sd) UCL	38.45
97.5% Chebyshev(Mean, Sd) UCL	40.3	99% Chebyshev(Mean, Sd) UCL	43.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	16.9	Mean	18
Maximum	19.3	Median	17.8
SD	1.212	Std. Error of Mean	0.7
Coefficient of Variation	0.0674	Skewness	0.722
Mean of logged Data	2.889	SD of logged Data	0.0669

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.04	95% Adjusted-CLT UCL (Chen-1995)	19.46
		95% Modified-t UCL (Johnson-1978)	20.09

Nonparametric Distribution Free UCLs

95% CLT UCL	19.15	95% Jackknife UCL	20.04

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	20.1	95% Chebyshev(Mean, Sd) UCL	21.05
97.5% Chebyshev(Mean, Sd) UCL	22.37	99% Chebyshev(Mean, Sd) UCL	24.96

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	12.3	Mean	12.77
Maximum	13.7	Median	12.3
SD	0.808	Std. Error of Mean	0.467
Coefficient of Variation	0.0633	Skewness	1.732
Mean of logged Data	2.546	SD of logged Data	0.0622

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.13	95% Adjusted-CLT UCL (Chen-1995)	14.03
		95% Modified-t UCL (Johnson-1978)	14.21

Nonparametric Distribution Free UCLs

95% CLT UCL	13.53	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.17	95% Chebyshev(Mean, Sd) UCL	14.8
97.5% Chebyshev(Mean, Sd) UCL	15.68	99% Chebyshev(Mean, Sd) UCL	17.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	22.8	Mean	23.47
Maximum	23.9	Median	23.7
SD	0.586	Std. Error of Mean	0.338
Coefficient of Variation	0.025	Skewness	-1.508
Mean of logged Data	3.155	SD of logged Data	0.0251

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.45	95% Adjusted-CLT UCL (Chen-1995)	23.71
		95% Modified-t UCL (Johnson-1978)	24.41

Nonparametric Distribution Free UCLs

95% CLT UCL	24.02	95% Jackknife UCL	24.45
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	24.48	95% Chebyshev(Mean, Sd) UCL	24.94
97.5% Chebyshev(Mean, Sd) UCL	25.58	99% Chebyshev(Mean, Sd) UCL	26.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.51	Mean	4.95
Maximum	5.37	Median	4.97
SD	0.43	Std. Error of Mean	0.248
Coefficient of Variation	0.0869	Skewness	-0.209
Mean of logged Data	1.597	SD of logged Data	0.0875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.676	95% Adjusted-CLT UCL (Chen-1995)	5.327
		95% Modified-t UCL (Johnson-1978)	5.671

Nonparametric Distribution Free UCLs

95% CLT UCL	5.359	95% Jackknife UCL	5.676
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.695	95% Chebyshev(Mean, Sd) UCL	6.033
97.5% Chebyshev(Mean, Sd) UCL	6.502	99% Chebyshev(Mean, Sd) UCL	7.422

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	27	Mean	28.07
Maximum	30.1	Median	27.1
SD	1.762	Std. Error of Mean	1.017
Coefficient of Variation	0.0628	Skewness	1.726
Mean of logged Data	3.333	SD of logged Data	0.0617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.04	95% Adjusted-CLT UCL (Chen-1995)	30.82
		95% Modified-t UCL (Johnson-1978)	31.21

Nonparametric Distribution Free UCLs

95% CLT UCL	29.74	95% Jackknife UCL	31.04
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	31.12	95% Chebyshev(Mean, Sd) UCL	32.5
97.5% Chebyshev(Mean, Sd) UCL	34.42	99% Chebyshev(Mean, Sd) UCL	38.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.18	Mean	1.262
Maximum	1.305	Median	1.3
SD	0.0708	Std. Error of Mean	0.0409
Coefficient of Variation	0.0561	Skewness	-1.722
Mean of logged Data	0.231	SD of logged Data	0.0571

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.381	95% Adjusted-CLT UCL (Chen-1995)	1.285
		95% Modified-t UCL (Johnson-1978)	1.374

Nonparametric Distribution Free UCLs

95% CLT UCL	1.329	95% Jackknife UCL	1.381
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.384	95% Chebyshev(Mean, Sd) UCL	1.44
97.5% Chebyshev(Mean, Sd) UCL	1.517	99% Chebyshev(Mean, Sd) UCL	1.668

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	17.8	Mean	19.03
Maximum	20.1	Median	19.2
SD	1.159	Std. Error of Mean	0.669
Coefficient of Variation	0.0609	Skewness	-0.634
Mean of logged Data	2.945	SD of logged Data	0.0614

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.99	95% Adjusted-CLT UCL (Chen-1995)	19.87
		95% Modified-t UCL (Johnson-1978)	20.95

Nonparametric Distribution Free UCLs

95% CLT UCL	20.13	95% Jackknife UCL	20.99
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	21.04	95% Chebyshev(Mean, Sd) UCL	21.95
97.5% Chebyshev(Mean, Sd) UCL	23.21	99% Chebyshev(Mean, Sd) UCL	25.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.08	Mean	1.337
Maximum	1.6	Median	1.33
SD	0.26	Std. Error of Mean	0.15

Coefficient of Variation	0.195	Skewness	0.115
Mean of logged Data	0.277	SD of logged Data	0.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.775	95% Adjusted-CLT UCL (Chen-1995)	1.594
		95% Modified-t UCL (Johnson-1978)	1.777

Nonparametric Distribution Free UCLs

95% CLT UCL	1.584	95% Jackknife UCL	1.775
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.787	95% Chebyshev(Mean, Sd) UCL	1.991
97.5% Chebyshev(Mean, Sd) UCL	2.274	99% Chebyshev(Mean, Sd) UCL	2.831

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	10	Mean	10.87
Maximum	12.5	Median	10.1
SD	1.415	Std. Error of Mean	0.817
Coefficient of Variation	0.13	Skewness	1.722
Mean of logged Data	2.38	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.25	95% Adjusted-CLT UCL (Chen-1995)	13.08
		95% Modified-t UCL (Johnson-1978)	13.39

Nonparametric Distribution Free UCLs

95% CLT UCL	12.21	95% Jackknife UCL	13.25
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.32	95% Chebyshev(Mean, Sd) UCL	14.43
97.5% Chebyshev(Mean, Sd) UCL	15.97	99% Chebyshev(Mean, Sd) UCL	19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	27.5	Mean	28.63
Maximum	30.7	Median	27.7
SD	1.793	Std. Error of Mean	1.035
Coefficient of Variation	0.0626	Skewness	1.708
Mean of logged Data	3.353	SD of logged Data	0.0616

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.66	95% Adjusted-CLT UCL (Chen-1995)	31.43
		95% Modified-t UCL (Johnson-1978)	31.83

Nonparametric Distribution Free UCLs

95% CLT UCL	30.34	95% Jackknife UCL	31.66
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	31.74	95% Chebyshev(Mean, Sd) UCL	33.14
97.5% Chebyshev(Mean, Sd) UCL	35.1	99% Chebyshev(Mean, Sd) UCL	38.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	13.4	Mean	13.53
Maximum	13.6	Median	13.6
SD	0.115	Std. Error of Mean	0.0667
Coefficient of Variation	0.00853	Skewness	-1.732
Mean of logged Data	2.605	SD of logged Data	0.00855

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.73	95% Adjusted-CLT UCL (Chen-1995)	13.57
		95% Modified-t UCL (Johnson-1978)	13.72

Nonparametric Distribution Free UCLs

95% CLT UCL	13.64	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.73	95% Chebyshev(Mean, Sd) UCL	13.82
97.5% Chebyshev(Mean, Sd) UCL	13.95	99% Chebyshev(Mean, Sd) UCL	14.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.1	Mean	15.93
Maximum	16.8	Median	15.9
SD	0.85	Std. Error of Mean	0.491
Coefficient of Variation	0.0534	Skewness	0.176
Mean of logged Data	2.767	SD of logged Data	0.0534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.37	95% Adjusted-CLT UCL (Chen-1995)	16.79
		95% Modified-t UCL (Johnson-1978)	17.38

Nonparametric Distribution Free UCLs

95% CLT UCL	16.74	95% Jackknife UCL	17.37
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	17.41	95% Chebyshev(Mean, Sd) UCL	18.07
97.5% Chebyshev(Mean, Sd) UCL	19	99% Chebyshev(Mean, Sd) UCL	20.82

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	83.5	Mean	85.13
Maximum	86.2	Median	85.7
SD	1.436	Std. Error of Mean	0.829
Coefficient of Variation	0.0169	Skewness	-1.499
Mean of logged Data	4.444	SD of logged Data	0.0169

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	87.55	95% Adjusted-CLT UCL (Chen-1995)	85.73
		95% Modified-t UCL (Johnson-1978)	87.44

Nonparametric Distribution Free UCLs

95% CLT UCL	86.5	95% Jackknife UCL	87.55

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	87.62	95% Chebyshev(Mean, Sd) UCL	88.75
97.5% Chebyshev(Mean, Sd) UCL	90.31	99% Chebyshev(Mean, Sd) UCL	93.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:05:08 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404665) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.789	Mean	1.958
Maximum	6.82	Median	0.929
SD	2.397	Std. Error of Mean	0.978
Coefficient of Variation	1.224	Skewness	2.385
Mean of logged Data	0.282	SD of logged Data	0.837

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.929	95% Adjusted-CLT UCL (Chen-1995)	4.585
		95% Modified-t UCL (Johnson-1978)	4.088

Nonparametric Distribution Free UCLs

95% CLT UCL	3.567	95% Jackknife UCL	3.929
95% Standard Bootstrap UCL	3.452	95% Bootstrap-t UCL	28.53
95% Hall's Bootstrap UCL	17.26	95% Percentile Bootstrap UCL	3.828
95% BCA Bootstrap UCL	4.81		
90% Chebyshev(Mean, Sd) UCL	4.893	95% Chebyshev(Mean, Sd) UCL	6.222
97.5% Chebyshev(Mean, Sd) UCL	8.068	99% Chebyshev(Mean, Sd) UCL	11.69

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.51	Mean	0.657
Maximum	1.24	Median	0.536
SD	0.288	Std. Error of Mean	0.117
Coefficient of Variation	0.438	Skewness	2.388
Mean of logged Data	-0.479	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.893	95% Adjusted-CLT UCL (Chen-1995)	0.972
		95% Modified-t UCL (Johnson-1978)	0.912

Nonparametric Distribution Free UCLs

95% CLT UCL	0.85	95% Jackknife UCL	0.893
95% Standard Bootstrap UCL	0.835	95% Bootstrap-t UCL	3.859
95% Hall's Bootstrap UCL	2.165	95% Percentile Bootstrap UCL	0.885
95% BCA Bootstrap UCL	0.998		
90% Chebyshev(Mean, Sd) UCL	1.009	95% Chebyshev(Mean, Sd) UCL	1.168
97.5% Chebyshev(Mean, Sd) UCL	1.39	99% Chebyshev(Mean, Sd) UCL	1.824

Suggested UCL to Use

95% Student's-t UCL	0.893	or 95% Modified-t UCL	0.912

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	3.32
Maximum	9.21	Median	2.138
SD	2.887	Std. Error of Mean	1.179
Coefficient of Variation	0.87	Skewness	2.443
Mean of logged Data	1.004	SD of logged Data	0.598

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	

95% Student's-t UCL	5.695	95% Adjusted-CLT UCL (Chen-1995)	6.515
		95% Modified-t UCL (Johnson-1978)	5.891

Nonparametric Distribution Free UCLs

95% CLT UCL	5.259	95% Jackknife UCL	5.695
95% Standard Bootstrap UCL	5.078	95% Bootstrap-t UCL	76.75
95% Hall's Bootstrap UCL	35.43	95% Percentile Bootstrap UCL	5.655
95% BCA Bootstrap UCL	5.742		
90% Chebyshev(Mean, Sd) UCL	6.856	95% Chebyshev(Mean, Sd) UCL	8.458
97.5% Chebyshev(Mean, Sd) UCL	10.68	99% Chebyshev(Mean, Sd) UCL	15.05

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.458

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.07	Mean	14.55
Maximum	46.1	Median	7.795
SD	16.2	Std. Error of Mean	6.615
Coefficient of Variation	1.113	Skewness	2.004
Mean of logged Data	2.266	SD of logged Data	0.938

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.88	95% Adjusted-CLT UCL (Chen-1995)	31.22
		95% Modified-t UCL (Johnson-1978)	28.78

Nonparametric Distribution Free UCLs

95% CLT UCL	25.43	95% Jackknife UCL	27.88
95% Standard Bootstrap UCL	24.47	95% Bootstrap-t UCL	59.9
95% Hall's Bootstrap UCL	79.43	95% Percentile Bootstrap UCL	25.28
95% BCA Bootstrap UCL	29.36		
90% Chebyshev(Mean, Sd) UCL	34.4	95% Chebyshev(Mean, Sd) UCL	43.38
97.5% Chebyshev(Mean, Sd) UCL	55.86	99% Chebyshev(Mean, Sd) UCL	80.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.23	Mean	18.52
Maximum	54	Median	12.12
SD	18.58	Std. Error of Mean	7.586
Coefficient of Variation	1.003	Skewness	1.824
Mean of logged Data	2.557	SD of logged Data	0.903

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	33.81	95% Adjusted-CLT UCL (Chen-1995)	37.04
		95% Modified-t UCL (Johnson-1978)	34.75

Nonparametric Distribution Free UCLs

95% CLT UCL	31	95% Jackknife UCL	33.81
95% Standard Bootstrap UCL	30.1	95% Bootstrap-t UCL	47.71
95% Hall's Bootstrap UCL	76.41	95% Percentile Bootstrap UCL	30.26
95% BCA Bootstrap UCL	34.62		
90% Chebyshev(Mean, Sd) UCL	41.28	95% Chebyshev(Mean, Sd) UCL	51.59
97.5% Chebyshev(Mean, Sd) UCL	65.9	99% Chebyshev(Mean, Sd) UCL	94.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.7	Mean	25.76
Maximum	76.7	Median	16.15
SD	26.41	Std. Error of Mean	10.78
Coefficient of Variation	1.025	Skewness	1.911
Mean of logged Data	2.887	SD of logged Data	0.893

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.49	95% Adjusted-CLT UCL (Chen-1995)	52.49
		95% Modified-t UCL (Johnson-1978)	48.89

Nonparametric Distribution Free UCLs

95% CLT UCL	43.5	95% Jackknife UCL	47.49
95% Standard Bootstrap UCL	42.37	95% Bootstrap-t UCL	75.18
95% Hall's Bootstrap UCL	108.8	95% Percentile Bootstrap UCL	44.68
95% BCA Bootstrap UCL	49.3		
90% Chebyshev(Mean, Sd) UCL	58.11	95% Chebyshev(Mean, Sd) UCL	72.76
97.5% Chebyshev(Mean, Sd) UCL	93.1	99% Chebyshev(Mean, Sd) UCL	133

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.8	Mean	14.7
Maximum	43	Median	9.545
SD	14.65	Std. Error of Mean	5.981
Coefficient of Variation	0.997	Skewness	1.921
Mean of logged Data	2.35	SD of logged Data	0.86

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.75	95% Adjusted-CLT UCL (Chen-1995)	29.55
		95% Modified-t UCL (Johnson-1978)	27.53

Nonparametric Distribution Free UCLs

95% CLT UCL	24.54	95% Jackknife UCL	26.75

95% Standard Bootstrap UCL	23.85	95% Bootstrap-t UCL	50.93
95% Hall's Bootstrap UCL	59.62	95% Percentile Bootstrap UCL	25.53
95% BCA Bootstrap UCL	27.88		
90% Chebyshev(Mean, Sd) UCL	32.64	95% Chebyshev(Mean, Sd) UCL	40.77
97.5% Chebyshev(Mean, Sd) UCL	52.05	99% Chebyshev(Mean, Sd) UCL	74.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.32	Mean	10.53
Maximum	31.2	Median	6.465
SD	10.65	Std. Error of Mean	4.348
Coefficient of Variation	1.012	Skewness	1.965
Mean of logged Data	2.013	SD of logged Data	0.857

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.29	95% Adjusted-CLT UCL (Chen-1995)	21.41
		95% Modified-t UCL (Johnson-1978)	19.87

Nonparametric Distribution Free UCLs

95% CLT UCL	17.68	95% Jackknife UCL	19.29
95% Standard Bootstrap UCL	16.92	95% Bootstrap-t UCL	31.63
95% Hall's Bootstrap UCL	44.09	95% Percentile Bootstrap UCL	18.29
95% BCA Bootstrap UCL	20.19		
90% Chebyshev(Mean, Sd) UCL	23.57	95% Chebyshev(Mean, Sd) UCL	29.48
97.5% Chebyshev(Mean, Sd) UCL	37.68	99% Chebyshev(Mean, Sd) UCL	53.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.5	Mean	18.33
Maximum	52.7	Median	11.36
SD	18.1	Std. Error of Mean	7.39
Coefficient of Variation	0.988	Skewness	1.797
Mean of logged Data	2.561	SD of logged Data	0.88

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.22	95% Adjusted-CLT UCL (Chen-1995)	36.28
		95% Modified-t UCL (Johnson-1978)	34.12

Nonparametric Distribution Free UCLs

95% CLT UCL	30.48	95% Jackknife UCL	33.22
95% Standard Bootstrap UCL	29.5	95% Bootstrap-t UCL	54.58
95% Hall's Bootstrap UCL	78.75	95% Percentile Bootstrap UCL	31.05
95% BCA Bootstrap UCL	34.99		
90% Chebyshev(Mean, Sd) UCL	40.5	95% Chebyshev(Mean, Sd) UCL	50.54
97.5% Chebyshev(Mean, Sd) UCL	64.48	99% Chebyshev(Mean, Sd) UCL	91.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.185	Mean	4.765
Maximum	11.1	Median	3.293
SD	3.142	Std. Error of Mean	1.283
Coefficient of Variation	0.659	Skewness	2.326
Mean of logged Data	1.437	SD of logged Data	0.492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.349	95% Adjusted-CLT UCL (Chen-1995)	8.176
		95% Modified-t UCL (Johnson-1978)	7.552

Nonparametric Distribution Free UCLs

95% CLT UCL	6.875	95% Jackknife UCL	7.349
95% Standard Bootstrap UCL	6.658	95% Bootstrap-t UCL	94.1
95% Hall's Bootstrap UCL	29.2	95% Percentile Bootstrap UCL	7.177
95% BCA Bootstrap UCL	7.583		
90% Chebyshev(Mean, Sd) UCL	8.613	95% Chebyshev(Mean, Sd) UCL	10.36
97.5% Chebyshev(Mean, Sd) UCL	12.77	99% Chebyshev(Mean, Sd) UCL	17.53

Suggested UCL to Use

95% Student's-t UCL	7.349	or 95% Modified-t UCL	7.552

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.3	Mean	27.18
Maximum	94.3	Median	13.14
SD	34.13	Std. Error of Mean	13.93
Coefficient of Variation	1.256	Skewness	2.088
Mean of logged Data	2.769	SD of logged Data	1.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.25	95% Adjusted-CLT UCL (Chen-1995)	62.79
		95% Modified-t UCL (Johnson-1978)	57.23

Nonparametric Distribution Free UCLs

95% CLT UCL	50.1	95% Jackknife UCL	55.25
95% Standard Bootstrap UCL	48.27	95% Bootstrap-t UCL	155.8
95% Hall's Bootstrap UCL	154.4	95% Percentile Bootstrap UCL	51.23
95% BCA Bootstrap UCL	60.08		
90% Chebyshev(Mean, Sd) UCL	68.98	95% Chebyshev(Mean, Sd) UCL	87.91
97.5% Chebyshev(Mean, Sd) UCL	114.2	99% Chebyshev(Mean, Sd) UCL	165.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.45	Mean	17.03
Maximum	50.2	Median	11
SD	17.21	Std. Error of Mean	7.027
Coefficient of Variation	1.011	Skewness	1.899
Mean of logged Data	2.482	SD of logged Data	0.883

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.19	95% Adjusted-CLT UCL (Chen-1995)	34.41
		95% Modified-t UCL (Johnson-1978)	32.1

Nonparametric Distribution Free UCLs

95% CLT UCL	28.59	95% Jackknife UCL	31.19
95% Standard Bootstrap UCL	27.44	95% Bootstrap-t UCL	45.83
95% Hall's Bootstrap UCL	69.81	95% Percentile Bootstrap UCL	28.03
95% BCA Bootstrap UCL	31.76		
90% Chebyshev(Mean, Sd) UCL	38.11	95% Chebyshev(Mean, Sd) UCL	47.66
97.5% Chebyshev(Mean, Sd) UCL	60.92	99% Chebyshev(Mean, Sd) UCL	86.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1	Mean	2.46
Maximum	8.6	Median	1.17
SD	3.021	Std. Error of Mean	1.233
Coefficient of Variation	1.228	Skewness	2.403
Mean of logged Data	0.514	SD of logged Data	0.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.945	95% Adjusted-CLT UCL (Chen-1995)	5.782
		95% Modified-t UCL (Johnson-1978)	5.147

Nonparametric Distribution Free UCLs

95% CLT UCL	4.489	95% Jackknife UCL	4.945
95% Standard Bootstrap UCL	4.324	95% Bootstrap-t UCL	52.75
95% Hall's Bootstrap UCL	24.89	95% Percentile Bootstrap UCL	4.838
95% BCA Bootstrap UCL	4.987		
90% Chebyshev(Mean, Sd) UCL	6.16	95% Chebyshev(Mean, Sd) UCL	7.836
97.5% Chebyshev(Mean, Sd) UCL	10.16	99% Chebyshev(Mean, Sd) UCL	14.73

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.836

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.49	Mean	13.23
Maximum	47.5	Median	5.645
SD	17.43	Std. Error of Mean	7.114
Coefficient of Variation	1.317	Skewness	2.091
Mean of logged Data	1.987	SD of logged Data	1.136

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	27.57	95% Adjusted-CLT UCL (Chen-1995)	31.42
		95% Modified-t UCL (Johnson-1978)	28.58

Nonparametric Distribution Free UCLs

95% CLT UCL	24.93	95% Jackknife UCL	27.57
95% Standard Bootstrap UCL	23.62	95% Bootstrap-t UCL	73.92
95% Hall's Bootstrap UCL	82.12	95% Percentile Bootstrap UCL	26.05
95% BCA Bootstrap UCL	29.13		
90% Chebyshev(Mean, Sd) UCL	34.58	95% Chebyshev(Mean, Sd) UCL	44.24
97.5% Chebyshev(Mean, Sd) UCL	57.66	99% Chebyshev(Mean, Sd) UCL	84.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.1	Mean	24.58
Maximum	80.1	Median	12.82
SD	28.64	Std. Error of Mean	11.69
Coefficient of Variation	1.165	Skewness	1.965
Mean of logged Data	2.724	SD of logged Data	1.032

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.14	95% Adjusted-CLT UCL (Chen-1995)	53.84
		95% Modified-t UCL (Johnson-1978)	49.71

Nonparametric Distribution Free UCLs

95% CLT UCL	43.81	95% Jackknife UCL	48.14
95% Standard Bootstrap UCL	41.77	95% Bootstrap-t UCL	97.61
95% Hall's Bootstrap UCL	127.5	95% Percentile Bootstrap UCL	43.98
95% BCA Bootstrap UCL	48.7		
90% Chebyshev(Mean, Sd) UCL	59.66	95% Chebyshev(Mean, Sd) UCL	75.55
97.5% Chebyshev(Mean, Sd) UCL	97.6	99% Chebyshev(Mean, Sd) UCL	140.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.2	Mean	18.57
Maximum	22.8	Median	17.85
SD	2.963	Std. Error of Mean	1.21
Coefficient of Variation	0.16	Skewness	0.509
Mean of logged Data	2.911	SD of logged Data	0.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21	95% Adjusted-CLT UCL (Chen-1995)	20.82
		95% Modified-t UCL (Johnson-1978)	21.05

Nonparametric Distribution Free UCLs

95% CLT UCL	20.56	95% Jackknife UCL	21
95% Standard Bootstrap UCL	20.4	95% Bootstrap-t UCL	22.02
95% Hall's Bootstrap UCL	22.15	95% Percentile Bootstrap UCL	20.37
95% BCA Bootstrap UCL	20.4		
90% Chebyshev(Mean, Sd) UCL	22.2	95% Chebyshev(Mean, Sd) UCL	23.84
97.5% Chebyshev(Mean, Sd) UCL	26.12	99% Chebyshev(Mean, Sd) UCL	30.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.7	Mean	55.57
Maximum	75.6	Median	53.2
SD	13.57	Std. Error of Mean	5.539
Coefficient of Variation	0.244	Skewness	0.494
Mean of logged Data	3.993	SD of logged Data	0.241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.73	95% Adjusted-CLT UCL (Chen-1995)	65.87
		95% Modified-t UCL (Johnson-1978)	66.91

Nonparametric Distribution Free UCLs

95% CLT UCL	64.68	95% Jackknife UCL	66.73
95% Standard Bootstrap UCL	63.71	95% Bootstrap-t UCL	72.11
95% Hall's Bootstrap UCL	62.28	95% Percentile Bootstrap UCL	63.87
95% BCA Bootstrap UCL	64.57		
90% Chebyshev(Mean, Sd) UCL	72.18	95% Chebyshev(Mean, Sd) UCL	79.71
97.5% Chebyshev(Mean, Sd) UCL	90.16	99% Chebyshev(Mean, Sd) UCL	110.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:08:28 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404666) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.841	Mean	1.834
Maximum	3.16	Median	1.785
SD	0.905	Std. Error of Mean	0.369
Coefficient of Variation	0.494	Skewness	0.39
Mean of logged Data	0.497	SD of logged Data	0.523

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.578	95% Adjusted-CLT UCL (Chen-1995)	2.504
		95% Modified-t UCL (Johnson-1978)	2.588

Nonparametric Distribution Free UCLs

95% CLT UCL	2.441	95% Jackknife UCL	2.578
95% Standard Bootstrap UCL	2.395	95% Bootstrap-t UCL	2.756
95% Hall's Bootstrap UCL	2.327	95% Percentile Bootstrap UCL	2.364
95% BCA Bootstrap UCL	2.43		
90% Chebyshev(Mean, Sd) UCL	2.942	95% Chebyshev(Mean, Sd) UCL	3.444
97.5% Chebyshev(Mean, Sd) UCL	4.141	99% Chebyshev(Mean, Sd) UCL	5.509

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.299	Mean	1.01
Maximum	2.07	Median	0.922
SD	0.654	Std. Error of Mean	0.267
Coefficient of Variation	0.647	Skewness	0.759
Mean of logged Data	-0.184	SD of logged Data	0.708

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.547	95% Adjusted-CLT UCL (Chen-1995)	1.537
		95% Modified-t UCL (Johnson-1978)	1.561

Nonparametric Distribution Free UCLs

95% CLT UCL	1.448	95% Jackknife UCL	1.547
95% Standard Bootstrap UCL	1.397	95% Bootstrap-t UCL	1.767
95% Hall's Bootstrap UCL	1.476	95% Percentile Bootstrap UCL	1.419
95% BCA Bootstrap UCL	1.431		
90% Chebyshev(Mean, Sd) UCL	1.81	95% Chebyshev(Mean, Sd) UCL	2.172
97.5% Chebyshev(Mean, Sd) UCL	2.676	99% Chebyshev(Mean, Sd) UCL	3.664

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	5.926
Maximum	20.6	Median	2.54
SD	7.331	Std. Error of Mean	2.993
Coefficient of Variation	1.237	Skewness	2.255
Mean of logged Data	1.342	SD of logged Data	0.917

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	11.96	95% Adjusted-CLT UCL (Chen-1995)	13.79
		95% Modified-t UCL (Johnson-1978)	12.42

Nonparametric Distribution Free UCLs

95% CLT UCL	10.85	95% Jackknife UCL	11.96
95% Standard Bootstrap UCL	10.34	95% Bootstrap-t UCL	66.59
95% Hall's Bootstrap UCL	59.7	95% Percentile Bootstrap UCL	11.48
95% BCA Bootstrap UCL	12.72		
90% Chebyshev(Mean, Sd) UCL	14.9	95% Chebyshev(Mean, Sd) UCL	18.97
97.5% Chebyshev(Mean, Sd) UCL	24.62	99% Chebyshev(Mean, Sd) UCL	35.7

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.13	Mean	31.82
Maximum	105	Median	15.9
SD	37.77	Std. Error of Mean	15.42
Coefficient of Variation	1.187	Skewness	1.966
Mean of logged Data	2.938	SD of logged Data	1.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.89	95% Adjusted-CLT UCL (Chen-1995)	70.41
		95% Modified-t UCL (Johnson-1978)	64.95

Nonparametric Distribution Free UCLs

95% CLT UCL	57.18	95% Jackknife UCL	62.89
95% Standard Bootstrap UCL	54.81	95% Bootstrap-t UCL	171.1
95% Hall's Bootstrap UCL	200.6	95% Percentile Bootstrap UCL	58.17
95% BCA Bootstrap UCL	64.3		
90% Chebyshev(Mean, Sd) UCL	78.08	95% Chebyshev(Mean, Sd) UCL	99.03
97.5% Chebyshev(Mean, Sd) UCL	128.1	99% Chebyshev(Mean, Sd) UCL	185.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.98	Mean	38.75
Maximum	121	Median	21
SD	43.41	Std. Error of Mean	17.72
Coefficient of Variation	1.12	Skewness	1.794
Mean of logged Data	3.156	SD of logged Data	1.116

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.46	95% Adjusted-CLT UCL (Chen-1995)	81.77
		95% Modified-t UCL (Johnson-1978)	76.62

Nonparametric Distribution Free UCLs

95% CLT UCL	67.89	95% Jackknife UCL	74.46
95% Standard Bootstrap UCL	65.48	95% Bootstrap-t UCL	173
95% Hall's Bootstrap UCL	219.6	95% Percentile Bootstrap UCL	68.33
95% BCA Bootstrap UCL	78.56		
90% Chebyshev(Mean, Sd) UCL	91.91	95% Chebyshev(Mean, Sd) UCL	116
97.5% Chebyshev(Mean, Sd) UCL	149.4	99% Chebyshev(Mean, Sd) UCL	215.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.275	Mean	52.61
Maximum	172	Median	31.7
SD	63.12	Std. Error of Mean	25.77
Coefficient of Variation	1.2	Skewness	1.758
Mean of logged Data	3.25	SD of logged Data	1.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	104.5	95% Adjusted-CLT UCL (Chen-1995)	114.7
		95% Modified-t UCL (Johnson-1978)	107.6

Nonparametric Distribution Free UCLs

95% CLT UCL	94.99	95% Jackknife UCL	104.5
95% Standard Bootstrap UCL	90.95	95% Bootstrap-t UCL	186.7
95% Hall's Bootstrap UCL	297.3	95% Percentile Bootstrap UCL	93.44
95% BCA Bootstrap UCL	108.1		
90% Chebyshev(Mean, Sd) UCL	129.9	95% Chebyshev(Mean, Sd) UCL	164.9
97.5% Chebyshev(Mean, Sd) UCL	213.5	99% Chebyshev(Mean, Sd) UCL	309

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.49	Mean	33.42
Maximum	103	Median	20.5
SD	36.53	Std. Error of Mean	14.91
Coefficient of Variation	1.093	Skewness	1.814
Mean of logged Data	3.029	SD of logged Data	1.099

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	63.47	95% Adjusted-CLT UCL (Chen-1995)	69.75
		95% Modified-t UCL (Johnson-1978)	65.31

Nonparametric Distribution Free UCLs

95% CLT UCL	57.95	95% Jackknife UCL	63.47

95% Standard Bootstrap UCL	55.5	95% Bootstrap-t UCL	124.9
95% Hall's Bootstrap UCL	174.7	95% Percentile Bootstrap UCL	58.12
95% BCA Bootstrap UCL	64.28		
90% Chebyshev(Mean, Sd) UCL	78.16	95% Chebyshev(Mean, Sd) UCL	98.43
97.5% Chebyshev(Mean, Sd) UCL	126.6	99% Chebyshev(Mean, Sd) UCL	181.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.84	Mean	25.46
Maximum	71.3	Median	17.6
SD	24.42	Std. Error of Mean	9.969
Coefficient of Variation	0.959	Skewness	1.674
Mean of logged Data	2.823	SD of logged Data	1.08

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	45.55	95% Adjusted-CLT UCL (Chen-1995)	49.13
		95% Modified-t UCL (Johnson-1978)	46.68

Nonparametric Distribution Free UCLs

95% CLT UCL	41.85	95% Jackknife UCL	45.55
95% Standard Bootstrap UCL	40.42	95% Bootstrap-t UCL	77.68
95% Hall's Bootstrap UCL	138	95% Percentile Bootstrap UCL	42.16
95% BCA Bootstrap UCL	46.7		
90% Chebyshev(Mean, Sd) UCL	55.36	95% Chebyshev(Mean, Sd) UCL	68.91
97.5% Chebyshev(Mean, Sd) UCL	87.72	99% Chebyshev(Mean, Sd) UCL	124.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.58	Mean	43.95
Maximum	133	Median	25.8
SD	46.99	Std. Error of Mean	19.18
Coefficient of Variation	1.069	Skewness	1.783
Mean of logged Data	3.333	SD of logged Data	1.052

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	82.6	95% Adjusted-CLT UCL (Chen-1995)	90.42
		95% Modified-t UCL (Johnson-1978)	84.93

Nonparametric Distribution Free UCLs

95% CLT UCL	75.5	95% Jackknife UCL	82.6
95% Standard Bootstrap UCL	72.89	95% Bootstrap-t UCL	172.5
95% Hall's Bootstrap UCL	224.6	95% Percentile Bootstrap UCL	77.73
95% BCA Bootstrap UCL	84.55		
90% Chebyshev(Mean, Sd) UCL	101.5	95% Chebyshev(Mean, Sd) UCL	127.6
97.5% Chebyshev(Mean, Sd) UCL	163.7	99% Chebyshev(Mean, Sd) UCL	234.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.035	Mean	8.383
Maximum	24.4	Median	4.93
SD	8.223	Std. Error of Mean	3.357
Coefficient of Variation	0.981	Skewness	2.012
Mean of logged Data	1.822	SD of logged Data	0.796

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.15	95% Adjusted-CLT UCL (Chen-1995)	16.85
		95% Modified-t UCL (Johnson-1978)	15.61

Nonparametric Distribution Free UCLs

95% CLT UCL	13.91	95% Jackknife UCL	15.15
95% Standard Bootstrap UCL	13.43	95% Bootstrap-t UCL	37.2
95% Hall's Bootstrap UCL	40.15	95% Percentile Bootstrap UCL	14.24
95% BCA Bootstrap UCL	16.14		
90% Chebyshev(Mean, Sd) UCL	18.45	95% Chebyshev(Mean, Sd) UCL	23.02
97.5% Chebyshev(Mean, Sd) UCL	29.35	99% Chebyshev(Mean, Sd) UCL	41.79

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.49	Mean	62.33
Maximum	218	Median	28.25
SD	79.63	Std. Error of Mean	32.51
Coefficient of Variation	1.278	Skewness	2.04
Mean of logged Data	3.536	SD of logged Data	1.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	127.8	95% Adjusted-CLT UCL (Chen-1995)	144.7
		95% Modified-t UCL (Johnson-1978)	132.3

Nonparametric Distribution Free UCLs

95% CLT UCL	115.8	95% Jackknife UCL	127.8
95% Standard Bootstrap UCL	111.9	95% Bootstrap-t UCL	377.5
95% Hall's Bootstrap UCL	333.6	95% Percentile Bootstrap UCL	122.5
95% BCA Bootstrap UCL	136.6		
90% Chebyshev(Mean, Sd) UCL	159.9	95% Chebyshev(Mean, Sd) UCL	204
97.5% Chebyshev(Mean, Sd) UCL	265.3	99% Chebyshev(Mean, Sd) UCL	385.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.215	Mean	1.42
Maximum	1.87	Median	1.345
SD	0.233	Std. Error of Mean	0.0952
Coefficient of Variation	0.164	Skewness	1.884
Mean of logged Data	0.341	SD of logged Data	0.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.612	95% Adjusted-CLT UCL (Chen-1995)	1.655
		95% Modified-t UCL (Johnson-1978)	1.624

Nonparametric Distribution Free UCLs

95% CLT UCL	1.577	95% Jackknife UCL	1.612
95% Standard Bootstrap UCL	1.562	95% Bootstrap-t UCL	1.903
95% Hall's Bootstrap UCL	2.333	95% Percentile Bootstrap UCL	1.58
95% BCA Bootstrap UCL	1.633		
90% Chebyshev(Mean, Sd) UCL	1.706	95% Chebyshev(Mean, Sd) UCL	1.835
97.5% Chebyshev(Mean, Sd) UCL	2.014	99% Chebyshev(Mean, Sd) UCL	2.367

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	4.76	Mean	33.66
Maximum	103	Median	20.7
SD	36.39	Std. Error of Mean	14.85
Coefficient of Variation	1.081	Skewness	1.819
Mean of logged Data	3.053	SD of logged Data	1.075

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.59	95% Adjusted-CLT UCL (Chen-1995)	69.88
		95% Modified-t UCL (Johnson-1978)	65.43

Nonparametric Distribution Free UCLs

95% CLT UCL	58.09	95% Jackknife UCL	63.59
95% Standard Bootstrap UCL	56.32	95% Bootstrap-t UCL	128.4
95% Hall's Bootstrap UCL	181.5	95% Percentile Bootstrap UCL	60.13
95% BCA Bootstrap UCL	63.38		
90% Chebyshev(Mean, Sd) UCL	78.22	95% Chebyshev(Mean, Sd) UCL	98.41
97.5% Chebyshev(Mean, Sd) UCL	126.4	99% Chebyshev(Mean, Sd) UCL	181.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	2.11	Mean	4.505
Maximum	8.75	Median	3.74
SD	2.674	Std. Error of Mean	1.092
Coefficient of Variation	0.594	Skewness	0.792
Mean of logged Data	1.358	SD of logged Data	0.595

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	6.705	95% Adjusted-CLT UCL (Chen-1995)	6.678
		95% Modified-t UCL (Johnson-1978)	6.763

Nonparametric Distribution Free UCLs

95% CLT UCL	6.3	95% Jackknife UCL	6.705
95% Standard Bootstrap UCL	6.135	95% Bootstrap-t UCL	8.6
95% Hall's Bootstrap UCL	6.283	95% Percentile Bootstrap UCL	6.175
95% BCA Bootstrap UCL	6.228		
90% Chebyshev(Mean, Sd) UCL	7.78	95% Chebyshev(Mean, Sd) UCL	9.263
97.5% Chebyshev(Mean, Sd) UCL	11.32	99% Chebyshev(Mean, Sd) UCL	15.37

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.54	Mean	30.1
Maximum	110	Median	12.98
SD	40.47	Std. Error of Mean	16.52
Coefficient of Variation	1.344	Skewness	2.124
Mean of logged Data	2.765	SD of logged Data	1.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.39	95% Adjusted-CLT UCL (Chen-1995)	72.58
		95% Modified-t UCL (Johnson-1978)	65.78

Nonparametric Distribution Free UCLs

95% CLT UCL	57.27	95% Jackknife UCL	63.39
95% Standard Bootstrap UCL	54.64	95% Bootstrap-t UCL	194.7
95% Hall's Bootstrap UCL	161.2	95% Percentile Bootstrap UCL	59.27
95% BCA Bootstrap UCL	64.76		
90% Chebyshev(Mean, Sd) UCL	79.66	95% Chebyshev(Mean, Sd) UCL	102.1
97.5% Chebyshev(Mean, Sd) UCL	133.3	99% Chebyshev(Mean, Sd) UCL	194.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.8	Mean	57.53
Maximum	190	Median	28.2
SD	69.06	Std. Error of Mean	28.19
Coefficient of Variation	1.2	Skewness	1.886
Mean of logged Data	3.487	SD of logged Data	1.176

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	114.3	95% Adjusted-CLT UCL (Chen-1995)	127.1
		95% Modified-t UCL (Johnson-1978)	118

Nonparametric Distribution Free UCLs

95% CLT UCL	103.9	95% Jackknife UCL	114.3
95% Standard Bootstrap UCL	100.8	95% Bootstrap-t UCL	286.3
95% Hall's Bootstrap UCL	323.5	95% Percentile Bootstrap UCL	103.3
95% BCA Bootstrap UCL	116.7		
90% Chebyshev(Mean, Sd) UCL	142.1	95% Chebyshev(Mean, Sd) UCL	180.4
97.5% Chebyshev(Mean, Sd) UCL	233.6	99% Chebyshev(Mean, Sd) UCL	338.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	16.87
Maximum	30	Median	12.65
SD	8.119	Std. Error of Mean	3.314
Coefficient of Variation	0.481	Skewness	1.132
Mean of logged Data	2.739	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.55	95% Adjusted-CLT UCL (Chen-1995)	23.95
		95% Modified-t UCL (Johnson-1978)	23.8

Nonparametric Distribution Free UCLs

95% CLT UCL	22.32	95% Jackknife UCL	23.55
95% Standard Bootstrap UCL	21.84	95% Bootstrap-t UCL	53.03
95% Hall's Bootstrap UCL	74.66	95% Percentile Bootstrap UCL	22.15
95% BCA Bootstrap UCL	23.17		
90% Chebyshev(Mean, Sd) UCL	26.81	95% Chebyshev(Mean, Sd) UCL	31.31
97.5% Chebyshev(Mean, Sd) UCL	37.56	99% Chebyshev(Mean, Sd) UCL	49.84

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	13.4	Mean	16.47
Maximum	19.1	Median	16.15
SD	2.277	Std. Error of Mean	0.93
Coefficient of Variation	0.138	Skewness	0.0957
Mean of logged Data	2.793	SD of logged Data	0.139

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.34	95% Adjusted-CLT UCL (Chen-1995)	18.03
		95% Modified-t UCL (Johnson-1978)	18.35

Nonparametric Distribution Free UCLs

95% CLT UCL	18	95% Jackknife UCL	18.34

95% Standard Bootstrap UCL	17.88	95% Bootstrap-t UCL	18.89
95% Hall's Bootstrap UCL	19.75	95% Percentile Bootstrap UCL	17.92
95% BCA Bootstrap UCL	17.7		
90% Chebyshev(Mean, Sd) UCL	19.26	95% Chebyshev(Mean, Sd) UCL	20.52
97.5% Chebyshev(Mean, Sd) UCL	22.27	99% Chebyshev(Mean, Sd) UCL	25.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.3	Mean	67.2
Maximum	97	Median	64.4
SD	25.19	Std. Error of Mean	10.28
Coefficient of Variation	0.375	Skewness	0.132
Mean of logged Data	4.146	SD of logged Data	0.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	87.92	95% Adjusted-CLT UCL (Chen-1995)	84.71
		95% Modified-t UCL (Johnson-1978)	88.02

Nonparametric Distribution Free UCLs

95% CLT UCL	84.12	95% Jackknife UCL	87.92
95% Standard Bootstrap UCL	82.37	95% Bootstrap-t UCL	93.39
95% Hall's Bootstrap UCL	76.17	95% Percentile Bootstrap UCL	83.18
95% BCA Bootstrap UCL	82.05		
90% Chebyshev(Mean, Sd) UCL	98.05	95% Chebyshev(Mean, Sd) UCL	112
97.5% Chebyshev(Mean, Sd) UCL	131.4	99% Chebyshev(Mean, Sd) UCL	169.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:39:45 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404688) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.935	Mean	1.549
Maximum	2	Median	1.66
SD	0.481	Std. Error of Mean	0.196
Coefficient of Variation	0.31	Skewness	-0.4
Mean of logged Data	0.393	SD of logged Data	0.338

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.945	95% Adjusted-CLT UCL (Chen-1995)	1.838
		95% Modified-t UCL (Johnson-1978)	1.939

Nonparametric Distribution Free UCLs

95% CLT UCL	1.872	95% Jackknife UCL	1.945
95% Standard Bootstrap UCL	1.836	95% Bootstrap-t UCL	1.902
95% Hall's Bootstrap UCL	1.754	95% Percentile Bootstrap UCL	1.84
95% BCA Bootstrap UCL	1.818		
90% Chebyshev(Mean, Sd) UCL	2.138	95% Chebyshev(Mean, Sd) UCL	2.405
97.5% Chebyshev(Mean, Sd) UCL	2.775	99% Chebyshev(Mean, Sd) UCL	3.502

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.458	Mean	2.762
Maximum	6.42	Median	2.625
SD	2.199	Std. Error of Mean	0.898
Coefficient of Variation	0.796	Skewness	0.81
Mean of logged Data	0.657	SD of logged Data	1.024

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.57	95% Adjusted-CLT UCL (Chen-1995)	4.555
		95% Modified-t UCL (Johnson-1978)	4.62

Nonparametric Distribution Free UCLs

95% CLT UCL	4.238	95% Jackknife UCL	4.57
95% Standard Bootstrap UCL	4.092	95% Bootstrap-t UCL	5.18
95% Hall's Bootstrap UCL	5.288	95% Percentile Bootstrap UCL	4.202
95% BCA Bootstrap UCL	4.31		
90% Chebyshev(Mean, Sd) UCL	5.454	95% Chebyshev(Mean, Sd) UCL	6.674
97.5% Chebyshev(Mean, Sd) UCL	8.367	99% Chebyshev(Mean, Sd) UCL	11.69

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.64	Mean	16.03
Maximum	58.8	Median	10.03
SD	21.51	Std. Error of Mean	8.783
Coefficient of Variation	1.342	Skewness	2.169
Mean of logged Data	2.073	SD of logged Data	1.34

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.73	95% Adjusted-CLT UCL (Chen-1995)	38.78
		95% Modified-t UCL (Johnson-1978)	35.02

Nonparametric Distribution Free UCLs

95% CLT UCL	30.48	95% Jackknife UCL	33.73
95% Standard Bootstrap UCL	29.59	95% Bootstrap-t UCL	66.08
95% Hall's Bootstrap UCL	102.3	95% Percentile Bootstrap UCL	32.29
95% BCA Bootstrap UCL	35.23		
90% Chebyshev(Mean, Sd) UCL	42.38	95% Chebyshev(Mean, Sd) UCL	54.31
97.5% Chebyshev(Mean, Sd) UCL	70.88	99% Chebyshev(Mean, Sd) UCL	103.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.7	Mean	108
Maximum	279	Median	97.4
SD	96.77	Std. Error of Mean	39.5
Coefficient of Variation	0.896	Skewness	1.174
Mean of logged Data	4.238	SD of logged Data	1.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	187.6	95% Adjusted-CLT UCL (Chen-1995)	193.2
		95% Modified-t UCL (Johnson-1978)	190.7

Nonparametric Distribution Free UCLs

95% CLT UCL	173	95% Jackknife UCL	187.6
95% Standard Bootstrap UCL	168.5	95% Bootstrap-t UCL	217.1
95% Hall's Bootstrap UCL	532.7	95% Percentile Bootstrap UCL	174.4
95% BCA Bootstrap UCL	188.3		
90% Chebyshev(Mean, Sd) UCL	226.5	95% Chebyshev(Mean, Sd) UCL	280.2
97.5% Chebyshev(Mean, Sd) UCL	354.7	99% Chebyshev(Mean, Sd) UCL	501.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.8	Mean	124.8
Maximum	278	Median	126
SD	96.45	Std. Error of Mean	39.37
Coefficient of Variation	0.773	Skewness	0.537
Mean of logged Data	4.452	SD of logged Data	1.066

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	204.1	95% Adjusted-CLT UCL (Chen-1995)	198.7
		95% Modified-t UCL (Johnson-1978)	205.5

Nonparametric Distribution Free UCLs

95% CLT UCL	189.5	95% Jackknife UCL	204.1
95% Standard Bootstrap UCL	182.3	95% Bootstrap-t UCL	215.8
95% Hall's Bootstrap UCL	212.2	95% Percentile Bootstrap UCL	182.8
95% BCA Bootstrap UCL	192		
90% Chebyshev(Mean, Sd) UCL	242.9	95% Chebyshev(Mean, Sd) UCL	296.4
97.5% Chebyshev(Mean, Sd) UCL	370.6	99% Chebyshev(Mean, Sd) UCL	516.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26.3	Mean	167
Maximum	388	Median	166.5

SD	133.8	Std. Error of Mean	54.62
Coefficient of Variation	0.801	Skewness	0.727
Mean of logged Data	4.73	SD of logged Data	1.082

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	277.1	95% Adjusted-CLT UCL (Chen-1995)	274.2
		95% Modified-t UCL (Johnson-1978)	279.8

Nonparametric Distribution Free UCLs

95% CLT UCL	256.9	95% Jackknife UCL	277.1
95% Standard Bootstrap UCL	247.1	95% Bootstrap-t UCL	296
95% Hall's Bootstrap UCL	312	95% Percentile Bootstrap UCL	253.9
95% BCA Bootstrap UCL	264.7		
90% Chebyshev(Mean, Sd) UCL	330.9	95% Chebyshev(Mean, Sd) UCL	405.1
97.5% Chebyshev(Mean, Sd) UCL	508.1	99% Chebyshev(Mean, Sd) UCL	710.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.9	Mean	87.58
Maximum	185	Median	88.8
SD	64.69	Std. Error of Mean	26.41
Coefficient of Variation	0.739	Skewness	0.343
Mean of logged Data	4.131	SD of logged Data	1.011

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	140.8	95% Adjusted-CLT UCL (Chen-1995)	135
		95% Modified-t UCL (Johnson-1978)	141.4

Nonparametric Distribution Free UCLs

95% CLT UCL	131	95% Jackknife UCL	140.8
95% Standard Bootstrap UCL	127.7	95% Bootstrap-t UCL	148.8
95% Hall's Bootstrap UCL	139.1	95% Percentile Bootstrap UCL	127.8
95% BCA Bootstrap UCL	128.8		
90% Chebyshev(Mean, Sd) UCL	166.8	95% Chebyshev(Mean, Sd) UCL	202.7
97.5% Chebyshev(Mean, Sd) UCL	252.5	99% Chebyshev(Mean, Sd) UCL	350.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.5	Mean	62.05
Maximum	137	Median	63.35
SD	47.44	Std. Error of Mean	19.37
Coefficient of Variation	0.765	Skewness	0.499
Mean of logged Data	3.761	SD of logged Data	1.054

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	101.1	95% Adjusted-CLT UCL (Chen-1995)	98.13
		95% Modified-t UCL (Johnson-1978)	101.7

Nonparametric Distribution Free UCLs

95% CLT UCL	93.91	95% Jackknife UCL	101.1
95% Standard Bootstrap UCL	92.09	95% Bootstrap-t UCL	105
95% Hall's Bootstrap UCL	103.5	95% Percentile Bootstrap UCL	94.42
95% BCA Bootstrap UCL	93.32		
90% Chebyshev(Mean, Sd) UCL	120.2	95% Chebyshev(Mean, Sd) UCL	146.5
97.5% Chebyshev(Mean, Sd) UCL	183	99% Chebyshev(Mean, Sd) UCL	254.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20	Mean	133.9
Maximum	288	Median	141
SD	100.7	Std. Error of Mean	41.12
Coefficient of Variation	0.752	Skewness	0.336
Mean of logged Data	4.52	SD of logged Data	1.084

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	216.8	95% Adjusted-CLT UCL (Chen-1995)	207.6
		95% Modified-t UCL (Johnson-1978)	217.7

Nonparametric Distribution Free UCLs

95% CLT UCL	201.5	95% Jackknife UCL	216.8
95% Standard Bootstrap UCL	195.8	95% Bootstrap-t UCL	219
95% Hall's Bootstrap UCL	217.5	95% Percentile Bootstrap UCL	198.8
95% BCA Bootstrap UCL	201.8		
90% Chebyshev(Mean, Sd) UCL	257.3	95% Chebyshev(Mean, Sd) UCL	313.1
97.5% Chebyshev(Mean, Sd) UCL	390.7	99% Chebyshev(Mean, Sd) UCL	543

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.98	Mean	22.69
Maximum	47.4	Median	23.05
SD	16.68	Std. Error of Mean	6.809
Coefficient of Variation	0.735	Skewness	0.29
Mean of logged Data	2.779	SD of logged Data	1.017

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.41	95% Adjusted-CLT UCL (Chen-1995)	34.75
		95% Modified-t UCL (Johnson-1978)	36.55

Nonparametric Distribution Free UCLs

95% CLT UCL	33.89	95% Jackknife UCL	36.41
95% Standard Bootstrap UCL	33	95% Bootstrap-t UCL	37.13
95% Hall's Bootstrap UCL	36.22	95% Percentile Bootstrap UCL	33.36
95% BCA Bootstrap UCL	34.18		
90% Chebyshev(Mean, Sd) UCL	43.12	95% Chebyshev(Mean, Sd) UCL	52.37
97.5% Chebyshev(Mean, Sd) UCL	65.21	99% Chebyshev(Mean, Sd) UCL	90.44

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.2	Mean	211.7
Maximum	633	Median	171
SD	222.6	Std. Error of Mean	90.88
Coefficient of Variation	1.051	Skewness	1.701
Mean of logged Data	4.825	SD of logged Data	1.224

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	394.8	95% Adjusted-CLT UCL (Chen-1995)	428.6
		95% Modified-t UCL (Johnson-1978)	405.4

Nonparametric Distribution Free UCLs

95% CLT UCL	361.2	95% Jackknife UCL	394.8
95% Standard Bootstrap UCL	350.7	95% Bootstrap-t UCL	526.4
95% Hall's Bootstrap UCL	1052	95% Percentile Bootstrap UCL	354.1

95% BCA Bootstrap UCL	411.2		
90% Chebyshev(Mean, Sd) UCL	484.4	95% Chebyshev(Mean, Sd) UCL	607.9
97.5% Chebyshev(Mean, Sd) UCL	779.3	99% Chebyshev(Mean, Sd) UCL	1116

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.978	Mean	1.886
Maximum	5.15	Median	1.303
SD	1.604	Std. Error of Mean	0.655
Coefficient of Variation	0.851	Skewness	2.413
Mean of logged Data	0.442	SD of logged Data	0.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.205	95% Adjusted-CLT UCL (Chen-1995)	3.652
		95% Modified-t UCL (Johnson-1978)	3.313

Nonparametric Distribution Free UCLs

95% CLT UCL	2.963	95% Jackknife UCL	3.205
95% Standard Bootstrap UCL	2.859	95% Bootstrap-t UCL	57.05
95% Hall's Bootstrap UCL	35.17	95% Percentile Bootstrap UCL	3.166
95% BCA Bootstrap UCL	3.223		
90% Chebyshev(Mean, Sd) UCL	3.85	95% Chebyshev(Mean, Sd) UCL	4.741
97.5% Chebyshev(Mean, Sd) UCL	5.976	99% Chebyshev(Mean, Sd) UCL	8.403

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.741

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.4	Mean	95.3
Maximum	204	Median	96.9
SD	71.19	Std. Error of Mean	29.06
Coefficient of Variation	0.747	Skewness	0.384
Mean of logged Data	4.206	SD of logged Data	1.029

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	153.9	95% Adjusted-CLT UCL (Chen-1995)	148
		95% Modified-t UCL (Johnson-1978)	154.6

Nonparametric Distribution Free UCLs

95% CLT UCL	143.1	95% Jackknife UCL	153.9
95% Standard Bootstrap UCL	138.6	95% Bootstrap-t UCL	162.2
95% Hall's Bootstrap UCL	151.7	95% Percentile Bootstrap UCL	137.4
95% BCA Bootstrap UCL	140.8		
90% Chebyshev(Mean, Sd) UCL	182.5	95% Chebyshev(Mean, Sd) UCL	222
97.5% Chebyshev(Mean, Sd) UCL	276.8	99% Chebyshev(Mean, Sd) UCL	384.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.84	Mean	3.3
Maximum	5.16	Median	3.35
SD	1.224	Std. Error of Mean	0.5
Coefficient of Variation	0.371	Skewness	0.354
Mean of logged Data	1.134	SD of logged Data	0.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.307	95% Adjusted-CLT UCL (Chen-1995)	4.199
		95% Modified-t UCL (Johnson-1978)	4.319

Nonparametric Distribution Free UCLs

95% CLT UCL	4.122	95% Jackknife UCL	4.307
95% Standard Bootstrap UCL	4.04	95% Bootstrap-t UCL	4.473
95% Hall's Bootstrap UCL	4.185	95% Percentile Bootstrap UCL	4.037
95% BCA Bootstrap UCL	4.058		
90% Chebyshev(Mean, Sd) UCL	4.799	95% Chebyshev(Mean, Sd) UCL	5.478
97.5% Chebyshev(Mean, Sd) UCL	6.42	99% Chebyshev(Mean, Sd) UCL	8.271

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.1	Mean	87.45
Maximum	270	Median	66.2
SD	95.31	Std. Error of Mean	38.91
Coefficient of Variation	1.09	Skewness	1.815
Mean of logged Data	3.946	SD of logged Data	1.189

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	165.9	95% Adjusted-CLT UCL (Chen-1995)	182.3
		95% Modified-t UCL (Johnson-1978)	170.7

Nonparametric Distribution Free UCLs

95% CLT UCL	151.4	95% Jackknife UCL	165.9
95% Standard Bootstrap UCL	145.7	95% Bootstrap-t UCL	236.8
95% Hall's Bootstrap UCL	446.1	95% Percentile Bootstrap UCL	157.9
95% BCA Bootstrap UCL	165.2		
90% Chebyshev(Mean, Sd) UCL	204.2	95% Chebyshev(Mean, Sd) UCL	257.1
97.5% Chebyshev(Mean, Sd) UCL	330.4	99% Chebyshev(Mean, Sd) UCL	474.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	23.3	Mean	192.4
Maximum	533	Median	170
SD	185.3	Std. Error of Mean	75.67
Coefficient of Variation	0.963	Skewness	1.447
Mean of logged Data	4.773	SD of logged Data	1.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	344.9	95% Adjusted-CLT UCL (Chen-1995)	364.6
		95% Modified-t UCL (Johnson-1978)	352.3

Nonparametric Distribution Free UCLs

95% CLT UCL	316.9	95% Jackknife UCL	344.9
95% Standard Bootstrap UCL	302.1	95% Bootstrap-t UCL	423.1
95% Hall's Bootstrap UCL	924.6	95% Percentile Bootstrap UCL	313.4
95% BCA Bootstrap UCL	348		
90% Chebyshev(Mean, Sd) UCL	419.4	95% Chebyshev(Mean, Sd) UCL	522.2
97.5% Chebyshev(Mean, Sd) UCL	664.9	99% Chebyshev(Mean, Sd) UCL	945.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.55	Mean	12.85
Maximum	19.8	Median	12.58

SD	6.791	Std. Error of Mean	2.772
Coefficient of Variation	0.528	Skewness	0.0192
Mean of logged Data	2.421	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.44	95% Adjusted-CLT UCL (Chen-1995)	17.43
		95% Modified-t UCL (Johnson-1978)	18.44

Nonparametric Distribution Free UCLs

95% CLT UCL	17.41	95% Jackknife UCL	18.44
95% Standard Bootstrap UCL	17.09	95% Bootstrap-t UCL	18.45
95% Hall's Bootstrap UCL	15.08	95% Percentile Bootstrap UCL	17.08
95% BCA Bootstrap UCL	16.99		
90% Chebyshev(Mean, Sd) UCL	21.17	95% Chebyshev(Mean, Sd) UCL	24.93
97.5% Chebyshev(Mean, Sd) UCL	30.16	99% Chebyshev(Mean, Sd) UCL	40.43

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.1	Mean	45.63
Maximum	53	Median	44.95
SD	4.644	Std. Error of Mean	1.896
Coefficient of Variation	0.102	Skewness	0.368
Mean of logged Data	3.816	SD of logged Data	0.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.45	95% Adjusted-CLT UCL (Chen-1995)	49.06
		95% Modified-t UCL (Johnson-1978)	49.5

Nonparametric Distribution Free UCLs

95% CLT UCL	48.75	95% Jackknife UCL	49.45
95% Standard Bootstrap UCL	48.49	95% Bootstrap-t UCL	50.11
95% Hall's Bootstrap UCL	51.76	95% Percentile Bootstrap UCL	48.6
95% BCA Bootstrap UCL	48.6		
90% Chebyshev(Mean, Sd) UCL	51.32	95% Chebyshev(Mean, Sd) UCL	53.9
97.5% Chebyshev(Mean, Sd) UCL	57.47	99% Chebyshev(Mean, Sd) UCL	64.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:43:30 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404727) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.07	Mean	7.957
Maximum	8.95	Median	8.85
SD	1.635	Std. Error of Mean	0.944
Coefficient of Variation	0.205	Skewness	-1.725
Mean of logged Data	2.058	SD of logged Data	0.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.71	95% Adjusted-CLT UCL (Chen-1995)	8.505
		95% Modified-t UCL (Johnson-1978)	10.56

Nonparametric Distribution Free UCLs

95% CLT UCL	9.509	95% Jackknife UCL	10.71
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.79	95% Chebyshev(Mean, Sd) UCL	12.07
97.5% Chebyshev(Mean, Sd) UCL	13.85	99% Chebyshev(Mean, Sd) UCL	17.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	22.1	Mean	27.37
Maximum	30.3	Median	29.7
SD	4.571	Std. Error of Mean	2.639
Coefficient of Variation	0.167	Skewness	-1.699
Mean of logged Data	3.299	SD of logged Data	0.177

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.07	95% Adjusted-CLT UCL (Chen-1995)	28.94
		95% Modified-t UCL (Johnson-1978)	34.64

Nonparametric Distribution Free UCLs

95% CLT UCL	31.71	95% Jackknife UCL	35.07
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	35.28	95% Chebyshev(Mean, Sd) UCL	38.87
97.5% Chebyshev(Mean, Sd) UCL	43.85	99% Chebyshev(Mean, Sd) UCL	53.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	27.4	Mean	36.2
Maximum	42.5	Median	38.7
SD	7.854	Std. Error of Mean	4.535
Coefficient of Variation	0.217	Skewness	-1.287
Mean of logged Data	3.572	SD of logged Data	0.231

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.44	95% Adjusted-CLT UCL (Chen-1995)	40.06
		95% Modified-t UCL (Johnson-1978)	48.88

Nonparametric Distribution Free UCLs

95% CLT UCL	43.66	95% Jackknife UCL	49.44
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	49.8	95% Chebyshev(Mean, Sd) UCL	55.97
97.5% Chebyshev(Mean, Sd) UCL	64.52	99% Chebyshev(Mean, Sd) UCL	81.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	44.1	Mean	55
Maximum	60.5	Median	60.4
SD	9.44	Std. Error of Mean	5.45
Coefficient of Variation	0.172	Skewness	-1.732
Mean of logged Data	3.997	SD of logged Data	0.182

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.**

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.91	95% Adjusted-CLT UCL (Chen-1995)	58.14
		95% Modified-t UCL (Johnson-1978)	70.01

Nonparametric Distribution Free UCLs

95% CLT UCL	63.96	95% Jackknife UCL	70.91
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A

95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	71.35	95% Chebyshev(Mean, Sd) UCL	78.76
97.5% Chebyshev(Mean, Sd) UCL	89.04	99% Chebyshev(Mean, Sd) UCL	109.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	28.1	Mean	37.13
Maximum	43.3	Median	40
SD	7.995	Std. Error of Mean	4.616
Coefficient of Variation	0.215	Skewness	-1.406
Mean of logged Data	3.598	SD of logged Data	0.23

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	50.61	95% Adjusted-CLT UCL (Chen-1995)	40.72
		95% Modified-t UCL (Johnson-1978)	49.99

Nonparametric Distribution Free UCLs

95% CLT UCL	44.73	95% Jackknife UCL	50.61
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	50.98	95% Chebyshev(Mean, Sd) UCL	57.25
97.5% Chebyshev(Mean, Sd) UCL	65.96	99% Chebyshev(Mean, Sd) UCL	83.06

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	18	Mean	22.23
Maximum	24.8	Median	23.9
SD	3.694	Std. Error of Mean	2.133
Coefficient of Variation	0.166	Skewness	-1.617
Mean of logged Data	3.092	SD of logged Data	0.175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.46	95% Adjusted-CLT UCL (Chen-1995)	23.61
		95% Modified-t UCL (Johnson-1978)	28.13

Nonparametric Distribution Free UCLs

95% CLT UCL	25.74	95% Jackknife UCL	28.46
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	28.63	95% Chebyshev(Mean, Sd) UCL	31.53
97.5% Chebyshev(Mean, Sd) UCL	35.55	99% Chebyshev(Mean, Sd) UCL	43.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	35.7	Mean	43.1
Maximum	47.1	Median	46.5

SD	6.416	Std. Error of Mean	3.704
Coefficient of Variation	0.149	Skewness	-1.715
Mean of logged Data	3.756	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	53.92	95% Adjusted-CLT UCL (Chen-1995)	45.27
		95% Modified-t UCL (Johnson-1978)	53.3

Nonparametric Distribution Free UCLs

95% CLT UCL	49.19	95% Jackknife UCL	53.92
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	54.21	95% Chebyshev(Mean, Sd) UCL	59.25
97.5% Chebyshev(Mean, Sd) UCL	66.23	99% Chebyshev(Mean, Sd) UCL	79.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	39.2	Mean	46.7
Maximum	52.8	Median	48.1
SD	6.907	Std. Error of Mean	3.988
Coefficient of Variation	0.148	Skewness	-0.875
Mean of logged Data	3.836	SD of logged Data	0.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.34	95% Adjusted-CLT UCL (Chen-1995)	51.11
		95% Modified-t UCL (Johnson-1978)	58.01

Nonparametric Distribution Free UCLs

95% CLT UCL	53.26	95% Jackknife UCL	58.34
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	58.66	95% Chebyshev(Mean, Sd) UCL	64.08
97.5% Chebyshev(Mean, Sd) UCL	71.6	99% Chebyshev(Mean, Sd) UCL	86.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	26.5	Mean	35.83
Maximum	41.8	Median	39.2
SD	8.187	Std. Error of Mean	4.727
Coefficient of Variation	0.228	Skewness	-1.538
Mean of logged Data	3.56	SD of logged Data	0.247

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.**

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.64	95% Adjusted-CLT UCL (Chen-1995)	39.12
		95% Modified-t UCL (Johnson-1978)	48.94

Nonparametric Distribution Free UCLs

95% CLT UCL	43.61	95% Jackknife UCL	49.64
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	50.01	95% Chebyshev(Mean, Sd) UCL	56.44
97.5% Chebyshev(Mean, Sd) UCL	65.35	99% Chebyshev(Mean, Sd) UCL	82.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	21.1	Mean	27.4
Maximum	31.55	Median	29.55
SD	5.547	Std. Error of Mean	3.202
Coefficient of Variation	0.202	Skewness	-1.482
Mean of logged Data	3.296	SD of logged Data	0.216

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.75	95% Adjusted-CLT UCL (Chen-1995)	29.74
		95% Modified-t UCL (Johnson-1978)	36.29

Nonparametric Distribution Free UCLs

95% CLT UCL	32.67	95% Jackknife UCL	36.75
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	37.01	95% Chebyshev(Mean, Sd) UCL	41.36
97.5% Chebyshev(Mean, Sd) UCL	47.4	99% Chebyshev(Mean, Sd) UCL	59.26

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	42.5	Mean	47.93
Maximum	52.1	Median	49.2
SD	4.924	Std. Error of Mean	2.843
Coefficient of Variation	0.103	Skewness	-1.081
Mean of logged Data	3.866	SD of logged Data	0.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	56.23	95% Adjusted-CLT UCL (Chen-1995)	50.71
		95% Modified-t UCL (Johnson-1978)	55.94

Nonparametric Distribution Free UCLs

95% CLT UCL	52.61	95% Jackknife UCL	56.23
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	56.46	95% Chebyshev(Mean, Sd) UCL	60.32
97.5% Chebyshev(Mean, Sd) UCL	65.69	99% Chebyshev(Mean, Sd) UCL	76.22

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	20.2	Mean	22.03
Maximum	25.2	Median	20.7
SD	2.754	Std. Error of Mean	1.59
Coefficient of Variation	0.125	Skewness	1.668
Mean of logged Data	3.088	SD of logged Data	0.121

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.68	95% Adjusted-CLT UCL (Chen-1995)	26.28
		95% Modified-t UCL (Johnson-1978)	26.93

Nonparametric Distribution Free UCLs

95% CLT UCL	24.65	95% Jackknife UCL	26.68
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	26.8	95% Chebyshev(Mean, Sd) UCL	28.96
97.5% Chebyshev(Mean, Sd) UCL	31.96	99% Chebyshev(Mean, Sd) UCL	37.85

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.3	Mean	12.17
Maximum	12.7	Median	12.5
SD	0.757	Std. Error of Mean	0.437
Coefficient of Variation	0.0622	Skewness	-1.597
Mean of logged Data	2.497	SD of logged Data	0.0634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.44	95% Adjusted-CLT UCL (Chen-1995)	12.46
		95% Modified-t UCL (Johnson-1978)	13.38

Nonparametric Distribution Free UCLs

95% CLT UCL	12.89	95% Jackknife UCL	13.44
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A

95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.48	95% Chebyshev(Mean, Sd) UCL	14.07
97.5% Chebyshev(Mean, Sd) UCL	14.9	99% Chebyshev(Mean, Sd) UCL	16.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	75.5	Mean	78.23
Maximum	82	Median	77.2
SD	3.371	Std. Error of Mean	1.946
Coefficient of Variation	0.0431	Skewness	1.25
Mean of logged Data	4.359	SD of logged Data	0.0427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	83.92	95% Adjusted-CLT UCL (Chen-1995)	82.94
		95% Modified-t UCL (Johnson-1978)	84.15

Nonparametric Distribution Free UCLs

95% CLT UCL	81.43	95% Jackknife UCL	83.92
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	84.07	95% Chebyshev(Mean, Sd) UCL	86.72
97.5% Chebyshev(Mean, Sd) UCL	90.39	99% Chebyshev(Mean, Sd) UCL	97.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:11:12 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404730) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.1	Mean	1.32
Maximum	1.7	Median	1.16
SD	0.33	Std. Error of Mean	0.191
Coefficient of Variation	0.25	Skewness	1.668
Mean of logged Data	0.258	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.877	95% Adjusted-CLT UCL (Chen-1995)	1.83
		95% Modified-t UCL (Johnson-1978)	1.908

Nonparametric Distribution Free UCLs

95% CLT UCL	1.634	95% Jackknife UCL	1.877
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.892	95% Chebyshev(Mean, Sd) UCL	2.152
97.5% Chebyshev(Mean, Sd) UCL	2.511	99% Chebyshev(Mean, Sd) UCL	3.218

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	0.718	Mean	0.834
Maximum	0.915	Median	0.869
SD	0.103	Std. Error of Mean	0.0595
Coefficient of Variation	0.124	Skewness	-1.352
Mean of logged Data	-0.187	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.008	95% Adjusted-CLT UCL (Chen-1995)	0.882
		95% Modified-t UCL (Johnson-1978)	1

Nonparametric Distribution Free UCLs

95% CLT UCL	0.932	95% Jackknife UCL	1.008
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.013	95% Chebyshev(Mean, Sd) UCL	1.093
97.5% Chebyshev(Mean, Sd) UCL	1.206	99% Chebyshev(Mean, Sd) UCL	1.426

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.01	Mean	2.263
Maximum	2.51	Median	2.27
SD	0.25	Std. Error of Mean	0.144
Coefficient of Variation	0.11	Skewness	-0.12
Mean of logged Data	0.813	SD of logged Data	0.111

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.685	95% Adjusted-CLT UCL (Chen-1995)	2.49
		95% Modified-t UCL (Johnson-1978)	2.683

Nonparametric Distribution Free UCLs

95% CLT UCL	2.501	95% Jackknife UCL	2.685
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.696	95% Chebyshev(Mean, Sd) UCL	2.893
97.5% Chebyshev(Mean, Sd) UCL	3.165	99% Chebyshev(Mean, Sd) UCL	3.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15	Mean	17.17
Maximum	19.2	Median	17.3
SD	2.103	Std. Error of Mean	1.214
Coefficient of Variation	0.123	Skewness	-0.284
Mean of logged Data	2.838	SD of logged Data	0.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.71	95% Adjusted-CLT UCL (Chen-1995)	18.95
		95% Modified-t UCL (Johnson-1978)	20.68

Nonparametric Distribution Free UCLs

95% CLT UCL	19.16	95% Jackknife UCL	20.71
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	20.81	95% Chebyshev(Mean, Sd) UCL	22.46

97.5% Chebyshev(Mean, Sd) UCL	24.75	99% Chebyshev(Mean, Sd) UCL	29.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	20.3	Mean	23.5
Maximum	27.1	Median	23.1
SD	3.418	Std. Error of Mean	1.973
Coefficient of Variation	0.145	Skewness	0.519
Mean of logged Data	3.15	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.26	95% Adjusted-CLT UCL (Chen-1995)	27.38
		95% Modified-t UCL (Johnson-1978)	29.36

Nonparametric Distribution Free UCLs

95% CLT UCL	26.75	95% Jackknife UCL	29.26
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	29.42	95% Chebyshev(Mean, Sd) UCL	32.1
97.5% Chebyshev(Mean, Sd) UCL	35.82	99% Chebyshev(Mean, Sd) UCL	43.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	27	Mean	31.97
Maximum	37.7	Median	31.2
SD	5.391	Std. Error of Mean	3.113
Coefficient of Variation	0.169	Skewness	0.627
Mean of logged Data	3.455	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.06	95% Adjusted-CLT UCL (Chen-1995)	38.29
		95% Modified-t UCL (Johnson-1978)	41.24

Nonparametric Distribution Free UCLs

95% CLT UCL	37.09	95% Jackknife UCL	41.06
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	41.3	95% Chebyshev(Mean, Sd) UCL	45.53
97.5% Chebyshev(Mean, Sd) UCL	51.4	99% Chebyshev(Mean, Sd) UCL	62.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	14.8	Mean	17.67
Maximum	21.9	Median	16.3
SD	3.742	Std. Error of Mean	2.161
Coefficient of Variation	0.212	Skewness	1.424
Mean of logged Data	2.857	SD of logged Data	0.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.98	95% Adjusted-CLT UCL (Chen-1995)	23.12
		95% Modified-t UCL (Johnson-1978)	24.27

Nonparametric Distribution Free UCLs

95% CLT UCL	21.22	95% Jackknife UCL	23.98
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	24.15	95% Chebyshev(Mean, Sd) UCL	27.08
97.5% Chebyshev(Mean, Sd) UCL	31.16	99% Chebyshev(Mean, Sd) UCL	39.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11	Mean	11.53
Maximum	12.2	Median	11.4
SD	0.611	Std. Error of Mean	0.353
Coefficient of Variation	0.053	Skewness	0.935
Mean of logged Data	2.444	SD of logged Data	0.0526

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.56	95% Adjusted-CLT UCL (Chen-1995)	12.32
		95% Modified-t UCL (Johnson-1978)	12.6

Nonparametric Distribution Free UCLs

95% CLT UCL	12.11	95% Jackknife UCL	12.56
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.59	95% Chebyshev(Mean, Sd) UCL	13.07
97.5% Chebyshev(Mean, Sd) UCL	13.74	99% Chebyshev(Mean, Sd) UCL	15.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	22.7	Mean	26.47
Maximum	29.7	Median	27
SD	3.53	Std. Error of Mean	2.038
Coefficient of Variation	0.133	Skewness	-0.664
Mean of logged Data	3.27	SD of logged Data	0.136

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.42	95% Adjusted-CLT UCL (Chen-1995)	28.98
		95% Modified-t UCL (Johnson-1978)	32.29

Nonparametric Distribution Free UCLs

95% CLT UCL	29.82	95% Jackknife UCL	32.42
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	32.58	95% Chebyshev(Mean, Sd) UCL	35.35
97.5% Chebyshev(Mean, Sd) UCL	39.2	99% Chebyshev(Mean, Sd) UCL	46.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.98	Mean	4.657
Maximum	5.43	Median	4.56
SD	0.73	Std. Error of Mean	0.421
Coefficient of Variation	0.157	Skewness	0.586
Mean of logged Data	1.53	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.887	95% Adjusted-CLT UCL (Chen-1995)	5.502
		95% Modified-t UCL (Johnson-1978)	5.911

Nonparametric Distribution Free UCLs

95% CLT UCL	5.35	95% Jackknife UCL	5.887
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.921	95% Chebyshev(Mean, Sd) UCL	6.493
97.5% Chebyshev(Mean, Sd) UCL	7.288	99% Chebyshev(Mean, Sd) UCL	8.849

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	26.4	Mean	30.53
Maximum	33.9	Median	31.3
SD	3.808	Std. Error of Mean	2.199
Coefficient of Variation	0.125	Skewness	-0.869
Mean of logged Data	3.413	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.95	95% Adjusted-CLT UCL (Chen-1995)	32.97
		95% Modified-t UCL (Johnson-1978)	36.77

Nonparametric Distribution Free UCLs

95% CLT UCL	34.15	95% Jackknife UCL	36.95
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	37.13	95% Chebyshev(Mean, Sd) UCL	40.12
97.5% Chebyshev(Mean, Sd) UCL	44.26	99% Chebyshev(Mean, Sd) UCL	52.41

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.03	Mean	1.1
Maximum	1.23	Median	1.04
SD	0.113	Std. Error of Mean	0.0651
Coefficient of Variation	0.102	Skewness	1.717
Mean of logged Data	0.0919	SD of logged Data	0.0998

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.29	95% Adjusted-CLT UCL (Chen-1995)	1.276
		95% Modified-t UCL (Johnson-1978)	1.301

Nonparametric Distribution Free UCLs

95% CLT UCL	1.207	95% Jackknife UCL	1.29
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.295	95% Chebyshev(Mean, Sd) UCL	1.384
97.5% Chebyshev(Mean, Sd) UCL	1.506	99% Chebyshev(Mean, Sd) UCL	1.747

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.9	Mean	18.53
Maximum	22.2	Median	17.5
SD	3.275	Std. Error of Mean	1.891
Coefficient of Variation	0.177	Skewness	1.279
Mean of logged Data	2.91	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.05	95% Adjusted-CLT UCL (Chen-1995)	23.13
		95% Modified-t UCL (Johnson-1978)	24.29

Nonparametric Distribution Free UCLs

95% CLT UCL	21.64	95% Jackknife UCL	24.05
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	24.21	95% Chebyshev(Mean, Sd) UCL	26.77
97.5% Chebyshev(Mean, Sd) UCL	30.34	99% Chebyshev(Mean, Sd) UCL	37.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	1.76	Mean	2.247
Maximum	3.06	Median	1.92
SD	0.709	Std. Error of Mean	0.409
Coefficient of Variation	0.316	Skewness	1.633
Mean of logged Data	0.779	SD of logged Data	0.297

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.442	95% Adjusted-CLT UCL (Chen-1995)	3.332
		95% Modified-t UCL (Johnson-1978)	3.506

Nonparametric Distribution Free UCLs

95% CLT UCL	2.92	95% Jackknife UCL	3.442
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.475	95% Chebyshev(Mean, Sd) UCL	4.031
97.5% Chebyshev(Mean, Sd) UCL	4.803	99% Chebyshev(Mean, Sd) UCL	6.319

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.2	Mean	12.8
Maximum	14.1	Median	13.1
SD	1.473	Std. Error of Mean	0.85
Coefficient of Variation	0.115	Skewness	-0.878
Mean of logged Data	2.545	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	15.28	95% Adjusted-CLT UCL (Chen-1995)	13.74
		95% Modified-t UCL (Johnson-1978)	15.21

Nonparametric Distribution Free UCLs

95% CLT UCL	14.2	95% Jackknife UCL	15.28
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.35	95% Chebyshev(Mean, Sd) UCL	16.51
97.5% Chebyshev(Mean, Sd) UCL	18.11	99% Chebyshev(Mean, Sd) UCL	21.26

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	25.5	Mean	30
Maximum	33	Median	31.5
SD	3.969	Std. Error of Mean	2.291
Coefficient of Variation	0.132	Skewness	-1.458
Mean of logged Data	3.395	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.69	95% Adjusted-CLT UCL (Chen-1995)	31.71
		95% Modified-t UCL (Johnson-1978)	36.37

Nonparametric Distribution Free UCLs

95% CLT UCL	33.77	95% Jackknife UCL	36.69
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	36.87	95% Chebyshev(Mean, Sd) UCL	39.99
97.5% Chebyshev(Mean, Sd) UCL	44.31	99% Chebyshev(Mean, Sd) UCL	52.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	13.5	Mean	13.67
Maximum	13.8	Median	13.7
SD	0.153	Std. Error of Mean	0.0882
Coefficient of Variation	0.0112	Skewness	-0.935
Mean of logged Data	2.615	SD of logged Data	0.0112

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.92	95% Adjusted-CLT UCL (Chen-1995)	13.76
		95% Modified-t UCL (Johnson-1978)	13.92

Nonparametric Distribution Free UCLs

95% CLT UCL	13.81	95% Jackknife UCL	13.92
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.93	95% Chebyshev(Mean, Sd) UCL	14.05
97.5% Chebyshev(Mean, Sd) UCL	14.22	99% Chebyshev(Mean, Sd) UCL	14.54

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	15	Mean	15.13
Maximum	15.4	Median	15
SD	0.231	Std. Error of Mean	0.133
Coefficient of Variation	0.0153	Skewness	1.732
Mean of logged Data	2.717	SD of logged Data	0.0152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.52	95% Adjusted-CLT UCL (Chen-1995)	15.5
		95% Modified-t UCL (Johnson-1978)	15.54

Nonparametric Distribution Free UCLs

95% CLT UCL	15.35	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.53	95% Chebyshev(Mean, Sd) UCL	15.71
97.5% Chebyshev(Mean, Sd) UCL	15.97	99% Chebyshev(Mean, Sd) UCL	16.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	65.4	Mean	65.87
Maximum	66.7	Median	65.5
SD	0.723	Std. Error of Mean	0.418
Coefficient of Variation	0.011	Skewness	1.695
Mean of logged Data	4.188	SD of logged Data	0.0109

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	67.09	95% Adjusted-CLT UCL (Chen-1995)	66.99
		95% Modified-t UCL (Johnson-1978)	67.15

Nonparametric Distribution Free UCLs

95% CLT UCL	66.55	95% Jackknife UCL	67.09
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	67.12	95% Chebyshev(Mean, Sd) UCL	67.69
97.5% Chebyshev(Mean, Sd) UCL	68.47	99% Chebyshev(Mean, Sd) UCL	70.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:09:12 AM
From File	Table 1. Parcel Statistical Results (Kingman APN32405168) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.79	Mean	3.193
Maximum	4.54	Median	3.25
SD	1.376	Std. Error of Mean	0.794
Coefficient of Variation	0.431	Skewness	-0.185
Mean of logged Data	1.091	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.513	95% Adjusted-CLT UCL (Chen-1995)	4.409
		95% Modified-t UCL (Johnson-1978)	5.499

Nonparametric Distribution Free UCLs

95% CLT UCL	4.5	95% Jackknife UCL	5.513
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	5.576	95% Chebyshev(Mean, Sd) UCL	6.656
97.5% Chebyshev(Mean, Sd) UCL	8.154	99% Chebyshev(Mean, Sd) UCL	11.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.33	Mean	0.458
Maximum	0.525	Median	0.52
SD	0.111	Std. Error of Mean	0.0642
Coefficient of Variation	0.243	Skewness	-1.728
Mean of logged Data	-0.802	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.646	95% Adjusted-CLT UCL (Chen-1995)	0.495
		95% Modified-t UCL (Johnson-1978)	0.635

Nonparametric Distribution Free UCLs

95% CLT UCL	0.564	95% Jackknife UCL	0.646
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.651	95% Chebyshev(Mean, Sd) UCL	0.738
97.5% Chebyshev(Mean, Sd) UCL	0.859	99% Chebyshev(Mean, Sd) UCL	1.097

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.67	Mean	1.987
Maximum	2.15	Median	2.14
SD	0.274	Std. Error of Mean	0.158
Coefficient of Variation	0.138	Skewness	-1.729
Mean of logged Data	0.68	SD of logged Data	0.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.449	95% Adjusted-CLT UCL (Chen-1995)	2.078
		95% Modified-t UCL (Johnson-1978)	2.423

Nonparametric Distribution Free UCLs

95% CLT UCL	2.247	95% Jackknife UCL	2.449
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.462	95% Chebyshev(Mean, Sd) UCL	2.677
97.5% Chebyshev(Mean, Sd) UCL	2.976	99% Chebyshev(Mean, Sd) UCL	3.562

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.51	Mean	7.803
Maximum	9.65	Median	7.25
SD	1.642	Std. Error of Mean	0.948
Coefficient of Variation	0.21	Skewness	1.345
Mean of logged Data	2.04	SD of logged Data	0.203

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.57	95% Adjusted-CLT UCL (Chen-1995)	10.15
		95% Modified-t UCL (Johnson-1978)	10.69

Nonparametric Distribution Free UCLs

95% CLT UCL	9.362	95% Jackknife UCL	10.57
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A

95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.65	95% Chebyshev(Mean, Sd) UCL	11.93
97.5% Chebyshev(Mean, Sd) UCL	13.72	99% Chebyshev(Mean, Sd) UCL	17.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.83	Mean	10.59
Maximum	13	Median	9.95
SD	2.158	Std. Error of Mean	1.246
Coefficient of Variation	0.204	Skewness	1.222
Mean of logged Data	2.347	SD of logged Data	0.198

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.23	95% Adjusted-CLT UCL (Chen-1995)	13.58
		95% Modified-t UCL (Johnson-1978)	14.38

Nonparametric Distribution Free UCLs

95% CLT UCL	12.64	95% Jackknife UCL	14.23
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.33	95% Chebyshev(Mean, Sd) UCL	16.02
97.5% Chebyshev(Mean, Sd) UCL	18.37	99% Chebyshev(Mean, Sd) UCL	22.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	15.9	Mean	18.17
Maximum	20.1	Median	18.5
SD	2.12	Std. Error of Mean	1.224
Coefficient of Variation	0.117	Skewness	-0.69
Mean of logged Data	2.895	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.74	95% Adjusted-CLT UCL (Chen-1995)	19.66
		95% Modified-t UCL (Johnson-1978)	21.66

Nonparametric Distribution Free UCLs

95% CLT UCL	20.18	95% Jackknife UCL	21.74
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	21.84	95% Chebyshev(Mean, Sd) UCL	23.5
97.5% Chebyshev(Mean, Sd) UCL	25.81	99% Chebyshev(Mean, Sd) UCL	30.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness. These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	10.2	Mean	11.03
Maximum	12	Median	10.9
SD	0.907	Std. Error of Mean	0.524
Coefficient of Variation	0.0822	Skewness	0.647
Mean of logged Data	2.399	SD of logged Data	0.0817

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.56	95% Adjusted-CLT UCL (Chen-1995)	12.1
		95% Modified-t UCL (Johnson-1978)	12.6

Nonparametric Distribution Free UCLs

95% CLT UCL	11.9	95% Jackknife UCL	12.56
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.6	95% Chebyshev(Mean, Sd) UCL	13.32
97.5% Chebyshev(Mean, Sd) UCL	14.3	99% Chebyshev(Mean, Sd) UCL	16.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	7.48	Mean	8.507
Maximum	10.2	Median	7.84
SD	1.477	Std. Error of Mean	0.853
Coefficient of Variation	0.174	Skewness	1.617
Mean of logged Data	2.131	SD of logged Data	0.167

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11	95% Adjusted-CLT UCL (Chen-1995)	10.76
		95% Modified-t UCL (Johnson-1978)	11.13

Nonparametric Distribution Free UCLs

95% CLT UCL	9.91	95% Jackknife UCL	11
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		

90% Chebyshev(Mean, Sd) UCL	11.07	95% Chebyshev(Mean, Sd) UCL	12.22
97.5% Chebyshev(Mean, Sd) UCL	13.83	99% Chebyshev(Mean, Sd) UCL	16.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.15	Mean	10.88
Maximum	16.9	Median	13.6
SD	7.741	Std. Error of Mean	4.469
Coefficient of Variation	0.711	Skewness	-1.385
Mean of logged Data	2.068	SD of logged Data	1.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.93	95% Adjusted-CLT UCL (Chen-1995)	14.42
		95% Modified-t UCL (Johnson-1978)	23.34

Nonparametric Distribution Free UCLs

95% CLT UCL	18.23	95% Jackknife UCL	23.93
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	24.29	95% Chebyshev(Mean, Sd) UCL	30.36
97.5% Chebyshev(Mean, Sd) UCL	38.79	99% Chebyshev(Mean, Sd) UCL	55.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.55	Mean	3.05
Maximum	3.305	Median	3.295
SD	0.433	Std. Error of Mean	0.25
Coefficient of Variation	0.142	Skewness	-1.731
Mean of logged Data	1.108	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.78	95% Adjusted-CLT UCL (Chen-1995)	3.194
		95% Modified-t UCL (Johnson-1978)	3.738

Nonparametric Distribution Free UCLs

95% CLT UCL	3.461	95% Jackknife UCL	3.78
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.8	95% Chebyshev(Mean, Sd) UCL	4.14
97.5% Chebyshev(Mean, Sd) UCL	4.611	99% Chebyshev(Mean, Sd) UCL	5.538

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	12.9	Mean	16.8
Maximum	20.4	Median	17.1
SD	3.759	Std. Error of Mean	2.17
Coefficient of Variation	0.224	Skewness	-0.357
Mean of logged Data	2.804	SD of logged Data	0.231

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.14	95% Adjusted-CLT UCL (Chen-1995)	19.89
		95% Modified-t UCL (Johnson-1978)	23.06

Nonparametric Distribution Free UCLs

95% CLT UCL	20.37	95% Jackknife UCL	23.14
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	23.31	95% Chebyshev(Mean, Sd) UCL	26.26
97.5% Chebyshev(Mean, Sd) UCL	30.35	99% Chebyshev(Mean, Sd) UCL	38.39

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.15	Mean	1.265
Maximum	1.325	Median	1.32
SD	0.0996	Std. Error of Mean	0.0575
Coefficient of Variation	0.0788	Skewness	-1.727
Mean of logged Data	0.233	SD of logged Data	0.0807

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.433	95% Adjusted-CLT UCL (Chen-1995)	1.298
		95% Modified-t UCL (Johnson-1978)	1.423

Nonparametric Distribution Free UCLs

95% CLT UCL	1.36	95% Jackknife UCL	1.433
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.438	95% Chebyshev(Mean, Sd) UCL	1.516
97.5% Chebyshev(Mean, Sd) UCL	1.624	99% Chebyshev(Mean, Sd) UCL	1.837

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.31	Mean	9.243
Maximum	9.76	Median	9.66
SD	0.81	Std. Error of Mean	0.468
Coefficient of Variation	0.0876	Skewness	-1.702
Mean of logged Data	2.221	SD of logged Data	0.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.61	95% Adjusted-CLT UCL (Chen-1995)	9.521
		95% Modified-t UCL (Johnson-1978)	10.53

Nonparametric Distribution Free UCLs

95% CLT UCL	10.01	95% Jackknife UCL	10.61
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	10.65	95% Chebyshev(Mean, Sd) UCL	11.28
97.5% Chebyshev(Mean, Sd) UCL	12.16	99% Chebyshev(Mean, Sd) UCL	13.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.97	Mean	4.03
Maximum	5.83	Median	3.29
SD	1.567	Std. Error of Mean	0.905
Coefficient of Variation	0.389	Skewness	1.651
Mean of logged Data	1.347	SD of logged Data	0.363

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.672	95% Adjusted-CLT UCL (Chen-1995)	6.44
		95% Modified-t UCL (Johnson-1978)	6.816

Nonparametric Distribution Free UCLs

95% CLT UCL	5.518	95% Jackknife UCL	6.672
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.744	95% Chebyshev(Mean, Sd) UCL	7.974
97.5% Chebyshev(Mean, Sd) UCL	9.68	99% Chebyshev(Mean, Sd) UCL	13.03

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	5.94	Mean	7.443
Maximum	8.77	Median	7.62
SD	1.423	Std. Error of Mean	0.822

Coefficient of Variation	0.191	Skewness	-0.55
Mean of logged Data	1.995	SD of logged Data	0.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.843	95% Adjusted-CLT UCL (Chen-1995)	8.516
		95% Modified-t UCL (Johnson-1978)	9.799

Nonparametric Distribution Free UCLs

95% CLT UCL	8.795	95% Jackknife UCL	9.843
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	9.908	95% Chebyshev(Mean, Sd) UCL	11.03
97.5% Chebyshev(Mean, Sd) UCL	12.57	99% Chebyshev(Mean, Sd) UCL	15.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	12	Mean	15.37
Maximum	18.5	Median	15.6
SD	3.256	Std. Error of Mean	1.88
Coefficient of Variation	0.212	Skewness	-0.321
Mean of logged Data	2.717	SD of logged Data	0.218

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	20.86	95% Adjusted-CLT UCL (Chen-1995)	18.09
		95% Modified-t UCL (Johnson-1978)	20.8

Nonparametric Distribution Free UCLs

95% CLT UCL	18.46	95% Jackknife UCL	20.86
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	21.01	95% Chebyshev(Mean, Sd) UCL	23.56
97.5% Chebyshev(Mean, Sd) UCL	27.11	99% Chebyshev(Mean, Sd) UCL	34.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	16	Mean	16.8
Maximum	17.8	Median	16.6
SD	0.917	Std. Error of Mean	0.529
Coefficient of Variation	0.0546	Skewness	0.935
Mean of logged Data	2.82	SD of logged Data	0.0541

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.35	95% Adjusted-CLT UCL (Chen-1995)	17.98
		95% Modified-t UCL (Johnson-1978)	18.39

Nonparametric Distribution Free UCLs

95% CLT UCL	17.67	95% Jackknife UCL	18.35
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	18.39	95% Chebyshev(Mean, Sd) UCL	19.11
97.5% Chebyshev(Mean, Sd) UCL	20.1	99% Chebyshev(Mean, Sd) UCL	22.06

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.3	Mean	13.07
Maximum	16.4	Median	11.5
SD	2.888	Std. Error of Mean	1.668
Coefficient of Variation	0.221	Skewness	1.723
Mean of logged Data	2.555	SD of logged Data	0.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.94	95% Adjusted-CLT UCL (Chen-1995)	17.58
		95% Modified-t UCL (Johnson-1978)	18.21

Nonparametric Distribution Free UCLs

95% CLT UCL	15.81	95% Jackknife UCL	17.94
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	18.07	95% Chebyshev(Mean, Sd) UCL	20.34
97.5% Chebyshev(Mean, Sd) UCL	23.48	99% Chebyshev(Mean, Sd) UCL	29.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	89.9	Mean	96.27
Maximum	105	Median	93.9

SD	7.823	Std. Error of Mean	4.517
Coefficient of Variation	0.0813	Skewness	1.237
Mean of logged Data	4.565	SD of logged Data	0.0801

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	109.5	95% Adjusted-CLT UCL (Chen-1995)	107.1
		95% Modified-t UCL (Johnson-1978)	110

Nonparametric Distribution Free UCLs

95% CLT UCL	103.7	95% Jackknife UCL	109.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	109.8	95% Chebyshev(Mean, Sd) UCL	116
97.5% Chebyshev(Mean, Sd) UCL	124.5	99% Chebyshev(Mean, Sd) UCL	141.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:11:51 AM
From File	Table 1. Parcel Analytical Results ((Kingman APN32405169) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.716	Mean	1.09
Maximum	2.27	Median	0.91
SD	0.586	Std. Error of Mean	0.239
Coefficient of Variation	0.537	Skewness	2.304
Mean of logged Data	-4.891E-6	SD of logged Data	0.417

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.572	95% Adjusted-CLT UCL (Chen-1995)	1.724
		95% Modified-t UCL (Johnson-1978)	1.609

Nonparametric Distribution Free UCLs

95% CLT UCL	1.483	95% Jackknife UCL	1.572
95% Standard Bootstrap UCL	1.445	95% Bootstrap-t UCL	2.929
95% Hall's Bootstrap UCL	3.811	95% Percentile Bootstrap UCL	1.527
95% BCA Bootstrap UCL	1.592		
90% Chebyshev(Mean, Sd) UCL	1.808	95% Chebyshev(Mean, Sd) UCL	2.132
97.5% Chebyshev(Mean, Sd) UCL	2.583	99% Chebyshev(Mean, Sd) UCL	3.469

Suggested UCL to Use

95% Student's-t UCL	1.572	or 95% Modified-t UCL	1.609

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.56	Mean	2.038
Maximum	2.59	Median	2.018
SD	0.33	Std. Error of Mean	0.135
Coefficient of Variation	0.162	Skewness	0.494
Mean of logged Data	0.701	SD of logged Data	0.162

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.309	95% Adjusted-CLT UCL (Chen-1995)	2.288
		95% Modified-t UCL (Johnson-1978)	2.314

Nonparametric Distribution Free UCLs

95% CLT UCL	2.259	95% Jackknife UCL	2.309
95% Standard Bootstrap UCL	2.243	95% Bootstrap-t UCL	2.324
95% Hall's Bootstrap UCL	2.446	95% Percentile Bootstrap UCL	2.228
95% BCA Bootstrap UCL	2.293		
90% Chebyshev(Mean, Sd) UCL	2.442	95% Chebyshev(Mean, Sd) UCL	2.625
97.5% Chebyshev(Mean, Sd) UCL	2.879	99% Chebyshev(Mean, Sd) UCL	3.378

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.71	Mean	5.688
Maximum	11.3	Median	4.815
SD	4.153	Std. Error of Mean	1.695
Coefficient of Variation	0.73	Skewness	0.396
Mean of logged Data	1.47	SD of logged Data	0.833

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	9.104	95% Adjusted-CLT UCL (Chen-1995)	8.769
		95% Modified-t UCL (Johnson-1978)	9.15

Nonparametric Distribution Free UCLs

95% CLT UCL	8.476	95% Jackknife UCL	9.104
95% Standard Bootstrap UCL	8.245	95% Bootstrap-t UCL	9.122
95% Hall's Bootstrap UCL	7.515	95% Percentile Bootstrap UCL	8.253
95% BCA Bootstrap UCL	8.276		
90% Chebyshev(Mean, Sd) UCL	10.77	95% Chebyshev(Mean, Sd) UCL	13.08
97.5% Chebyshev(Mean, Sd) UCL	16.28	99% Chebyshev(Mean, Sd) UCL	22.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.02	Mean	7.655
Maximum	15.7	Median	6.285
SD	5.994	Std. Error of Mean	2.447
Coefficient of Variation	0.783	Skewness	0.4
Mean of logged Data	1.715	SD of logged Data	0.916

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.59	95% Adjusted-CLT UCL (Chen-1995)	12.11
		95% Modified-t UCL (Johnson-1978)	12.65

Nonparametric Distribution Free UCLs

95% CLT UCL	11.68	95% Jackknife UCL	12.59
95% Standard Bootstrap UCL	11.39	95% Bootstrap-t UCL	12.6
95% Hall's Bootstrap UCL	10.63	95% Percentile Bootstrap UCL	11.35
95% BCA Bootstrap UCL	12.02		
90% Chebyshev(Mean, Sd) UCL	15	95% Chebyshev(Mean, Sd) UCL	18.32
97.5% Chebyshev(Mean, Sd) UCL	22.94	99% Chebyshev(Mean, Sd) UCL	32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.11	Mean	13.05
Maximum	27	Median	10.9
SD	10.47	Std. Error of Mean	4.275
Coefficient of Variation	0.802	Skewness	0.359
Mean of logged Data	2.22	SD of logged Data	0.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.67	95% Adjusted-CLT UCL (Chen-1995)	20.75
		95% Modified-t UCL (Johnson-1978)	21.77

Nonparametric Distribution Free UCLs

95% CLT UCL	20.08	95% Jackknife UCL	21.67
95% Standard Bootstrap UCL	19.4	95% Bootstrap-t UCL	21.39
95% Hall's Bootstrap UCL	17.36	95% Percentile Bootstrap UCL	19.85
95% BCA Bootstrap UCL	20.2		
90% Chebyshev(Mean, Sd) UCL	25.88	95% Chebyshev(Mean, Sd) UCL	31.68
97.5% Chebyshev(Mean, Sd) UCL	39.75	99% Chebyshev(Mean, Sd) UCL	55.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.36	Mean	5.063
Maximum	13	Median	3.383
SD	4.011	Std. Error of Mean	1.637
Coefficient of Variation	0.792	Skewness	2.143
Mean of logged Data	1.435	SD of logged Data	0.614

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.363	95% Adjusted-CLT UCL (Chen-1995)	9.287
		95% Modified-t UCL (Johnson-1978)	8.601

Nonparametric Distribution Free UCLs

95% CLT UCL	7.757	95% Jackknife UCL	8.363
95% Standard Bootstrap UCL	7.462	95% Bootstrap-t UCL	21.95
95% Hall's Bootstrap UCL	21.09	95% Percentile Bootstrap UCL	8.012
95% BCA Bootstrap UCL	8.493		
90% Chebyshev(Mean, Sd) UCL	9.975	95% Chebyshev(Mean, Sd) UCL	12.2
97.5% Chebyshev(Mean, Sd) UCL	15.29	99% Chebyshev(Mean, Sd) UCL	21.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.955	Mean	5.086
Maximum	9.57	Median	3.965
SD	3.632	Std. Error of Mean	1.483
Coefficient of Variation	0.714	Skewness	0.403
Mean of logged Data	1.381	SD of logged Data	0.786

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.074	95% Adjusted-CLT UCL (Chen-1995)	7.786
		95% Modified-t UCL (Johnson-1978)	8.115

Nonparametric Distribution Free UCLs

95% CLT UCL	7.525	95% Jackknife UCL	8.074

95% Standard Bootstrap UCL	7.286	95% Bootstrap-t UCL	8.265
95% Hall's Bootstrap UCL	7.172	95% Percentile Bootstrap UCL	7.462
95% BCA Bootstrap UCL	7.515		
90% Chebyshev(Mean, Sd) UCL	9.534	95% Chebyshev(Mean, Sd) UCL	11.55
97.5% Chebyshev(Mean, Sd) UCL	14.35	99% Chebyshev(Mean, Sd) UCL	19.84

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.47	Mean	11.6
Maximum	22.6	Median	10.59
SD	9.278	Std. Error of Mean	3.788
Coefficient of Variation	0.8	Skewness	0.141
Mean of logged Data	2.076	SD of logged Data	1.015

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.23	95% Adjusted-CLT UCL (Chen-1995)	18.06
		95% Modified-t UCL (Johnson-1978)	19.26

Nonparametric Distribution Free UCLs

95% CLT UCL	17.82	95% Jackknife UCL	19.23
95% Standard Bootstrap UCL	17.28	95% Bootstrap-t UCL	21.42
95% Hall's Bootstrap UCL	15.07	95% Percentile Bootstrap UCL	17.5
95% BCA Bootstrap UCL	17.5		
90% Chebyshev(Mean, Sd) UCL	22.96	95% Chebyshev(Mean, Sd) UCL	28.1
97.5% Chebyshev(Mean, Sd) UCL	35.25	99% Chebyshev(Mean, Sd) UCL	49.28

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.85	Mean	3.074
Maximum	3.29	Median	3.045
SD	0.156	Std. Error of Mean	0.0638
Coefficient of Variation	0.0509	Skewness	0.0688
Mean of logged Data	1.122	SD of logged Data	0.0509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.203	95% Adjusted-CLT UCL (Chen-1995)	3.181
		95% Modified-t UCL (Johnson-1978)	3.203

Nonparametric Distribution Free UCLs

95% CLT UCL	3.179	95% Jackknife UCL	3.203
95% Standard Bootstrap UCL	3.172	95% Bootstrap-t UCL	3.244
95% Hall's Bootstrap UCL	3.31	95% Percentile Bootstrap UCL	3.173
95% BCA Bootstrap UCL	3.168		
90% Chebyshev(Mean, Sd) UCL	3.266	95% Chebyshev(Mean, Sd) UCL	3.352
97.5% Chebyshev(Mean, Sd) UCL	3.473	99% Chebyshev(Mean, Sd) UCL	3.709

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.58	Mean	11.82
Maximum	22.6	Median	11.43
SD	9.014	Std. Error of Mean	3.68
Coefficient of Variation	0.763	Skewness	0.0941
Mean of logged Data	2.131	SD of logged Data	0.966

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.23	95% Adjusted-CLT UCL (Chen-1995)	18.02
		95% Modified-t UCL (Johnson-1978)	19.25

Nonparametric Distribution Free UCLs

95% CLT UCL	17.87	95% Jackknife UCL	19.23
95% Standard Bootstrap UCL	17.43	95% Bootstrap-t UCL	19.55
95% Hall's Bootstrap UCL	15.29	95% Percentile Bootstrap UCL	17.51
95% BCA Bootstrap UCL	17.18		
90% Chebyshev(Mean, Sd) UCL	22.85	95% Chebyshev(Mean, Sd) UCL	27.86
97.5% Chebyshev(Mean, Sd) UCL	34.8	99% Chebyshev(Mean, Sd) UCL	48.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.2	Mean	1.832
Maximum	4.52	Median	1.273
SD	1.321	Std. Error of Mean	0.539
Coefficient of Variation	0.721	Skewness	2.414
Mean of logged Data	0.464	SD of logged Data	0.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.919	95% Adjusted-CLT UCL (Chen-1995)	3.287
		95% Modified-t UCL (Johnson-1978)	3.007

Nonparametric Distribution Free UCLs

95% CLT UCL	2.719	95% Jackknife UCL	2.919
95% Standard Bootstrap UCL	2.646	95% Bootstrap-t UCL	24.42
95% Hall's Bootstrap UCL	12.29	95% Percentile Bootstrap UCL	2.884
95% BCA Bootstrap UCL	2.96		
90% Chebyshev(Mean, Sd) UCL	3.45	95% Chebyshev(Mean, Sd) UCL	4.183
97.5% Chebyshev(Mean, Sd) UCL	5.2	99% Chebyshev(Mean, Sd) UCL	7.199

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.183

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.03	Mean	6.833
Maximum	14	Median	5.468
SD	5.076	Std. Error of Mean	2.072
Coefficient of Variation	0.743	Skewness	0.513
Mean of logged Data	1.653	SD of logged Data	0.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.01	95% Adjusted-CLT UCL (Chen-1995)	10.7
		95% Modified-t UCL (Johnson-1978)	11.08

Nonparametric Distribution Free UCLs

95% CLT UCL	10.24	95% Jackknife UCL	11.01
95% Standard Bootstrap UCL	9.958	95% Bootstrap-t UCL	11.44
95% Hall's Bootstrap UCL	9.878	95% Percentile Bootstrap UCL	10.08
95% BCA Bootstrap UCL	10.23		
90% Chebyshev(Mean, Sd) UCL	13.05	95% Chebyshev(Mean, Sd) UCL	15.86
97.5% Chebyshev(Mean, Sd) UCL	19.77	99% Chebyshev(Mean, Sd) UCL	27.45

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.9	Mean	1.143
Maximum	1.52	Median	1.118
SD	0.252	Std. Error of Mean	0.103
Coefficient of Variation	0.221	Skewness	0.517
Mean of logged Data	0.113	SD of logged Data	0.217

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.35	95% Adjusted-CLT UCL (Chen-1995)	1.335
		95% Modified-t UCL (Johnson-1978)	1.353

Nonparametric Distribution Free UCLs

95% CLT UCL	1.312	95% Jackknife UCL	1.35
95% Standard Bootstrap UCL	1.296	95% Bootstrap-t UCL	1.419
95% Hall's Bootstrap UCL	1.269	95% Percentile Bootstrap UCL	1.304
95% BCA Bootstrap UCL	1.304		
90% Chebyshev(Mean, Sd) UCL	1.451	95% Chebyshev(Mean, Sd) UCL	1.591
97.5% Chebyshev(Mean, Sd) UCL	1.785	99% Chebyshev(Mean, Sd) UCL	2.166

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.005	Mean	8.629
Maximum	26.7	Median	5.275
SD	9.168	Std. Error of Mean	3.743
Coefficient of Variation	1.062	Skewness	2.098
Mean of logged Data	1.8	SD of logged Data	0.861

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	16.17	95% Adjusted-CLT UCL (Chen-1995)	18.21
		95% Modified-t UCL (Johnson-1978)	16.71

Nonparametric Distribution Free UCLs

95% CLT UCL	14.79	95% Jackknife UCL	16.17
95% Standard Bootstrap UCL	14.31	95% Bootstrap-t UCL	34.1
95% Hall's Bootstrap UCL	37.21	95% Percentile Bootstrap UCL	15.62
95% BCA Bootstrap UCL	16.49		
90% Chebyshev(Mean, Sd) UCL	19.86	95% Chebyshev(Mean, Sd) UCL	24.94
97.5% Chebyshev(Mean, Sd) UCL	32	99% Chebyshev(Mean, Sd) UCL	45.87

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.81	Mean	12.13
Maximum	23.5	Median	11.86
SD	9.537	Std. Error of Mean	3.894
Coefficient of Variation	0.786	Skewness	0.0918
Mean of logged Data	2.134	SD of logged Data	0.996

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.98	95% Adjusted-CLT UCL (Chen-1995)	18.69
		95% Modified-t UCL (Johnson-1978)	20

Nonparametric Distribution Free UCLs

95% CLT UCL	18.54	95% Jackknife UCL	19.98
95% Standard Bootstrap UCL	18.06	95% Bootstrap-t UCL	20.82
95% Hall's Bootstrap UCL	15.56	95% Percentile Bootstrap UCL	18.02
95% BCA Bootstrap UCL	18.09		
90% Chebyshev(Mean, Sd) UCL	23.81	95% Chebyshev(Mean, Sd) UCL	29.11
97.5% Chebyshev(Mean, Sd) UCL	36.45	99% Chebyshev(Mean, Sd) UCL	50.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.7	Mean	12.63
Maximum	13.8	Median	12.55
SD	0.935	Std. Error of Mean	0.382
Coefficient of Variation	0.074	Skewness	0.159
Mean of logged Data	2.534	SD of logged Data	0.0739

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.4	95% Adjusted-CLT UCL (Chen-1995)	13.29
		95% Modified-t UCL (Johnson-1978)	13.41

Nonparametric Distribution Free UCLs

95% CLT UCL	13.26	95% Jackknife UCL	13.4
95% Standard Bootstrap UCL	13.19	95% Bootstrap-t UCL	13.48
95% Hall's Bootstrap UCL	12.98	95% Percentile Bootstrap UCL	13.23
95% BCA Bootstrap UCL	13.22		
90% Chebyshev(Mean, Sd) UCL	13.78	95% Chebyshev(Mean, Sd) UCL	14.3
97.5% Chebyshev(Mean, Sd) UCL	15.02	99% Chebyshev(Mean, Sd) UCL	16.43

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.4	Mean	12.72
Maximum	15.5	Median	12.3
SD	1.573	Std. Error of Mean	0.642
Coefficient of Variation	0.124	Skewness	1.283
Mean of logged Data	2.537	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.01	95% Adjusted-CLT UCL (Chen-1995)	14.13
		95% Modified-t UCL (Johnson-1978)	14.07

Nonparametric Distribution Free UCLs

95% CLT UCL	13.77	95% Jackknife UCL	14.01
95% Standard Bootstrap UCL	13.68	95% Bootstrap-t UCL	14.69
95% Hall's Bootstrap UCL	14.75	95% Percentile Bootstrap UCL	13.77
95% BCA Bootstrap UCL	13.97		
90% Chebyshev(Mean, Sd) UCL	14.64	95% Chebyshev(Mean, Sd) UCL	15.52
97.5% Chebyshev(Mean, Sd) UCL	16.73	99% Chebyshev(Mean, Sd) UCL	19.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44	Mean	45.1
Maximum	46.1	Median	45.15
SD	0.932	Std. Error of Mean	0.38
Coefficient of Variation	0.0207	Skewness	-0.0757
Mean of logged Data	3.809	SD of logged Data	0.0207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.87	95% Adjusted-CLT UCL (Chen-1995)	45.71
		95% Modified-t UCL (Johnson-1978)	45.86

Nonparametric Distribution Free UCLs

95% CLT UCL	45.73	95% Jackknife UCL	45.87

95% Standard Bootstrap UCL	45.66	95% Bootstrap-t UCL	45.89
95% Hall's Bootstrap UCL	45.46	95% Percentile Bootstrap UCL	45.68
95% BCA Bootstrap UCL	45.68		
90% Chebyshev(Mean, Sd) UCL	46.24	95% Chebyshev(Mean, Sd) UCL	46.76
97.5% Chebyshev(Mean, Sd) UCL	47.48	99% Chebyshev(Mean, Sd) UCL	48.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 5:49:38 PM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405172) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.81	Mean	3.618
Maximum	5.01	Median	4.075
SD	1.413	Std. Error of Mean	0.577
Coefficient of Variation	0.39	Skewness	-0.655
Mean of logged Data	1.206	SD of logged Data	0.461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.78	95% Adjusted-CLT UCL (Chen-1995)	4.402
		95% Modified-t UCL (Johnson-1978)	4.755

Nonparametric Distribution Free UCLs

95% CLT UCL	4.567	95% Jackknife UCL	4.78
95% Standard Bootstrap UCL	4.496	95% Bootstrap-t UCL	4.523
95% Hall's Bootstrap UCL	4.231	95% Percentile Bootstrap UCL	4.467
95% BCA Bootstrap UCL	4.355		
90% Chebyshev(Mean, Sd) UCL	5.349	95% Chebyshev(Mean, Sd) UCL	6.132
97.5% Chebyshev(Mean, Sd) UCL	7.22	99% Chebyshev(Mean, Sd) UCL	9.357

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.65	Mean	3.748
Maximum	7.55	Median	2.875
SD	2.963	Std. Error of Mean	1.21
Coefficient of Variation	0.79	Skewness	0.466
Mean of logged Data	0.982	SD of logged Data	0.969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.186	95% Adjusted-CLT UCL (Chen-1995)	5.984
		95% Modified-t UCL (Johnson-1978)	6.224

Nonparametric Distribution Free UCLs

95% CLT UCL	5.738	95% Jackknife UCL	6.186
95% Standard Bootstrap UCL	5.521	95% Bootstrap-t UCL	6.961
95% Hall's Bootstrap UCL	6.296	95% Percentile Bootstrap UCL	5.637
95% BCA Bootstrap UCL	5.783		
90% Chebyshev(Mean, Sd) UCL	7.377	95% Chebyshev(Mean, Sd) UCL	9.021
97.5% Chebyshev(Mean, Sd) UCL	11.3	99% Chebyshev(Mean, Sd) UCL	15.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.79	Mean	16.89
Maximum	42.6	Median	10.36
SD	15.73	Std. Error of Mean	6.42
Coefficient of Variation	0.931	Skewness	1.056
Mean of logged Data	2.417	SD of logged Data	1.03

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.83	95% Adjusted-CLT UCL (Chen-1995)	30.41
		95% Modified-t UCL (Johnson-1978)	30.29

Nonparametric Distribution Free UCLs

95% CLT UCL	27.45	95% Jackknife UCL	29.83
95% Standard Bootstrap UCL	26.53	95% Bootstrap-t UCL	56.58
95% Hall's Bootstrap UCL	36.68	95% Percentile Bootstrap UCL	27.26
95% BCA Bootstrap UCL	29.22		
90% Chebyshev(Mean, Sd) UCL	36.15	95% Chebyshev(Mean, Sd) UCL	44.87
97.5% Chebyshev(Mean, Sd) UCL	56.98	99% Chebyshev(Mean, Sd) UCL	80.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.2	Mean	111.4
Maximum	259	Median	79.45
SD	90.35	Std. Error of Mean	36.89
Coefficient of Variation	0.811	Skewness	0.995
Mean of logged Data	4.412	SD of logged Data	0.879

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	185.7	95% Adjusted-CLT UCL (Chen-1995)	188
		95% Modified-t UCL (Johnson-1978)	188.2

Nonparametric Distribution Free UCLs

95% CLT UCL	172	95% Jackknife UCL	185.7
95% Standard Bootstrap UCL	166.5	95% Bootstrap-t UCL	250.3
95% Hall's Bootstrap UCL	550.1	95% Percentile Bootstrap UCL	166.5
95% BCA Bootstrap UCL	175.2		
90% Chebyshev(Mean, Sd) UCL	222	95% Chebyshev(Mean, Sd) UCL	272.1
97.5% Chebyshev(Mean, Sd) UCL	341.7	99% Chebyshev(Mean, Sd) UCL	478.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.9	Mean	136.6
Maximum	328	Median	95.85
SD	110.5	Std. Error of Mean	45.13
Coefficient of Variation	0.809	Skewness	1.226
Mean of logged Data	4.639	SD of logged Data	0.831

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	227.5	95% Adjusted-CLT UCL (Chen-1995)	235
		95% Modified-t UCL (Johnson-1978)	231.3

Nonparametric Distribution Free UCLs

95% CLT UCL	210.8	95% Jackknife UCL	227.5
95% Standard Bootstrap UCL	203.8	95% Bootstrap-t UCL	342.3
95% Hall's Bootstrap UCL	619.4	95% Percentile Bootstrap UCL	208.3
95% BCA Bootstrap UCL	219.5		
90% Chebyshev(Mean, Sd) UCL	272	95% Chebyshev(Mean, Sd) UCL	333.3
97.5% Chebyshev(Mean, Sd) UCL	418.4	99% Chebyshev(Mean, Sd) UCL	585.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42.6	Mean	151.2
Maximum	269	Median	129.6

SD	95.56	Std. Error of Mean	39.01
Coefficient of Variation	0.632	Skewness	0.348
Mean of logged Data	4.82	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	229.8	95% Adjusted-CLT UCL (Chen-1995)	221.3
		95% Modified-t UCL (Johnson-1978)	230.8

Nonparametric Distribution Free UCLs

95% CLT UCL	215.4	95% Jackknife UCL	229.8
95% Standard Bootstrap UCL	209	95% Bootstrap-t UCL	242.3
95% Hall's Bootstrap UCL	226.5	95% Percentile Bootstrap UCL	211
95% BCA Bootstrap UCL	211		
90% Chebyshev(Mean, Sd) UCL	268.3	95% Chebyshev(Mean, Sd) UCL	321.3
97.5% Chebyshev(Mean, Sd) UCL	394.9	99% Chebyshev(Mean, Sd) UCL	539.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.7	Mean	85.85
Maximum	207	Median	61.1
SD	69.21	Std. Error of Mean	28.25
Coefficient of Variation	0.806	Skewness	1.271
Mean of logged Data	4.181	SD of logged Data	0.817

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	142.8	95% Adjusted-CLT UCL (Chen-1995)	148
		95% Modified-t UCL (Johnson-1978)	145.2

Nonparametric Distribution Free UCLs

95% CLT UCL	132.3	95% Jackknife UCL	142.8
95% Standard Bootstrap UCL	128.4	95% Bootstrap-t UCL	233.8
95% Hall's Bootstrap UCL	355.1	95% Percentile Bootstrap UCL	131.3
95% BCA Bootstrap UCL	138.3		
90% Chebyshev(Mean, Sd) UCL	170.6	95% Chebyshev(Mean, Sd) UCL	209
97.5% Chebyshev(Mean, Sd) UCL	262.3	99% Chebyshev(Mean, Sd) UCL	367

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	17.9	Mean	69.03
Maximum	154	Median	52.3
SD	52.2	Std. Error of Mean	21.31
Coefficient of Variation	0.756	Skewness	0.955
Mean of logged Data	3.979	SD of logged Data	0.804

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	112	95% Adjusted-CLT UCL (Chen-1995)	113
		95% Modified-t UCL (Johnson-1978)	113.4

Nonparametric Distribution Free UCLs

95% CLT UCL	104.1	95% Jackknife UCL	112
95% Standard Bootstrap UCL	100.7	95% Bootstrap-t UCL	145.1
95% Hall's Bootstrap UCL	290.7	95% Percentile Bootstrap UCL	102.9
95% BCA Bootstrap UCL	106.6		
90% Chebyshev(Mean, Sd) UCL	133	95% Chebyshev(Mean, Sd) UCL	161.9
97.5% Chebyshev(Mean, Sd) UCL	202.1	99% Chebyshev(Mean, Sd) UCL	281.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	31	Mean	138.5
Maximum	295	Median	110.9
SD	101.7	Std. Error of Mean	41.53
Coefficient of Variation	0.734	Skewness	0.706
Mean of logged Data	4.666	SD of logged Data	0.84

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	222.2	95% Adjusted-CLT UCL (Chen-1995)	219.6
		95% Modified-t UCL (Johnson-1978)	224.2

Nonparametric Distribution Free UCLs

95% CLT UCL	206.8	95% Jackknife UCL	222.2
95% Standard Bootstrap UCL	202.5	95% Bootstrap-t UCL	254.7
95% Hall's Bootstrap UCL	243.1	95% Percentile Bootstrap UCL	206.1
95% BCA Bootstrap UCL	213.2		
90% Chebyshev(Mean, Sd) UCL	263.1	95% Chebyshev(Mean, Sd) UCL	319.6
97.5% Chebyshev(Mean, Sd) UCL	397.9	99% Chebyshev(Mean, Sd) UCL	551.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.28	Mean	24.93
Maximum	56.1	Median	21.2
SD	18.43	Std. Error of Mean	7.523
Coefficient of Variation	0.739	Skewness	1.011
Mean of logged Data	2.963	SD of logged Data	0.812

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.08	95% Adjusted-CLT UCL (Chen-1995)	40.62
		95% Modified-t UCL (Johnson-1978)	40.6

Nonparametric Distribution Free UCLs

95% CLT UCL	37.3	95% Jackknife UCL	40.08
95% Standard Bootstrap UCL	36.18	95% Bootstrap-t UCL	50.67
95% Hall's Bootstrap UCL	118.8	95% Percentile Bootstrap UCL	36.56
95% BCA Bootstrap UCL	38		
90% Chebyshev(Mean, Sd) UCL	47.49	95% Chebyshev(Mean, Sd) UCL	57.72
97.5% Chebyshev(Mean, Sd) UCL	71.9	99% Chebyshev(Mean, Sd) UCL	99.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	36.3	Mean	183.8
Maximum	409	Median	131.6
SD	148.2	Std. Error of Mean	60.5
Coefficient of Variation	0.806	Skewness	0.797
Mean of logged Data	4.898	SD of logged Data	0.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	305.7	95% Adjusted-CLT UCL (Chen-1995)	304.3
		95% Modified-t UCL (Johnson-1978)	309

Nonparametric Distribution Free UCLs

95% CLT UCL	283.3	95% Jackknife UCL	305.7
95% Standard Bootstrap UCL	273	95% Bootstrap-t UCL	402.3
95% Hall's Bootstrap UCL	409.9	95% Percentile Bootstrap UCL	276.2

95% BCA Bootstrap UCL	291.6		
90% Chebyshev(Mean, Sd) UCL	365.3	95% Chebyshev(Mean, Sd) UCL	447.5
97.5% Chebyshev(Mean, Sd) UCL	561.6	99% Chebyshev(Mean, Sd) UCL	785.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.27	Mean	3.574
Maximum	5.35	Median	4.115
SD	1.979	Std. Error of Mean	0.808
Coefficient of Variation	0.554	Skewness	-0.356
Mean of logged Data	1.1	SD of logged Data	0.694

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.202	95% Adjusted-CLT UCL (Chen-1995)	4.777
		95% Modified-t UCL (Johnson-1978)	5.182

Nonparametric Distribution Free UCLs

95% CLT UCL	4.903	95% Jackknife UCL	5.202
95% Standard Bootstrap UCL	4.768	95% Bootstrap-t UCL	5.136
95% Hall's Bootstrap UCL	4.422	95% Percentile Bootstrap UCL	4.872
95% BCA Bootstrap UCL	4.633		
90% Chebyshev(Mean, Sd) UCL	5.998	95% Chebyshev(Mean, Sd) UCL	7.095
97.5% Chebyshev(Mean, Sd) UCL	8.619	99% Chebyshev(Mean, Sd) UCL	11.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26.8	Mean	102.4
Maximum	244	Median	72.1
SD	82.02	Std. Error of Mean	33.48
Coefficient of Variation	0.801	Skewness	1.207
Mean of logged Data	4.36	SD of logged Data	0.813

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	169.9	95% Adjusted-CLT UCL (Chen-1995)	175.1
		95% Modified-t UCL (Johnson-1978)	172.7

Nonparametric Distribution Free UCLs

95% CLT UCL	157.5	95% Jackknife UCL	169.9
95% Standard Bootstrap UCL	153	95% Bootstrap-t UCL	278.6
95% Hall's Bootstrap UCL	437.5	95% Percentile Bootstrap UCL	157.9
95% BCA Bootstrap UCL	164.6		
90% Chebyshev(Mean, Sd) UCL	202.9	95% Chebyshev(Mean, Sd) UCL	248.4
97.5% Chebyshev(Mean, Sd) UCL	311.5	99% Chebyshev(Mean, Sd) UCL	435.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.76	Mean	14.34
Maximum	20	Median	18.33
SD	7.463	Std. Error of Mean	3.047
Coefficient of Variation	0.52	Skewness	-0.888
Mean of logged Data	2.489	SD of logged Data	0.714

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.48	95% Adjusted-CLT UCL (Chen-1995)	18.17
		95% Modified-t UCL (Johnson-1978)	20.3

Nonparametric Distribution Free UCLs

95% CLT UCL	19.35	95% Jackknife UCL	20.48
95% Standard Bootstrap UCL	18.89	95% Bootstrap-t UCL	19.51
95% Hall's Bootstrap UCL	17.26	95% Percentile Bootstrap UCL	18.93
95% BCA Bootstrap UCL	18.4		
90% Chebyshev(Mean, Sd) UCL	23.48	95% Chebyshev(Mean, Sd) UCL	27.62
97.5% Chebyshev(Mean, Sd) UCL	33.37	99% Chebyshev(Mean, Sd) UCL	44.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.7	Mean	81.62
Maximum	204	Median	47.65
SD	75.32	Std. Error of Mean	30.75
Coefficient of Variation	0.923	Skewness	1.07
Mean of logged Data	4.014	SD of logged Data	0.993

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	143.6	95% Adjusted-CLT UCL (Chen-1995)	146.5
		95% Modified-t UCL (Johnson-1978)	145.8

Nonparametric Distribution Free UCLs

95% CLT UCL	132.2	95% Jackknife UCL	143.6
95% Standard Bootstrap UCL	128.1	95% Bootstrap-t UCL	247.7

95% Hall's Bootstrap UCL	479.6	95% Percentile Bootstrap UCL	133.8
95% BCA Bootstrap UCL	136.8		
90% Chebyshev(Mean, Sd) UCL	173.9	95% Chebyshev(Mean, Sd) UCL	215.6
97.5% Chebyshev(Mean, Sd) UCL	273.6	99% Chebyshev(Mean, Sd) UCL	387.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	36.8	Mean	179.9
Maximum	380	Median	138.4
SD	137.3	Std. Error of Mean	56.05
Coefficient of Variation	0.763	Skewness	0.652
Mean of logged Data	4.9	SD of logged Data	0.886

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	292.8	95% Adjusted-CLT UCL (Chen-1995)	288
		95% Modified-t UCL (Johnson-1978)	295.3

Nonparametric Distribution Free UCLs

95% CLT UCL	272.1	95% Jackknife UCL	292.8
95% Standard Bootstrap UCL	264.4	95% Bootstrap-t UCL	362.3
95% Hall's Bootstrap UCL	365.7	95% Percentile Bootstrap UCL	264.3
95% BCA Bootstrap UCL	272		
90% Chebyshev(Mean, Sd) UCL	348	95% Chebyshev(Mean, Sd) UCL	424.2
97.5% Chebyshev(Mean, Sd) UCL	529.9	99% Chebyshev(Mean, Sd) UCL	737.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.9	Mean	12.8
Maximum	15.2	Median	12.65
SD	1.815	Std. Error of Mean	0.741
Coefficient of Variation	0.142	Skewness	0.219
Mean of logged Data	2.541	SD of logged Data	0.141

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.29	95% Adjusted-CLT UCL (Chen-1995)	14.09
		95% Modified-t UCL (Johnson-1978)	14.3

Nonparametric Distribution Free UCLs

95% CLT UCL	14.02	95% Jackknife UCL	14.29
95% Standard Bootstrap UCL	13.87	95% Bootstrap-t UCL	14.54
95% Hall's Bootstrap UCL	13.54	95% Percentile Bootstrap UCL	13.9
95% BCA Bootstrap UCL	13.95		
90% Chebyshev(Mean, Sd) UCL	15.02	95% Chebyshev(Mean, Sd) UCL	16.03
97.5% Chebyshev(Mean, Sd) UCL	17.43	99% Chebyshev(Mean, Sd) UCL	20.17

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	18.05
Maximum	28.7	Median	15.6
SD	5.917	Std. Error of Mean	2.416
Coefficient of Variation	0.328	Skewness	1.496
Mean of logged Data	2.854	SD of logged Data	0.295

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.92	95% Adjusted-CLT UCL (Chen-1995)	23.6
		95% Modified-t UCL (Johnson-1978)	23.16

Nonparametric Distribution Free UCLs

95% CLT UCL	22.02	95% Jackknife UCL	22.92
95% Standard Bootstrap UCL	21.78	95% Bootstrap-t UCL	37.06
95% Hall's Bootstrap UCL	48.06	95% Percentile Bootstrap UCL	21.83
95% BCA Bootstrap UCL	23.08		
90% Chebyshev(Mean, Sd) UCL	25.3	95% Chebyshev(Mean, Sd) UCL	28.58
97.5% Chebyshev(Mean, Sd) UCL	33.14	99% Chebyshev(Mean, Sd) UCL	42.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	38.3	Mean	59.77
Maximum	106	Median	52.9
SD	26.81	Std. Error of Mean	10.95
Coefficient of Variation	0.449	Skewness	1.129
Mean of logged Data	4.014	SD of logged Data	0.421

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	81.82	95% Adjusted-CLT UCL (Chen-1995)	83.16
		95% Modified-t UCL (Johnson-1978)	82.66

Nonparametric Distribution Free UCLs

95% CLT UCL	77.77	95% Jackknife UCL	81.82
95% Standard Bootstrap UCL	75.88	95% Bootstrap-t UCL	93.81
95% Hall's Bootstrap UCL	81.09	95% Percentile Bootstrap UCL	77.02
95% BCA Bootstrap UCL	77.58		
90% Chebyshev(Mean, Sd) UCL	92.6	95% Chebyshev(Mean, Sd) UCL	107.5
97.5% Chebyshev(Mean, Sd) UCL	128.1	99% Chebyshev(Mean, Sd) UCL	168.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:16:02 AM
From File	Table 1. Parcel Analytical Results (APN32405174) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.93	Mean	1.365
Maximum	2.31	Median	1.145
SD	0.555	Std. Error of Mean	0.227
Coefficient of Variation	0.407	Skewness	1.18
Mean of logged Data	0.249	SD of logged Data	0.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.822	95% Adjusted-CLT UCL (Chen-1995)	1.854
		95% Modified-t UCL (Johnson-1978)	1.84

Nonparametric Distribution Free UCLs

95% CLT UCL	1.738	95% Jackknife UCL	1.822
95% Standard Bootstrap UCL	1.708	95% Bootstrap-t UCL	2.69
95% Hall's Bootstrap UCL	3.39	95% Percentile Bootstrap UCL	1.718
95% BCA Bootstrap UCL	1.785		
90% Chebyshev(Mean, Sd) UCL	2.045	95% Chebyshev(Mean, Sd) UCL	2.353
97.5% Chebyshev(Mean, Sd) UCL	2.78	99% Chebyshev(Mean, Sd) UCL	3.619

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.496	Mean	0.713
Maximum	0.978	Median	0.676
SD	0.232	Std. Error of Mean	0.0948
Coefficient of Variation	0.325	Skewness	0.178
Mean of logged Data	-0.383	SD of logged Data	0.331

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.904	95% Adjusted-CLT UCL (Chen-1995)	0.877
		95% Modified-t UCL (Johnson-1978)	0.905

Nonparametric Distribution Free UCLs

95% CLT UCL	0.869	95% Jackknife UCL	0.904
95% Standard Bootstrap UCL	0.858	95% Bootstrap-t UCL	0.883
95% Hall's Bootstrap UCL	0.798	95% Percentile Bootstrap UCL	0.869
95% BCA Bootstrap UCL	0.862		
90% Chebyshev(Mean, Sd) UCL	0.998	95% Chebyshev(Mean, Sd) UCL	1.126
97.5% Chebyshev(Mean, Sd) UCL	1.305	99% Chebyshev(Mean, Sd) UCL	1.656

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.94	Mean	2.101
Maximum	2.38	Median	2.073
SD	0.152	Std. Error of Mean	0.0622
Coefficient of Variation	0.0726	Skewness	1.414
Mean of logged Data	0.74	SD of logged Data	0.0704

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	2.226	95% Adjusted-CLT UCL (Chen-1995)	2.242
		95% Modified-t UCL (Johnson-1978)	2.232

Nonparametric Distribution Free UCLs

95% CLT UCL	2.203	95% Jackknife UCL	2.226
95% Standard Bootstrap UCL	2.193	95% Bootstrap-t UCL	2.313
95% Hall's Bootstrap UCL	2.679	95% Percentile Bootstrap UCL	2.203
95% BCA Bootstrap UCL	2.222		
90% Chebyshev(Mean, Sd) UCL	2.288	95% Chebyshev(Mean, Sd) UCL	2.372
97.5% Chebyshev(Mean, Sd) UCL	2.489	99% Chebyshev(Mean, Sd) UCL	2.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.54	Mean	13.18
Maximum	20	Median	14
SD	7.179	Std. Error of Mean	2.931
Coefficient of Variation	0.545	Skewness	-0.099
Mean of logged Data	2.429	SD of logged Data	0.624

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.08	95% Adjusted-CLT UCL (Chen-1995)	17.87
		95% Modified-t UCL (Johnson-1978)	19.06

Nonparametric Distribution Free UCLs

95% CLT UCL	18	95% Jackknife UCL	19.08
95% Standard Bootstrap UCL	17.61	95% Bootstrap-t UCL	18.98
95% Hall's Bootstrap UCL	15.84	95% Percentile Bootstrap UCL	17.52
95% BCA Bootstrap UCL	17.67		
90% Chebyshev(Mean, Sd) UCL	21.97	95% Chebyshev(Mean, Sd) UCL	25.95
97.5% Chebyshev(Mean, Sd) UCL	31.48	99% Chebyshev(Mean, Sd) UCL	42.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.11	Mean	18.8
Maximum	31.2	Median	18.4
SD	10.92	Std. Error of Mean	4.458
Coefficient of Variation	0.581	Skewness	0.0594
Mean of logged Data	2.769	SD of logged Data	0.648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.79	95% Adjusted-CLT UCL (Chen-1995)	26.25
		95% Modified-t UCL (Johnson-1978)	27.8

Nonparametric Distribution Free UCLs

95% CLT UCL	26.14	95% Jackknife UCL	27.79
95% Standard Bootstrap UCL	25.52	95% Bootstrap-t UCL	27.97
95% Hall's Bootstrap UCL	22.82	95% Percentile Bootstrap UCL	25.64
95% BCA Bootstrap UCL	25.58		
90% Chebyshev(Mean, Sd) UCL	32.18	95% Chebyshev(Mean, Sd) UCL	38.24
97.5% Chebyshev(Mean, Sd) UCL	46.64	99% Chebyshev(Mean, Sd) UCL	63.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.8	Mean	26.22
Maximum	42.7	Median	25.95

SD	15.53	Std. Error of Mean	6.341
Coefficient of Variation	0.592	Skewness	0.0206
Mean of logged Data	3.093	SD of logged Data	0.666

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.99	95% Adjusted-CLT UCL (Chen-1995)	36.7
		95% Modified-t UCL (Johnson-1978)	39

Nonparametric Distribution Free UCLs

95% CLT UCL	36.65	95% Jackknife UCL	38.99
95% Standard Bootstrap UCL	35.64	95% Bootstrap-t UCL	39.25
95% Hall's Bootstrap UCL	31.56	95% Percentile Bootstrap UCL	35.77
95% BCA Bootstrap UCL	35.77		
90% Chebyshev(Mean, Sd) UCL	45.24	95% Chebyshev(Mean, Sd) UCL	53.86
97.5% Chebyshev(Mean, Sd) UCL	65.82	99% Chebyshev(Mean, Sd) UCL	89.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.19	Mean	14.22
Maximum	22.8	Median	14.16
SD	7.913	Std. Error of Mean	3.231
Coefficient of Variation	0.557	Skewness	0.0202
Mean of logged Data	2.504	SD of logged Data	0.619

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.73	95% Adjusted-CLT UCL (Chen-1995)	19.56
		95% Modified-t UCL (Johnson-1978)	20.73

Nonparametric Distribution Free UCLs

95% CLT UCL	19.53	95% Jackknife UCL	20.73
95% Standard Bootstrap UCL	18.97	95% Bootstrap-t UCL	20.89
95% Hall's Bootstrap UCL	17.01	95% Percentile Bootstrap UCL	19.17
95% BCA Bootstrap UCL	19.17		
90% Chebyshev(Mean, Sd) UCL	23.91	95% Chebyshev(Mean, Sd) UCL	28.3
97.5% Chebyshev(Mean, Sd) UCL	34.39	99% Chebyshev(Mean, Sd) UCL	46.36

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4	Mean	10.29
Maximum	15.7	Median	10.87
SD	5.338	Std. Error of Mean	2.179
Coefficient of Variation	0.519	Skewness	-0.154
Mean of logged Data	2.193	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.68	95% Adjusted-CLT UCL (Chen-1995)	13.72
		95% Modified-t UCL (Johnson-1978)	14.65

Nonparametric Distribution Free UCLs

95% CLT UCL	13.87	95% Jackknife UCL	14.68
95% Standard Bootstrap UCL	13.54	95% Bootstrap-t UCL	14.38
95% Hall's Bootstrap UCL	12.41	95% Percentile Bootstrap UCL	13.52
95% BCA Bootstrap UCL	13.61		
90% Chebyshev(Mean, Sd) UCL	16.82	95% Chebyshev(Mean, Sd) UCL	19.78
97.5% Chebyshev(Mean, Sd) UCL	23.89	99% Chebyshev(Mean, Sd) UCL	31.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.51	Mean	21.18
Maximum	34.6	Median	21.7
SD	12.28	Std. Error of Mean	5.012
Coefficient of Variation	0.58	Skewness	-0.00784
Mean of logged Data	2.885	SD of logged Data	0.659

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.27	95% Adjusted-CLT UCL (Chen-1995)	29.4
		95% Modified-t UCL (Johnson-1978)	31.27

Nonparametric Distribution Free UCLs

95% CLT UCL	29.42	95% Jackknife UCL	31.27
95% Standard Bootstrap UCL	28.77	95% Bootstrap-t UCL	31.84
95% Hall's Bootstrap UCL	25.62	95% Percentile Bootstrap UCL	29.01
95% BCA Bootstrap UCL	28.55		
90% Chebyshev(Mean, Sd) UCL	36.21	95% Chebyshev(Mean, Sd) UCL	43.02
97.5% Chebyshev(Mean, Sd) UCL	52.47	99% Chebyshev(Mean, Sd) UCL	71.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.1	Mean	4.42

Maximum	5.83	Median	4.565
SD	1.137	Std. Error of Mean	0.464
Coefficient of Variation	0.257	Skewness	-0.163
Mean of logged Data	1.457	SD of logged Data	0.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.355	95% Adjusted-CLT UCL (Chen-1995)	5.151
		95% Modified-t UCL (Johnson-1978)	5.35

Nonparametric Distribution Free UCLs

95% CLT UCL	5.183	95% Jackknife UCL	5.355
95% Standard Bootstrap UCL	5.096	95% Bootstrap-t UCL	5.333
95% Hall's Bootstrap UCL	5.035	95% Percentile Bootstrap UCL	5.158
95% BCA Bootstrap UCL	5.05		
90% Chebyshev(Mean, Sd) UCL	5.812	95% Chebyshev(Mean, Sd) UCL	6.443
97.5% Chebyshev(Mean, Sd) UCL	7.319	99% Chebyshev(Mean, Sd) UCL	9.038

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.1	Mean	24.75
Maximum	44.9	Median	23.6
SD	15.42	Std. Error of Mean	6.295
Coefficient of Variation	0.623	Skewness	0.219
Mean of logged Data	3.021	SD of logged Data	0.689

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.43	95% Adjusted-CLT UCL (Chen-1995)	35.71
		95% Modified-t UCL (Johnson-1978)	37.53

Nonparametric Distribution Free UCLs

95% CLT UCL	35.1	95% Jackknife UCL	37.43
95% Standard Bootstrap UCL	34.27	95% Bootstrap-t UCL	39.8
95% Hall's Bootstrap UCL	30.71	95% Percentile Bootstrap UCL	34.4
95% BCA Bootstrap UCL	34.52		
90% Chebyshev(Mean, Sd) UCL	43.64	95% Chebyshev(Mean, Sd) UCL	52.19
97.5% Chebyshev(Mean, Sd) UCL	64.06	99% Chebyshev(Mean, Sd) UCL	87.39

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.21	Mean	1.246
Maximum	1.31	Median	1.238
SD	0.0341	Std. Error of Mean	0.0139
Coefficient of Variation	0.0274	Skewness	1.607
Mean of logged Data	0.219	SD of logged Data	0.027

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.274	95% Adjusted-CLT UCL (Chen-1995)	1.279
		95% Modified-t UCL (Johnson-1978)	1.275

Nonparametric Distribution Free UCLs

95% CLT UCL	1.269	95% Jackknife UCL	1.274
95% Standard Bootstrap UCL	1.267	95% Bootstrap-t UCL	1.297
95% Hall's Bootstrap UCL	1.397	95% Percentile Bootstrap UCL	1.27
95% BCA Bootstrap UCL	1.273		
90% Chebyshev(Mean, Sd) UCL	1.288	95% Chebyshev(Mean, Sd) UCL	1.307
97.5% Chebyshev(Mean, Sd) UCL	1.333	99% Chebyshev(Mean, Sd) UCL	1.384

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.19	Mean	15.85
Maximum	26.7	Median	15.31
SD	9.33	Std. Error of Mean	3.809
Coefficient of Variation	0.589	Skewness	0.0829
Mean of logged Data	2.593	SD of logged Data	0.66

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.53	95% Adjusted-CLT UCL (Chen-1995)	22.25
		95% Modified-t UCL (Johnson-1978)	23.55

Nonparametric Distribution Free UCLs

95% CLT UCL	22.12	95% Jackknife UCL	23.53
95% Standard Bootstrap UCL	21.47	95% Bootstrap-t UCL	23.79
95% Hall's Bootstrap UCL	19.41	95% Percentile Bootstrap UCL	21.65
95% BCA Bootstrap UCL	21.82		
90% Chebyshev(Mean, Sd) UCL	27.28	95% Chebyshev(Mean, Sd) UCL	32.45
97.5% Chebyshev(Mean, Sd) UCL	39.64	99% Chebyshev(Mean, Sd) UCL	53.75

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.93	Mean	2.072
Maximum	4.02	Median	1.585
SD	1.362	Std. Error of Mean	0.556

Coefficient of Variation	0.657	Skewness	0.635
Mean of logged Data	0.539	SD of logged Data	0.677

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.192	95% Adjusted-CLT UCL (Chen-1995)	3.14
		95% Modified-t UCL (Johnson-1978)	3.216

Nonparametric Distribution Free UCLs

95% CLT UCL	2.986	95% Jackknife UCL	3.192
95% Standard Bootstrap UCL	2.922	95% Bootstrap-t UCL	3.58
95% Hall's Bootstrap UCL	3.316	95% Percentile Bootstrap UCL	2.895
95% BCA Bootstrap UCL	2.99		
90% Chebyshev(Mean, Sd) UCL	3.739	95% Chebyshev(Mean, Sd) UCL	4.495
97.5% Chebyshev(Mean, Sd) UCL	5.543	99% Chebyshev(Mean, Sd) UCL	7.603

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.87	Mean	8.552
Maximum	14.1	Median	8.145
SD	5.055	Std. Error of Mean	2.064
Coefficient of Variation	0.591	Skewness	0.0571
Mean of logged Data	1.976	SD of logged Data	0.656

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.71	95% Adjusted-CLT UCL (Chen-1995)	12
		95% Modified-t UCL (Johnson-1978)	12.72

Nonparametric Distribution Free UCLs

95% CLT UCL	11.95	95% Jackknife UCL	12.71
95% Standard Bootstrap UCL	11.63	95% Bootstrap-t UCL	13.35
95% Hall's Bootstrap UCL	10.27	95% Percentile Bootstrap UCL	11.76
95% BCA Bootstrap UCL	11.74		
90% Chebyshev(Mean, Sd) UCL	14.74	95% Chebyshev(Mean, Sd) UCL	17.55
97.5% Chebyshev(Mean, Sd) UCL	21.44	99% Chebyshev(Mean, Sd) UCL	29.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.62	Mean	24.05
Maximum	43.6	Median	23.2
SD	15.02	Std. Error of Mean	6.13
Coefficient of Variation	0.624	Skewness	0.205
Mean of logged Data	2.99	SD of logged Data	0.695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.41	95% Adjusted-CLT UCL (Chen-1995)	34.69
		95% Modified-t UCL (Johnson-1978)	36.49

Nonparametric Distribution Free UCLs

95% CLT UCL	34.14	95% Jackknife UCL	36.41
95% Standard Bootstrap UCL	33.39	95% Bootstrap-t UCL	38.52
95% Hall's Bootstrap UCL	29.85	95% Percentile Bootstrap UCL	33.34
95% BCA Bootstrap UCL	33.4		
90% Chebyshev(Mean, Sd) UCL	42.44	95% Chebyshev(Mean, Sd) UCL	50.77
97.5% Chebyshev(Mean, Sd) UCL	62.34	99% Chebyshev(Mean, Sd) UCL	85.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.69	Mean	0.828
Maximum	1.37	Median	0.733
SD	0.267	Std. Error of Mean	0.109
Coefficient of Variation	0.322	Skewness	2.407
Mean of logged Data	-0.223	SD of logged Data	0.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.047	95% Adjusted-CLT UCL (Chen-1995)	1.121
		95% Modified-t UCL (Johnson-1978)	1.065

Nonparametric Distribution Free UCLs

95% CLT UCL	1.007	95% Jackknife UCL	1.047
95% Standard Bootstrap UCL	0.989	95% Bootstrap-t UCL	2.328
95% Hall's Bootstrap UCL	2.393	95% Percentile Bootstrap UCL	1.04
95% BCA Bootstrap UCL	1.144		
90% Chebyshev(Mean, Sd) UCL	1.154	95% Chebyshev(Mean, Sd) UCL	1.302
97.5% Chebyshev(Mean, Sd) UCL	1.508	99% Chebyshev(Mean, Sd) UCL	1.911

Suggested UCL to Use

95% Student's-t UCL	1.047	or 95% Modified-t UCL	1.065

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.7	Mean	13.28
Maximum	14.5	Median	13.1
SD	0.662	Std. Error of Mean	0.27
Coefficient of Variation	0.0498	Skewness	1.53
Mean of logged Data	2.586	SD of logged Data	0.0486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.83	95% Adjusted-CLT UCL (Chen-1995)	13.91
		95% Modified-t UCL (Johnson-1978)	13.86

Nonparametric Distribution Free UCLs

95% CLT UCL	13.73	95% Jackknife UCL	13.83
95% Standard Bootstrap UCL	13.69	95% Bootstrap-t UCL	14.3
95% Hall's Bootstrap UCL	15.97	95% Percentile Bootstrap UCL	13.73
95% BCA Bootstrap UCL	13.78		
90% Chebyshev(Mean, Sd) UCL	14.09	95% Chebyshev(Mean, Sd) UCL	14.46
97.5% Chebyshev(Mean, Sd) UCL	14.97	99% Chebyshev(Mean, Sd) UCL	15.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.1	Mean	22.77
Maximum	28.3	Median	20.85
SD	4.321	Std. Error of Mean	1.764
Coefficient of Variation	0.19	Skewness	0.827
Mean of logged Data	3.111	SD of logged Data	0.182

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.32	95% Adjusted-CLT UCL (Chen-1995)	26.3
		95% Modified-t UCL (Johnson-1978)	26.42

Nonparametric Distribution Free UCLs

95% CLT UCL	25.67	95% Jackknife UCL	26.32
95% Standard Bootstrap UCL	25.38	95% Bootstrap-t UCL	34.22
95% Hall's Bootstrap UCL	51.61	95% Percentile Bootstrap UCL	25.6
95% BCA Bootstrap UCL	25.78		

90% Chebyshev(Mean, Sd) UCL	28.06	95% Chebyshev(Mean, Sd) UCL	30.46
97.5% Chebyshev(Mean, Sd) UCL	33.78	99% Chebyshev(Mean, Sd) UCL	40.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	46	Mean	61.95
Maximum	79.5	Median	61.75
SD	15.03	Std. Error of Mean	6.135
Coefficient of Variation	0.243	Skewness	0.0472
Mean of logged Data	4.101	SD of logged Data	0.247

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	74.31	95% Adjusted-CLT UCL (Chen-1995)	72.17
		95% Modified-t UCL (Johnson-1978)	74.33

Nonparametric Distribution Free UCLs

95% CLT UCL	72.04	95% Jackknife UCL	74.31
95% Standard Bootstrap UCL	71.11	95% Bootstrap-t UCL	75.86
95% Hall's Bootstrap UCL	68.06	95% Percentile Bootstrap UCL	71.13
95% BCA Bootstrap UCL	71.13		
90% Chebyshev(Mean, Sd) UCL	80.35	95% Chebyshev(Mean, Sd) UCL	88.69
97.5% Chebyshev(Mean, Sd) UCL	100.3	99% Chebyshev(Mean, Sd) UCL	123

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:18:30 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405176) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.77	Mean	1.867
Maximum	4.39	Median	1.52
SD	1.282	Std. Error of Mean	0.523
Coefficient of Variation	0.687	Skewness	2.054
Mean of logged Data	0.473	SD of logged Data	0.571

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.921	95% Adjusted-CLT UCL (Chen-1995)	3.196
		95% Modified-t UCL (Johnson-1978)	2.994

Nonparametric Distribution Free UCLs

95% CLT UCL	2.727	95% Jackknife UCL	2.921
95% Standard Bootstrap UCL	2.641	95% Bootstrap-t UCL	4.61
95% Hall's Bootstrap UCL	7.037	95% Percentile Bootstrap UCL	2.803
95% BCA Bootstrap UCL	2.965		
90% Chebyshev(Mean, Sd) UCL	3.436	95% Chebyshev(Mean, Sd) UCL	4.148
97.5% Chebyshev(Mean, Sd) UCL	5.134	99% Chebyshev(Mean, Sd) UCL	7.073

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.391	Mean	2.189
Maximum	9.22	Median	0.713
SD	3.47	Std. Error of Mean	1.417
Coefficient of Variation	1.585	Skewness	2.372
Mean of logged Data	0.0635	SD of logged Data	1.16

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.043	95% Adjusted-CLT UCL (Chen-1995)	5.985
		95% Modified-t UCL (Johnson-1978)	5.272

Nonparametric Distribution Free UCLs

95% CLT UCL	4.519	95% Jackknife UCL	5.043
95% Standard Bootstrap UCL	4.323	95% Bootstrap-t UCL	34.95
95% Hall's Bootstrap UCL	19.86	95% Percentile Bootstrap UCL	4.871
95% BCA Bootstrap UCL	5.231		
90% Chebyshev(Mean, Sd) UCL	6.439	95% Chebyshev(Mean, Sd) UCL	8.364
97.5% Chebyshev(Mean, Sd) UCL	11.04	99% Chebyshev(Mean, Sd) UCL	16.28

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.105	Mean	8.757
Maximum	38.9	Median	2.645
SD	14.79	Std. Error of Mean	6.036
Coefficient of Variation	1.688	Skewness	2.436
Mean of logged Data	1.42	SD of logged Data	1.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	20.92	95% Adjusted-CLT UCL (Chen-1995)	25.1
		95% Modified-t UCL (Johnson-1978)	21.92

Nonparametric Distribution Free UCLs

95% CLT UCL	18.69	95% Jackknife UCL	20.92
95% Standard Bootstrap UCL	17.87	95% Bootstrap-t UCL	345.7
95% Hall's Bootstrap UCL	194.6	95% Percentile Bootstrap UCL	20.59
95% BCA Bootstrap UCL	26.72		
90% Chebyshev(Mean, Sd) UCL	26.86	95% Chebyshev(Mean, Sd) UCL	35.07
97.5% Chebyshev(Mean, Sd) UCL	46.45	99% Chebyshev(Mean, Sd) UCL	68.81

Suggested UCL to Use

95% Hall's Bootstrap UCL	194.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.11	Mean	51.81
Maximum	231	Median	20.1
SD	88.17	Std. Error of Mean	36
Coefficient of Variation	1.702	Skewness	2.401
Mean of logged Data	3.068	SD of logged Data	1.327

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	124.3	95% Adjusted-CLT UCL (Chen-1995)	148.7
		95% Modified-t UCL (Johnson-1978)	130.2

Nonparametric Distribution Free UCLs

95% CLT UCL	111	95% Jackknife UCL	124.3
95% Standard Bootstrap UCL	106.9	95% Bootstrap-t UCL	560.4
95% Hall's Bootstrap UCL	557.5	95% Percentile Bootstrap UCL	120.8
95% BCA Bootstrap UCL	125.3		
90% Chebyshev(Mean, Sd) UCL	159.8	95% Chebyshev(Mean, Sd) UCL	208.7
97.5% Chebyshev(Mean, Sd) UCL	276.6	99% Chebyshev(Mean, Sd) UCL	410

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.7	Mean	67.22
Maximum	294	Median	28.05
SD	111.7	Std. Error of Mean	45.59
Coefficient of Variation	1.661	Skewness	2.393
Mean of logged Data	3.365	SD of logged Data	1.31

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	159.1	95% Adjusted-CLT UCL (Chen-1995)	189.8
		95% Modified-t UCL (Johnson-1978)	166.5

Nonparametric Distribution Free UCLs

95% CLT UCL	142.2	95% Jackknife UCL	159.1
95% Standard Bootstrap UCL	135.4	95% Bootstrap-t UCL	626.6
95% Hall's Bootstrap UCL	715.8	95% Percentile Bootstrap UCL	150.4
95% BCA Bootstrap UCL	163		
90% Chebyshev(Mean, Sd) UCL	204	95% Chebyshev(Mean, Sd) UCL	265.9
97.5% Chebyshev(Mean, Sd) UCL	351.9	99% Chebyshev(Mean, Sd) UCL	520.8

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.22	Mean	67.02

Maximum	265	Median	33.95
SD	97.98	Std. Error of Mean	40
Coefficient of Variation	1.462	Skewness	2.339
Mean of logged Data	3.551	SD of logged Data	1.169

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	147.6	95% Adjusted-CLT UCL (Chen-1995)	173.6
		95% Modified-t UCL (Johnson-1978)	154

Nonparametric Distribution Free UCLs

95% CLT UCL	132.8	95% Jackknife UCL	147.6
95% Standard Bootstrap UCL	127.9	95% Bootstrap-t UCL	445
95% Hall's Bootstrap UCL	531.1	95% Percentile Bootstrap UCL	141.3
95% BCA Bootstrap UCL	153.5		
90% Chebyshev(Mean, Sd) UCL	187	95% Chebyshev(Mean, Sd) UCL	241.4
97.5% Chebyshev(Mean, Sd) UCL	316.8	99% Chebyshev(Mean, Sd) UCL	465

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.55	Mean	42.22
Maximum	178	Median	18.1
SD	66.92	Std. Error of Mean	27.32
Coefficient of Variation	1.585	Skewness	2.384
Mean of logged Data	3.002	SD of logged Data	1.211

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	97.27	95% Adjusted-CLT UCL (Chen-1995)	115.6

		95% Modified-t UCL (Johnson-1978)	101.7

Nonparametric Distribution Free UCLs

95% CLT UCL	87.15	95% Jackknife UCL	97.27
95% Standard Bootstrap UCL	83.27	95% Bootstrap-t UCL	394.9
95% Hall's Bootstrap UCL	388.9	95% Percentile Bootstrap UCL	94.35
95% BCA Bootstrap UCL	120.9		
90% Chebyshev(Mean, Sd) UCL	124.2	95% Chebyshev(Mean, Sd) UCL	161.3
97.5% Chebyshev(Mean, Sd) UCL	212.8	99% Chebyshev(Mean, Sd) UCL	314

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.99	Mean	34.64
Maximum	149	Median	14.6
SD	56.36	Std. Error of Mean	23.01
Coefficient of Variation	1.627	Skewness	2.384
Mean of logged Data	2.742	SD of logged Data	1.275

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	81	95% Adjusted-CLT UCL (Chen-1995)	96.42
		95% Modified-t UCL (Johnson-1978)	84.74

Nonparametric Distribution Free UCLs

95% CLT UCL	72.49	95% Jackknife UCL	81
95% Standard Bootstrap UCL	68.97	95% Bootstrap-t UCL	312.4
95% Hall's Bootstrap UCL	335.7	95% Percentile Bootstrap UCL	78.58
95% BCA Bootstrap UCL	82.87		
90% Chebyshev(Mean, Sd) UCL	103.7	95% Chebyshev(Mean, Sd) UCL	134.9
97.5% Chebyshev(Mean, Sd) UCL	178.3	99% Chebyshev(Mean, Sd) UCL	263.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.01	Mean	62.24
Maximum	267	Median	27.3
SD	100.9	Std. Error of Mean	41.19
Coefficient of Variation	1.621	Skewness	2.386
Mean of logged Data	3.335	SD of logged Data	1.27

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	145.2	95% Adjusted-CLT UCL (Chen-1995)	172.9
		95% Modified-t UCL (Johnson-1978)	151.9

Nonparametric Distribution Free UCLs

95% CLT UCL	130	95% Jackknife UCL	145.2
95% Standard Bootstrap UCL	123.8	95% Bootstrap-t UCL	545.5
95% Hall's Bootstrap UCL	621.9	95% Percentile Bootstrap UCL	141.4
95% BCA Bootstrap UCL	149.3		
90% Chebyshev(Mean, Sd) UCL	185.8	95% Chebyshev(Mean, Sd) UCL	241.8
97.5% Chebyshev(Mean, Sd) UCL	319.5	99% Chebyshev(Mean, Sd) UCL	472.1

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.24	Mean	12.33
Maximum	50.3	Median	5.16
SD	18.65	Std. Error of Mean	7.614
Coefficient of Variation	1.512	Skewness	2.42
Mean of logged Data	1.914	SD of logged Data	1.025

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.68	95% Adjusted-CLT UCL (Chen-1995)	32.89
		95% Modified-t UCL (Johnson-1978)	28.93

Nonparametric Distribution Free UCLs

95% CLT UCL	24.86	95% Jackknife UCL	27.68
95% Standard Bootstrap UCL	24.01	95% Bootstrap-t UCL	164.2
95% Hall's Bootstrap UCL	121.6	95% Percentile Bootstrap UCL	27.17
95% BCA Bootstrap UCL	27.98		
90% Chebyshev(Mean, Sd) UCL	35.18	95% Chebyshev(Mean, Sd) UCL	45.52
97.5% Chebyshev(Mean, Sd) UCL	59.88	99% Chebyshev(Mean, Sd) UCL	88.09

Suggested UCL to Use

95% Hall's Bootstrap UCL	121.6

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.28	Mean	77.8
Maximum	334	Median	31.65
SD	126.3	Std. Error of Mean	51.58
Coefficient of Variation	1.624	Skewness	2.379
Mean of logged Data	3.551	SD of logged Data	1.274

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	181.7	95% Adjusted-CLT UCL (Chen-1995)	216.2
		95% Modified-t UCL (Johnson-1978)	190.1

Nonparametric Distribution Free UCLs

95% CLT UCL	162.6	95% Jackknife UCL	181.7
95% Standard Bootstrap UCL	154.9	95% Bootstrap-t UCL	722
95% Hall's Bootstrap UCL	658.3	95% Percentile Bootstrap UCL	172.5
95% BCA Bootstrap UCL	188.4		
90% Chebyshev(Mean, Sd) UCL	232.5	95% Chebyshev(Mean, Sd) UCL	302.6
97.5% Chebyshev(Mean, Sd) UCL	399.9	99% Chebyshev(Mean, Sd) UCL	591

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.924	Mean	2.329
Maximum	7.84	Median	1.305
SD	2.704	Std. Error of Mean	1.104
Coefficient of Variation	1.161	Skewness	2.432
Mean of logged Data	0.506	SD of logged Data	0.773

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.553	95% Adjusted-CLT UCL (Chen-1995)	5.316
		95% Modified-t UCL (Johnson-1978)	4.736

Nonparametric Distribution Free UCLs

95% CLT UCL	4.145	95% Jackknife UCL	4.553
95% Standard Bootstrap UCL	3.993	95% Bootstrap-t UCL	206.3
95% Hall's Bootstrap UCL	73.31	95% Percentile Bootstrap UCL	4.504
95% BCA Bootstrap UCL	4.573		
90% Chebyshev(Mean, Sd) UCL	5.641	95% Chebyshev(Mean, Sd) UCL	7.141
97.5% Chebyshev(Mean, Sd) UCL	9.223	99% Chebyshev(Mean, Sd) UCL	13.31

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.141

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.56	Mean	49.73
Maximum	213	Median	20.85
SD	80.47	Std. Error of Mean	32.85
Coefficient of Variation	1.618	Skewness	2.384
Mean of logged Data	3.115	SD of logged Data	1.266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	115.9	95% Adjusted-CLT UCL (Chen-1995)	137.9
		95% Modified-t UCL (Johnson-1978)	121.3

Nonparametric Distribution Free UCLs

95% CLT UCL	103.8	95% Jackknife UCL	115.9
95% Standard Bootstrap UCL	99.53	95% Bootstrap-t UCL	466.1
95% Hall's Bootstrap UCL	469.6	95% Percentile Bootstrap UCL	111.9
95% BCA Bootstrap UCL	118.3		
90% Chebyshev(Mean, Sd) UCL	148.3	95% Chebyshev(Mean, Sd) UCL	192.9
97.5% Chebyshev(Mean, Sd) UCL	254.9	99% Chebyshev(Mean, Sd) UCL	376.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.23	Mean	2.967
Maximum	5.35	Median	2.225
SD	1.823	Std. Error of Mean	0.744
Coefficient of Variation	0.614	Skewness	0.777
Mean of logged Data	0.932	SD of logged Data	0.608

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.466	95% Adjusted-CLT UCL (Chen-1995)	4.443
		95% Modified-t UCL (Johnson-1978)	4.505

Nonparametric Distribution Free UCLs

95% CLT UCL	4.191	95% Jackknife UCL	4.466
95% Standard Bootstrap UCL	4.09	95% Bootstrap-t UCL	7.565
95% Hall's Bootstrap UCL	17.53	95% Percentile Bootstrap UCL	4.158
95% BCA Bootstrap UCL	4.255		
90% Chebyshev(Mean, Sd) UCL	5.199	95% Chebyshev(Mean, Sd) UCL	6.21
97.5% Chebyshev(Mean, Sd) UCL	7.613	99% Chebyshev(Mean, Sd) UCL	10.37

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.05	Mean	38.86
Maximum	175	Median	14.05
SD	67	Std. Error of Mean	27.35
Coefficient of Variation	1.724	Skewness	2.4
Mean of logged Data	2.751	SD of logged Data	1.347

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	93.98	95% Adjusted-CLT UCL (Chen-1995)	112.5
		95% Modified-t UCL (Johnson-1978)	98.44

Nonparametric Distribution Free UCLs

95% CLT UCL	83.85	95% Jackknife UCL	93.98
95% Standard Bootstrap UCL	78.99	95% Bootstrap-t UCL	443.1
95% Hall's Bootstrap UCL	410.5	95% Percentile Bootstrap UCL	89.85

95% BCA Bootstrap UCL	95.68		
90% Chebyshev(Mean, Sd) UCL	120.9	95% Chebyshev(Mean, Sd) UCL	158.1
97.5% Chebyshev(Mean, Sd) UCL	209.7	99% Chebyshev(Mean, Sd) UCL	311

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.04	Mean	78.14
Maximum	334	Median	34
SD	126.1	Std. Error of Mean	51.49
Coefficient of Variation	1.614	Skewness	2.382
Mean of logged Data	3.567	SD of logged Data	1.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	181.9	95% Adjusted-CLT UCL (Chen-1995)	216.3
		95% Modified-t UCL (Johnson-1978)	190.2

Nonparametric Distribution Free UCLs

95% CLT UCL	162.8	95% Jackknife UCL	181.9
95% Standard Bootstrap UCL	156.1	95% Bootstrap-t UCL	656.9
95% Hall's Bootstrap UCL	750.5	95% Percentile Bootstrap UCL	176.5
95% BCA Bootstrap UCL	185.9		
90% Chebyshev(Mean, Sd) UCL	232.6	95% Chebyshev(Mean, Sd) UCL	302.6
97.5% Chebyshev(Mean, Sd) UCL	399.7	99% Chebyshev(Mean, Sd) UCL	590.4

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.2	Mean	15.5
Maximum	17.1	Median	15.65
SD	1.319	Std. Error of Mean	0.539
Coefficient of Variation	0.0851	Skewness	-0.995
Mean of logged Data	2.738	SD of logged Data	0.0881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.59	95% Adjusted-CLT UCL (Chen-1995)	16.15
		95% Modified-t UCL (Johnson-1978)	16.55

Nonparametric Distribution Free UCLs

95% CLT UCL	16.39	95% Jackknife UCL	16.59
95% Standard Bootstrap UCL	16.29	95% Bootstrap-t UCL	16.34
95% Hall's Bootstrap UCL	16.2	95% Percentile Bootstrap UCL	16.27
95% BCA Bootstrap UCL	16.13		
90% Chebyshev(Mean, Sd) UCL	17.12	95% Chebyshev(Mean, Sd) UCL	17.85
97.5% Chebyshev(Mean, Sd) UCL	18.86	99% Chebyshev(Mean, Sd) UCL	20.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	25.5	Mean	30.97
Maximum	36.8	Median	30.4
SD	4.836	Std. Error of Mean	1.974
Coefficient of Variation	0.156	Skewness	0.157
Mean of logged Data	3.423	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.95	95% Adjusted-CLT UCL (Chen-1995)	34.35
		95% Modified-t UCL (Johnson-1978)	34.97

Nonparametric Distribution Free UCLs

95% CLT UCL	34.21	95% Jackknife UCL	34.95
95% Standard Bootstrap UCL	33.93	95% Bootstrap-t UCL	34.72
95% Hall's Bootstrap UCL	33.45	95% Percentile Bootstrap UCL	33.93
95% BCA Bootstrap UCL	34.17		
90% Chebyshev(Mean, Sd) UCL	36.89	95% Chebyshev(Mean, Sd) UCL	39.57
97.5% Chebyshev(Mean, Sd) UCL	43.3	99% Chebyshev(Mean, Sd) UCL	50.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.3	Mean	63.15
Maximum	74.5	Median	63.65
SD	11.13	Std. Error of Mean	4.543
Coefficient of Variation	0.176	Skewness	-0.0359
Mean of logged Data	4.132	SD of logged Data	0.178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	72.3	95% Adjusted-CLT UCL (Chen-1995)	70.55
		95% Modified-t UCL (Johnson-1978)	72.29

Nonparametric Distribution Free UCLs

95% CLT UCL	70.62	95% Jackknife UCL	72.3
95% Standard Bootstrap UCL	69.99	95% Bootstrap-t UCL	72.23
95% Hall's Bootstrap UCL	67.06	95% Percentile Bootstrap UCL	70.18
95% BCA Bootstrap UCL	69.98		
90% Chebyshev(Mean, Sd) UCL	76.78	95% Chebyshev(Mean, Sd) UCL	82.95

97.5% Chebyshev(Mean, Sd) UCL	91.52	99% Chebyshev(Mean, Sd) UCL	108.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:20:19 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405177 - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.38	Mean	0.595
Maximum	0.837	Median	0.554
SD	0.163	Std. Error of Mean	0.0664
Coefficient of Variation	0.273	Skewness	0.395
Mean of logged Data	-0.551	SD of logged Data	0.277

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.729	95% Adjusted-CLT UCL (Chen-1995)	0.716
		95% Modified-t UCL (Johnson-1978)	0.731

Nonparametric Distribution Free UCLs

95% CLT UCL	0.704	95% Jackknife UCL	0.729
95% Standard Bootstrap UCL	0.691	95% Bootstrap-t UCL	0.802
95% Hall's Bootstrap UCL	0.877	95% Percentile Bootstrap UCL	0.696
95% BCA Bootstrap UCL	0.705		
90% Chebyshev(Mean, Sd) UCL	0.794	95% Chebyshev(Mean, Sd) UCL	0.885
97.5% Chebyshev(Mean, Sd) UCL	1.01	99% Chebyshev(Mean, Sd) UCL	1.256

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.85	Mean	2.327
Maximum	3.21	Median	2.158
SD	0.477	Std. Error of Mean	0.195
Coefficient of Variation	0.205	Skewness	1.552
Mean of logged Data	0.829	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.719	95% Adjusted-CLT UCL (Chen-1995)	2.779
		95% Modified-t UCL (Johnson-1978)	2.74

Nonparametric Distribution Free UCLs

95% CLT UCL	2.647	95% Jackknife UCL	2.719
95% Standard Bootstrap UCL	2.624	95% Bootstrap-t UCL	3.28
95% Hall's Bootstrap UCL	4.599	95% Percentile Bootstrap UCL	2.675
95% BCA Bootstrap UCL	2.727		
90% Chebyshev(Mean, Sd) UCL	2.911	95% Chebyshev(Mean, Sd) UCL	3.176
97.5% Chebyshev(Mean, Sd) UCL	3.544	99% Chebyshev(Mean, Sd) UCL	4.266

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6	Mean	14.72
Maximum	25.2	Median	14.6
SD	6.576	Std. Error of Mean	2.685
Coefficient of Variation	0.447	Skewness	0.453
Mean of logged Data	2.596	SD of logged Data	0.492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	20.13	95% Adjusted-CLT UCL (Chen-1995)	19.66
		95% Modified-t UCL (Johnson-1978)	20.21

Nonparametric Distribution Free UCLs

95% CLT UCL	19.13	95% Jackknife UCL	20.13
95% Standard Bootstrap UCL	18.71	95% Bootstrap-t UCL	20.89
95% Hall's Bootstrap UCL	20.91	95% Percentile Bootstrap UCL	18.85
95% BCA Bootstrap UCL	19.2		
90% Chebyshev(Mean, Sd) UCL	22.77	95% Chebyshev(Mean, Sd) UCL	26.42
97.5% Chebyshev(Mean, Sd) UCL	31.48	99% Chebyshev(Mean, Sd) UCL	41.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.35	Mean	19.48
Maximum	33.9	Median	19.35
SD	8.99	Std. Error of Mean	3.67
Coefficient of Variation	0.462	Skewness	0.572
Mean of logged Data	2.874	SD of logged Data	0.492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.87	95% Adjusted-CLT UCL (Chen-1995)	26.43
		95% Modified-t UCL (Johnson-1978)	27.01

Nonparametric Distribution Free UCLs

95% CLT UCL	25.51	95% Jackknife UCL	26.87
95% Standard Bootstrap UCL	24.97	95% Bootstrap-t UCL	28.39
95% Hall's Bootstrap UCL	28.04	95% Percentile Bootstrap UCL	25.3
95% BCA Bootstrap UCL	25.38		
90% Chebyshev(Mean, Sd) UCL	30.49	95% Chebyshev(Mean, Sd) UCL	35.47
97.5% Chebyshev(Mean, Sd) UCL	42.4	99% Chebyshev(Mean, Sd) UCL	55.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.2	Mean	24.4
Maximum	42.4	Median	23.85
SD	11.74	Std. Error of Mean	4.793
Coefficient of Variation	0.481	Skewness	0.443
Mean of logged Data	3.089	SD of logged Data	0.52

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.06	95% Adjusted-CLT UCL (Chen-1995)	33.21
		95% Modified-t UCL (Johnson-1978)	34.2

Nonparametric Distribution Free UCLs

95% CLT UCL	32.28	95% Jackknife UCL	34.06
95% Standard Bootstrap UCL	31.86	95% Bootstrap-t UCL	36.93
95% Hall's Bootstrap UCL	33.3	95% Percentile Bootstrap UCL	31.88
95% BCA Bootstrap UCL	32.22		
90% Chebyshev(Mean, Sd) UCL	38.78	95% Chebyshev(Mean, Sd) UCL	45.29
97.5% Chebyshev(Mean, Sd) UCL	54.33	99% Chebyshev(Mean, Sd) UCL	72.09

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.05	Mean	13.37
Maximum	23.1	Median	12.4
SD	6.01	Std. Error of Mean	2.454
Coefficient of Variation	0.45	Skewness	0.674
Mean of logged Data	2.505	SD of logged Data	0.467

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.31	95% Adjusted-CLT UCL (Chen-1995)	18.12
		95% Modified-t UCL (Johnson-1978)	18.42

Nonparametric Distribution Free UCLs

95% CLT UCL	17.4	95% Jackknife UCL	18.31
95% Standard Bootstrap UCL	17.12	95% Bootstrap-t UCL	19.63
95% Hall's Bootstrap UCL	19.79	95% Percentile Bootstrap UCL	17.22
95% BCA Bootstrap UCL	17.54		
90% Chebyshev(Mean, Sd) UCL	20.73	95% Chebyshev(Mean, Sd) UCL	24.06
97.5% Chebyshev(Mean, Sd) UCL	28.69	99% Chebyshev(Mean, Sd) UCL	37.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.83	Mean	11.04
Maximum	18.4	Median	10.05
SD	5.043	Std. Error of Mean	2.059
Coefficient of Variation	0.457	Skewness	0.396
Mean of logged Data	2.307	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.18	95% Adjusted-CLT UCL (Chen-1995)	14.78
		95% Modified-t UCL (Johnson-1978)	15.24

Nonparametric Distribution Free UCLs

95% CLT UCL	14.42	95% Jackknife UCL	15.18

95% Standard Bootstrap UCL	14.14	95% Bootstrap-t UCL	15.5
95% Hall's Bootstrap UCL	15.89	95% Percentile Bootstrap UCL	13.97
95% BCA Bootstrap UCL	14.02		
90% Chebyshev(Mean, Sd) UCL	17.21	95% Chebyshev(Mean, Sd) UCL	20.01
97.5% Chebyshev(Mean, Sd) UCL	23.89	99% Chebyshev(Mean, Sd) UCL	31.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.89	Mean	19.43
Maximum	33.1	Median	18.55
SD	9.463	Std. Error of Mean	3.863
Coefficient of Variation	0.487	Skewness	0.315
Mean of logged Data	2.856	SD of logged Data	0.533

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.22	95% Adjusted-CLT UCL (Chen-1995)	26.32
		95% Modified-t UCL (Johnson-1978)	27.3

Nonparametric Distribution Free UCLs

95% CLT UCL	25.79	95% Jackknife UCL	27.22
95% Standard Bootstrap UCL	25.28	95% Bootstrap-t UCL	28.1
95% Hall's Bootstrap UCL	26.36	95% Percentile Bootstrap UCL	24.93
95% BCA Bootstrap UCL	25.3		
90% Chebyshev(Mean, Sd) UCL	31.02	95% Chebyshev(Mean, Sd) UCL	36.27
97.5% Chebyshev(Mean, Sd) UCL	43.56	99% Chebyshev(Mean, Sd) UCL	57.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.62	Mean	4.249
Maximum	6.59	Median	4.04
SD	1.391	Std. Error of Mean	0.568
Coefficient of Variation	0.327	Skewness	0.875
Mean of logged Data	1.404	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.394	95% Adjusted-CLT UCL (Chen-1995)	5.4
		95% Modified-t UCL (Johnson-1978)	5.427

Nonparametric Distribution Free UCLs

95% CLT UCL	5.183	95% Jackknife UCL	5.394
95% Standard Bootstrap UCL	5.09	95% Bootstrap-t UCL	5.908
95% Hall's Bootstrap UCL	11.8	95% Percentile Bootstrap UCL	5.167
95% BCA Bootstrap UCL	5.24		
90% Chebyshev(Mean, Sd) UCL	5.953	95% Chebyshev(Mean, Sd) UCL	6.725
97.5% Chebyshev(Mean, Sd) UCL	7.796	99% Chebyshev(Mean, Sd) UCL	9.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.8	Mean	26.33
Maximum	45	Median	24.75
SD	14.28	Std. Error of Mean	5.832
Coefficient of Variation	0.542	Skewness	0.264
Mean of logged Data	3.128	SD of logged Data	0.609

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.08	95% Adjusted-CLT UCL (Chen-1995)	36.6
		95% Modified-t UCL (Johnson-1978)	38.19

Nonparametric Distribution Free UCLs

95% CLT UCL	35.93	95% Jackknife UCL	38.08
95% Standard Bootstrap UCL	35.25	95% Bootstrap-t UCL	41.28
95% Hall's Bootstrap UCL	42.15	95% Percentile Bootstrap UCL	35.28
95% BCA Bootstrap UCL	35.28		
90% Chebyshev(Mean, Sd) UCL	43.83	95% Chebyshev(Mean, Sd) UCL	51.75
97.5% Chebyshev(Mean, Sd) UCL	62.75	99% Chebyshev(Mean, Sd) UCL	84.36

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.67	Mean	15.65
Maximum	28.2	Median	14.5
SD	7.475	Std. Error of Mean	3.052
Coefficient of Variation	0.478	Skewness	0.841
Mean of logged Data	2.652	SD of logged Data	0.494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.79	95% Adjusted-CLT UCL (Chen-1995)	21.78
		95% Modified-t UCL (Johnson-1978)	21.97

Nonparametric Distribution Free UCLs

95% CLT UCL	20.66	95% Jackknife UCL	21.79
95% Standard Bootstrap UCL	20.29	95% Bootstrap-t UCL	23.27
95% Hall's Bootstrap UCL	27.89	95% Percentile Bootstrap UCL	20.57
95% BCA Bootstrap UCL	21.03		
90% Chebyshev(Mean, Sd) UCL	24.8	95% Chebyshev(Mean, Sd) UCL	28.95
97.5% Chebyshev(Mean, Sd) UCL	34.7	99% Chebyshev(Mean, Sd) UCL	46.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.62	Mean	12.15
Maximum	21.9	Median	11.05
SD	7.049	Std. Error of Mean	2.878
Coefficient of Variation	0.58	Skewness	0.423
Mean of logged Data	2.338	SD of logged Data	0.639

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.95	95% Adjusted-CLT UCL (Chen-1995)	17.42
		95% Modified-t UCL (Johnson-1978)	18.03

Nonparametric Distribution Free UCLs

95% CLT UCL	16.88	95% Jackknife UCL	17.95
95% Standard Bootstrap UCL	16.51	95% Bootstrap-t UCL	21.11
95% Hall's Bootstrap UCL	23.12	95% Percentile Bootstrap UCL	16.67
95% BCA Bootstrap UCL	16.9		
90% Chebyshev(Mean, Sd) UCL	20.78	95% Chebyshev(Mean, Sd) UCL	24.69
97.5% Chebyshev(Mean, Sd) UCL	30.12	99% Chebyshev(Mean, Sd) UCL	40.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	9.45	Mean	25.38
Maximum	43.3	Median	24.4
SD	13.39	Std. Error of Mean	5.466
Coefficient of Variation	0.528	Skewness	0.207
Mean of logged Data	3.098	SD of logged Data	0.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.39	95% Adjusted-CLT UCL (Chen-1995)	34.86
		95% Modified-t UCL (Johnson-1978)	36.47

Nonparametric Distribution Free UCLs

95% CLT UCL	34.37	95% Jackknife UCL	36.39
95% Standard Bootstrap UCL	33.69	95% Bootstrap-t UCL	37.25
95% Hall's Bootstrap UCL	37.35	95% Percentile Bootstrap UCL	33.72
95% BCA Bootstrap UCL	33.72		
90% Chebyshev(Mean, Sd) UCL	41.77	95% Chebyshev(Mean, Sd) UCL	49.2
97.5% Chebyshev(Mean, Sd) UCL	59.51	99% Chebyshev(Mean, Sd) UCL	79.76

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.3	Mean	10.92
Maximum	12.1	Median	10.8
SD	0.618	Std. Error of Mean	0.252
Coefficient of Variation	0.0566	Skewness	1.765
Mean of logged Data	2.389	SD of logged Data	0.0549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	11.42	95% Adjusted-CLT UCL (Chen-1995)	11.53
		95% Modified-t UCL (Johnson-1978)	11.46

Nonparametric Distribution Free UCLs

95% CLT UCL	11.33	95% Jackknife UCL	11.42
95% Standard Bootstrap UCL	11.29	95% Bootstrap-t UCL	11.88
95% Hall's Bootstrap UCL	13.46	95% Percentile Bootstrap UCL	11.33
95% BCA Bootstrap UCL	11.45		
90% Chebyshev(Mean, Sd) UCL	11.67	95% Chebyshev(Mean, Sd) UCL	12.02
97.5% Chebyshev(Mean, Sd) UCL	12.49	99% Chebyshev(Mean, Sd) UCL	13.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	19.9	Mean	22.58
Maximum	32.4	Median	20.8
SD	4.86	Std. Error of Mean	1.984
Coefficient of Variation	0.215	Skewness	2.338
Mean of logged Data	3.101	SD of logged Data	0.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.58	95% Adjusted-CLT UCL (Chen-1995)	27.87
		95% Modified-t UCL (Johnson-1978)	26.9

Nonparametric Distribution Free UCLs

95% CLT UCL	25.85	95% Jackknife UCL	26.58
95% Standard Bootstrap UCL	25.6	95% Bootstrap-t UCL	45.23
95% Hall's Bootstrap UCL	41.41	95% Percentile Bootstrap UCL	26.35
95% BCA Bootstrap UCL	26.75		
90% Chebyshev(Mean, Sd) UCL	28.54	95% Chebyshev(Mean, Sd) UCL	31.23
97.5% Chebyshev(Mean, Sd) UCL	34.97	99% Chebyshev(Mean, Sd) UCL	42.32

Suggested UCL to Use

95% Student's-t UCL	26.58	or 95% Modified-t UCL	26.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	33.9	Mean	42.78
Maximum	53	Median	42.5
SD	7.008	Std. Error of Mean	2.861
Coefficient of Variation	0.164	Skewness	0.262
Mean of logged Data	3.745	SD of logged Data	0.164

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.55	95% Adjusted-CLT UCL (Chen-1995)	47.82
		95% Modified-t UCL (Johnson-1978)	48.6

Nonparametric Distribution Free UCLs

95% CLT UCL	47.49	95% Jackknife UCL	48.55
95% Standard Bootstrap UCL	47.16	95% Bootstrap-t UCL	49.45
95% Hall's Bootstrap UCL	47.01	95% Percentile Bootstrap UCL	47.15
95% BCA Bootstrap UCL	47.28		
90% Chebyshev(Mean, Sd) UCL	51.37	95% Chebyshev(Mean, Sd) UCL	55.25
97.5% Chebyshev(Mean, Sd) UCL	60.65	99% Chebyshev(Mean, Sd) UCL	71.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:22:25 AM
From File	Table 1. APN 32405178 - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.35	Mean	2.257
Maximum	7.02	Median	1.123
SD	2.63	Std. Error of Mean	1.074
Coefficient of Variation	1.165	Skewness	1.507
Mean of logged Data	0.194	SD of logged Data	1.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.421	95% Adjusted-CLT UCL (Chen-1995)	4.729
		95% Modified-t UCL (Johnson-1978)	4.531

Nonparametric Distribution Free UCLs

95% CLT UCL	4.023	95% Jackknife UCL	4.421
95% Standard Bootstrap UCL	3.857	95% Bootstrap-t UCL	7.725
95% Hall's Bootstrap UCL	13.2	95% Percentile Bootstrap UCL	3.926
95% BCA Bootstrap UCL	4.738		
90% Chebyshev(Mean, Sd) UCL	5.478	95% Chebyshev(Mean, Sd) UCL	6.937
97.5% Chebyshev(Mean, Sd) UCL	8.963	99% Chebyshev(Mean, Sd) UCL	12.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	2.07	Mean	16.09
Maximum	54.1	Median	7.055
SD	20.56	Std. Error of Mean	8.393
Coefficient of Variation	1.277	Skewness	1.628
Mean of logged Data	1.985	SD of logged Data	1.433

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.01	95% Adjusted-CLT UCL (Chen-1995)	35.86
		95% Modified-t UCL (Johnson-1978)	33.94

Nonparametric Distribution Free UCLs

95% CLT UCL	29.9	95% Jackknife UCL	33.01
95% Standard Bootstrap UCL	28.5	95% Bootstrap-t UCL	59.75
95% Hall's Bootstrap UCL	101.4	95% Percentile Bootstrap UCL	29.73
95% BCA Bootstrap UCL	33.44		
90% Chebyshev(Mean, Sd) UCL	41.27	95% Chebyshev(Mean, Sd) UCL	52.68
97.5% Chebyshev(Mean, Sd) UCL	68.51	99% Chebyshev(Mean, Sd) UCL	99.61

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.96	Mean	126.9
Maximum	376	Median	76.8
SD	147.5	Std. Error of Mean	60.22
Coefficient of Variation	1.163	Skewness	1.091
Mean of logged Data	3.919	SD of logged Data	1.692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	248.2	95% Adjusted-CLT UCL (Chen-1995)	254.6
		95% Modified-t UCL (Johnson-1978)	252.7

Nonparametric Distribution Free UCLs

95% CLT UCL	226	95% Jackknife UCL	248.2
95% Standard Bootstrap UCL	216.2	95% Bootstrap-t UCL	307.7
95% Hall's Bootstrap UCL	341.1	95% Percentile Bootstrap UCL	220.5
95% BCA Bootstrap UCL	246.8		
90% Chebyshev(Mean, Sd) UCL	307.6	95% Chebyshev(Mean, Sd) UCL	389.4
97.5% Chebyshev(Mean, Sd) UCL	503	99% Chebyshev(Mean, Sd) UCL	726.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.5	Mean	151.6
Maximum	394	Median	102.6
SD	162.4	Std. Error of Mean	66.28
Coefficient of Variation	1.071	Skewness	0.661
Mean of logged Data	4.179	SD of logged Data	1.62

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	285.2	95% Adjusted-CLT UCL (Chen-1995)	279.7
		95% Modified-t UCL (Johnson-1978)	288.2

Nonparametric Distribution Free UCLs

95% CLT UCL	260.6	95% Jackknife UCL	285.2
95% Standard Bootstrap UCL	252	95% Bootstrap-t UCL	417.1
95% Hall's Bootstrap UCL	280.1	95% Percentile Bootstrap UCL	257.9
95% BCA Bootstrap UCL	267.4		
90% Chebyshev(Mean, Sd) UCL	350.5	95% Chebyshev(Mean, Sd) UCL	440.5
97.5% Chebyshev(Mean, Sd) UCL	565.5	99% Chebyshev(Mean, Sd) UCL	811.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.9	Mean	187.1
Maximum	552	Median	123.7
SD	212.7	Std. Error of Mean	86.84
Coefficient of Variation	1.137	Skewness	1.129
Mean of logged Data	4.401	SD of logged Data	1.578

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	362.1	95% Adjusted-CLT UCL (Chen-1995)	372.7
		95% Modified-t UCL (Johnson-1978)	368.8

Nonparametric Distribution Free UCLs

95% CLT UCL	330	95% Jackknife UCL	362.1
95% Standard Bootstrap UCL	316.9	95% Bootstrap-t UCL	420.6
95% Hall's Bootstrap UCL	430.6	95% Percentile Bootstrap UCL	322.6
95% BCA Bootstrap UCL	332.2		
90% Chebyshev(Mean, Sd) UCL	447.6	95% Chebyshev(Mean, Sd) UCL	565.6
97.5% Chebyshev(Mean, Sd) UCL	729.4	99% Chebyshev(Mean, Sd) UCL	1051

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.65	Mean	103.4
Maximum	289	Median	64.5
SD	115.1	Std. Error of Mean	46.97
Coefficient of Variation	1.113	Skewness	0.913
Mean of logged Data	3.809	SD of logged Data	1.578

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	198.1	95% Adjusted-CLT UCL (Chen-1995)	199.4
		95% Modified-t UCL (Johnson-1978)	201

Nonparametric Distribution Free UCLs

95% CLT UCL	180.7	95% Jackknife UCL	198.1
95% Standard Bootstrap UCL	172.3	95% Bootstrap-t UCL	317.2
95% Hall's Bootstrap UCL	233.2	95% Percentile Bootstrap UCL	178.3
95% BCA Bootstrap UCL	184.3		
90% Chebyshev(Mean, Sd) UCL	244.3	95% Chebyshev(Mean, Sd) UCL	308.2
97.5% Chebyshev(Mean, Sd) UCL	396.8	99% Chebyshev(Mean, Sd) UCL	570.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.54	Mean	92.32
Maximum	264	Median	58.7
SD	104.6	Std. Error of Mean	42.71
Coefficient of Variation	1.133	Skewness	0.959
Mean of logged Data	3.619	SD of logged Data	1.678

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	178.4	95% Adjusted-CLT UCL (Chen-1995)	180.4
		95% Modified-t UCL (Johnson-1978)	181.2

Nonparametric Distribution Free UCLs

95% CLT UCL	162.6	95% Jackknife UCL	178.4

95% Standard Bootstrap UCL	155.7	95% Bootstrap-t UCL	208.9
95% Hall's Bootstrap UCL	170.3	95% Percentile Bootstrap UCL	159.3
95% BCA Bootstrap UCL	169.2		
90% Chebyshev(Mean, Sd) UCL	220.4	95% Chebyshev(Mean, Sd) UCL	278.5
97.5% Chebyshev(Mean, Sd) UCL	359	99% Chebyshev(Mean, Sd) UCL	517.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.7	Mean	165.7
Maximum	502	Median	97.95
SD	195.2	Std. Error of Mean	79.71
Coefficient of Variation	1.179	Skewness	1.184
Mean of logged Data	4.207	SD of logged Data	1.648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	326.3	95% Adjusted-CLT UCL (Chen-1995)	338
		95% Modified-t UCL (Johnson-1978)	332.7

Nonparametric Distribution Free UCLs

95% CLT UCL	296.8	95% Jackknife UCL	326.3
95% Standard Bootstrap UCL	284.4	95% Bootstrap-t UCL	412
95% Hall's Bootstrap UCL	514.1	95% Percentile Bootstrap UCL	290.7
95% BCA Bootstrap UCL	326.1		
90% Chebyshev(Mean, Sd) UCL	404.8	95% Chebyshev(Mean, Sd) UCL	513.1
97.5% Chebyshev(Mean, Sd) UCL	663.5	99% Chebyshev(Mean, Sd) UCL	958.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.65	Mean	27.34
Maximum	77.5	Median	17.08
SD	30.15	Std. Error of Mean	12.31
Coefficient of Variation	1.103	Skewness	1.028
Mean of logged Data	2.569	SD of logged Data	1.457

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.14	95% Adjusted-CLT UCL (Chen-1995)	53.11
		95% Modified-t UCL (Johnson-1978)	53

Nonparametric Distribution Free UCLs

95% CLT UCL	47.59	95% Jackknife UCL	52.14
95% Standard Bootstrap UCL	45.72	95% Bootstrap-t UCL	84.75
95% Hall's Bootstrap UCL	65.74	95% Percentile Bootstrap UCL	46.53
95% BCA Bootstrap UCL	51.69		
90% Chebyshev(Mean, Sd) UCL	64.27	95% Chebyshev(Mean, Sd) UCL	81
97.5% Chebyshev(Mean, Sd) UCL	104.2	99% Chebyshev(Mean, Sd) UCL	149.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	273.5
Maximum	881	Median	152.3
SD	339.8	Std. Error of Mean	138.7
Coefficient of Variation	1.243	Skewness	1.384
Mean of logged Data	4.618	SD of logged Data	1.738

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	553	95% Adjusted-CLT UCL (Chen-1995)	585.4
		95% Modified-t UCL (Johnson-1978)	566.1

Nonparametric Distribution Free UCLs

95% CLT UCL	501.7	95% Jackknife UCL	553
95% Standard Bootstrap UCL	483.7	95% Bootstrap-t UCL	994.6
95% Hall's Bootstrap UCL	1448	95% Percentile Bootstrap UCL	494.5
95% BCA Bootstrap UCL	548.7		
90% Chebyshev(Mean, Sd) UCL	689.7	95% Chebyshev(Mean, Sd) UCL	878.2
97.5% Chebyshev(Mean, Sd) UCL	1140	99% Chebyshev(Mean, Sd) UCL	1654

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.275	Mean	2.945
Maximum	8.07	Median	1.663
SD	2.681	Std. Error of Mean	1.095
Coefficient of Variation	0.91	Skewness	1.879
Mean of logged Data	0.811	SD of logged Data	0.751

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.151	95% Adjusted-CLT UCL (Chen-1995)	5.643
		95% Modified-t UCL (Johnson-1978)	5.291

Nonparametric Distribution Free UCLs

95% CLT UCL	4.745	95% Jackknife UCL	5.151
95% Standard Bootstrap UCL	4.599	95% Bootstrap-t UCL	13.41
95% Hall's Bootstrap UCL	14.84	95% Percentile Bootstrap UCL	4.682
95% BCA Bootstrap UCL	5.322		
90% Chebyshev(Mean, Sd) UCL	6.229	95% Chebyshev(Mean, Sd) UCL	7.716
97.5% Chebyshev(Mean, Sd) UCL	9.781	99% Chebyshev(Mean, Sd) UCL	13.84

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.09	Mean	119
Maximum	314	Median	79.7
SD	127.7	Std. Error of Mean	52.12
Coefficient of Variation	1.073	Skewness	0.725
Mean of logged Data	3.963	SD of logged Data	1.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	224	95% Adjusted-CLT UCL (Chen-1995)	221.2
		95% Modified-t UCL (Johnson-1978)	226.6

Nonparametric Distribution Free UCLs

95% CLT UCL	204.7	95% Jackknife UCL	224
95% Standard Bootstrap UCL	198.7	95% Bootstrap-t UCL	250.8
95% Hall's Bootstrap UCL	180.6	95% Percentile Bootstrap UCL	202
95% BCA Bootstrap UCL	209		
90% Chebyshev(Mean, Sd) UCL	275.4	95% Chebyshev(Mean, Sd) UCL	346.2
97.5% Chebyshev(Mean, Sd) UCL	444.5	99% Chebyshev(Mean, Sd) UCL	637.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	5.53	Mean	123.1
Maximum	439	Median	60.05
SD	167.4	Std. Error of Mean	68.36
Coefficient of Variation	1.36	Skewness	1.741
Mean of logged Data	3.755	SD of logged Data	1.765

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	260.9	95% Adjusted-CLT UCL (Chen-1995)	287.5
		95% Modified-t UCL (Johnson-1978)	269

Nonparametric Distribution Free UCLs

95% CLT UCL	235.6	95% Jackknife UCL	260.9
95% Standard Bootstrap UCL	222.8	95% Bootstrap-t UCL	544.6
95% Hall's Bootstrap UCL	663.4	95% Percentile Bootstrap UCL	240.4
95% BCA Bootstrap UCL	267		
90% Chebyshev(Mean, Sd) UCL	328.2	95% Chebyshev(Mean, Sd) UCL	421.1
97.5% Chebyshev(Mean, Sd) UCL	550	99% Chebyshev(Mean, Sd) UCL	803.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.7	Mean	259.4
Maximum	827	Median	144.6
SD	319.8	Std. Error of Mean	130.5
Coefficient of Variation	1.233	Skewness	1.346
Mean of logged Data	4.575	SD of logged Data	1.729

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	522.4	95% Adjusted-CLT UCL (Chen-1995)	550.7
		95% Modified-t UCL (Johnson-1978)	534.4

Nonparametric Distribution Free UCLs

95% CLT UCL	474.1	95% Jackknife UCL	522.4
95% Standard Bootstrap UCL	458	95% Bootstrap-t UCL	698
95% Hall's Bootstrap UCL	1375	95% Percentile Bootstrap UCL	460.5
95% BCA Bootstrap UCL	503.4		
90% Chebyshev(Mean, Sd) UCL	651	95% Chebyshev(Mean, Sd) UCL	828.4
97.5% Chebyshev(Mean, Sd) UCL	1075	99% Chebyshev(Mean, Sd) UCL	1558

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.7	Mean	11.1
Maximum	11.7	Median	11.05
SD	0.341	Std. Error of Mean	0.139
Coefficient of Variation	0.0307	Skewness	1.093
Mean of logged Data	2.407	SD of logged Data	0.0304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.38	95% Adjusted-CLT UCL (Chen-1995)	11.4
		95% Modified-t UCL (Johnson-1978)	11.39

Nonparametric Distribution Free UCLs

95% CLT UCL	11.33	95% Jackknife UCL	11.38
95% Standard Bootstrap UCL	11.31	95% Bootstrap-t UCL	11.49
95% Hall's Bootstrap UCL	12.63	95% Percentile Bootstrap UCL	11.32
95% BCA Bootstrap UCL	11.38		
90% Chebyshev(Mean, Sd) UCL	11.52	95% Chebyshev(Mean, Sd) UCL	11.71
97.5% Chebyshev(Mean, Sd) UCL	11.97	99% Chebyshev(Mean, Sd) UCL	12.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.7	Mean	40.7
Maximum	64	Median	40.9
SD	16.55	Std. Error of Mean	6.757
Coefficient of Variation	0.407	Skewness	0.243
Mean of logged Data	3.633	SD of logged Data	0.427

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	54.31	95% Adjusted-CLT UCL (Chen-1995)	52.53
		95% Modified-t UCL (Johnson-1978)	54.43

Nonparametric Distribution Free UCLs

95% CLT UCL	51.81	95% Jackknife UCL	54.31
95% Standard Bootstrap UCL	50.67	95% Bootstrap-t UCL	56.54
95% Hall's Bootstrap UCL	49.2	95% Percentile Bootstrap UCL	50.82
95% BCA Bootstrap UCL	51.03		
90% Chebyshev(Mean, Sd) UCL	60.97	95% Chebyshev(Mean, Sd) UCL	70.15
97.5% Chebyshev(Mean, Sd) UCL	82.89	99% Chebyshev(Mean, Sd) UCL	107.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	31	Mean	37.55
Maximum	43.2	Median	37.35
SD	5.059	Std. Error of Mean	2.065
Coefficient of Variation	0.135	Skewness	-0.106
Mean of logged Data	3.618	SD of logged Data	0.136

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.71	95% Adjusted-CLT UCL (Chen-1995)	40.85
		95% Modified-t UCL (Johnson-1978)	41.7

Nonparametric Distribution Free UCLs

95% CLT UCL	40.95	95% Jackknife UCL	41.71
95% Standard Bootstrap UCL	40.69	95% Bootstrap-t UCL	41.32
95% Hall's Bootstrap UCL	39.97	95% Percentile Bootstrap UCL	40.7
95% BCA Bootstrap UCL	40.63		
90% Chebyshev(Mean, Sd) UCL	43.75	95% Chebyshev(Mean, Sd) UCL	46.55
97.5% Chebyshev(Mean, Sd) UCL	50.45	99% Chebyshev(Mean, Sd) UCL	58.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:41:51 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405206A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.08	Mean	5.128
Maximum	18.4	Median	2.9
SD	6.545	Std. Error of Mean	2.672
Coefficient of Variation	1.276	Skewness	2.374
Mean of logged Data	1.185	SD of logged Data	0.934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.51	95% Adjusted-CLT UCL (Chen-1995)	12.29
		95% Modified-t UCL (Johnson-1978)	10.94

Nonparametric Distribution Free UCLs

95% CLT UCL	9.524	95% Jackknife UCL	10.51
95% Standard Bootstrap UCL	9.211	95% Bootstrap-t UCL	50.03
95% Hall's Bootstrap UCL	45.03	95% Percentile Bootstrap UCL	10.26
95% BCA Bootstrap UCL	10.61		
90% Chebyshev(Mean, Sd) UCL	13.14	95% Chebyshev(Mean, Sd) UCL	16.78
97.5% Chebyshev(Mean, Sd) UCL	21.82	99% Chebyshev(Mean, Sd) UCL	31.72

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	3.76	Mean	11.21
Maximum	28.4	Median	8.875
SD	8.736	Std. Error of Mean	3.566
Coefficient of Variation	0.779	Skewness	2.051
Mean of logged Data	2.218	SD of logged Data	0.66

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.39	95% Adjusted-CLT UCL (Chen-1995)	20.27
		95% Modified-t UCL (Johnson-1978)	18.89

Nonparametric Distribution Free UCLs

95% CLT UCL	17.07	95% Jackknife UCL	18.39
95% Standard Bootstrap UCL	16.39	95% Bootstrap-t UCL	29.19
95% Hall's Bootstrap UCL	45.74	95% Percentile Bootstrap UCL	17.48
95% BCA Bootstrap UCL	19.15		
90% Chebyshev(Mean, Sd) UCL	21.91	95% Chebyshev(Mean, Sd) UCL	26.75
97.5% Chebyshev(Mean, Sd) UCL	33.48	99% Chebyshev(Mean, Sd) UCL	46.69

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34.9	Mean	117.6
Maximum	252	Median	86.3
SD	78.8	Std. Error of Mean	32.17
Coefficient of Variation	0.67	Skewness	1.138
Mean of logged Data	4.579	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	182.5	95% Adjusted-CLT UCL (Chen-1995)	186.5
		95% Modified-t UCL (Johnson-1978)	184.9

Nonparametric Distribution Free UCLs

95% CLT UCL	170.5	95% Jackknife UCL	182.5
95% Standard Bootstrap UCL	166.2	95% Bootstrap-t UCL	278.9
95% Hall's Bootstrap UCL	614.5	95% Percentile Bootstrap UCL	168.8
95% BCA Bootstrap UCL	180.1		
90% Chebyshev(Mean, Sd) UCL	214.1	95% Chebyshev(Mean, Sd) UCL	257.9
97.5% Chebyshev(Mean, Sd) UCL	318.5	99% Chebyshev(Mean, Sd) UCL	437.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	47.6	Mean	173.3
Maximum	332	Median	120
SD	120.6	Std. Error of Mean	49.24
Coefficient of Variation	0.696	Skewness	0.748
Mean of logged Data	4.938	SD of logged Data	0.739

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	272.5	95% Adjusted-CLT UCL (Chen-1995)	270.3
		95% Modified-t UCL (Johnson-1978)	275

Nonparametric Distribution Free UCLs

95% CLT UCL	254.3	95% Jackknife UCL	272.5
95% Standard Bootstrap UCL	248.4	95% Bootstrap-t UCL	454.2
95% Hall's Bootstrap UCL	1342	95% Percentile Bootstrap UCL	252.2
95% BCA Bootstrap UCL	254.5		
90% Chebyshev(Mean, Sd) UCL	321	95% Chebyshev(Mean, Sd) UCL	387.9
97.5% Chebyshev(Mean, Sd) UCL	480.8	99% Chebyshev(Mean, Sd) UCL	663.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	60.4	Mean	209.9
Maximum	411	Median	156.5
SD	134.8	Std. Error of Mean	55.04
Coefficient of Variation	0.642	Skewness	0.758
Mean of logged Data	5.16	SD of logged Data	0.693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	320.8	95% Adjusted-CLT UCL (Chen-1995)	318.6
		95% Modified-t UCL (Johnson-1978)	323.7

Nonparametric Distribution Free UCLs

95% CLT UCL	300.4	95% Jackknife UCL	320.8
95% Standard Bootstrap UCL	292.1	95% Bootstrap-t UCL	481.2
95% Hall's Bootstrap UCL	1418	95% Percentile Bootstrap UCL	298.3
95% BCA Bootstrap UCL	307.3		
90% Chebyshev(Mean, Sd) UCL	375	95% Chebyshev(Mean, Sd) UCL	449.8
97.5% Chebyshev(Mean, Sd) UCL	553.6	99% Chebyshev(Mean, Sd) UCL	757.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34.2	Mean	137.2
Maximum	267	Median	98.75
SD	93.09	Std. Error of Mean	38
Coefficient of Variation	0.679	Skewness	0.69
Mean of logged Data	4.705	SD of logged Data	0.755

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	213.8	95% Adjusted-CLT UCL (Chen-1995)	211.1
		95% Modified-t UCL (Johnson-1978)	215.5

Nonparametric Distribution Free UCLs

95% CLT UCL	199.7	95% Jackknife UCL	213.8
95% Standard Bootstrap UCL	193.5	95% Bootstrap-t UCL	325.1
95% Hall's Bootstrap UCL	967.9	95% Percentile Bootstrap UCL	199.5
95% BCA Bootstrap UCL	198.2		
90% Chebyshev(Mean, Sd) UCL	251.2	95% Chebyshev(Mean, Sd) UCL	302.8
97.5% Chebyshev(Mean, Sd) UCL	374.5	99% Chebyshev(Mean, Sd) UCL	515.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	22.8	Mean	86.22
Maximum	169	Median	60.65
SD	59.46	Std. Error of Mean	24.27
Coefficient of Variation	0.69	Skewness	0.747
Mean of logged Data	4.241	SD of logged Data	0.744

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	135.1	95% Adjusted-CLT UCL (Chen-1995)	134.1
		95% Modified-t UCL (Johnson-1978)	136.4

Nonparametric Distribution Free UCLs

95% CLT UCL	126.1	95% Jackknife UCL	135.1

95% Standard Bootstrap UCL	122.7	95% Bootstrap-t UCL	222.4
95% Hall's Bootstrap UCL	621.9	95% Percentile Bootstrap UCL	125.1
95% BCA Bootstrap UCL	125.5		
90% Chebyshev(Mean, Sd) UCL	159	95% Chebyshev(Mean, Sd) UCL	192
97.5% Chebyshev(Mean, Sd) UCL	237.8	99% Chebyshev(Mean, Sd) UCL	327.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	47.2	Mean	160.9
Maximum	355	Median	117
SD	110.9	Std. Error of Mean	45.26
Coefficient of Variation	0.689	Skewness	1.263
Mean of logged Data	4.886	SD of logged Data	0.693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	252.1	95% Adjusted-CLT UCL (Chen-1995)	260.3
		95% Modified-t UCL (Johnson-1978)	256

Nonparametric Distribution Free UCLs

95% CLT UCL	235.3	95% Jackknife UCL	252.1
95% Standard Bootstrap UCL	229	95% Bootstrap-t UCL	399.4
95% Hall's Bootstrap UCL	818.6	95% Percentile Bootstrap UCL	233.7
95% BCA Bootstrap UCL	250.5		
90% Chebyshev(Mean, Sd) UCL	296.6	95% Chebyshev(Mean, Sd) UCL	358.2
97.5% Chebyshev(Mean, Sd) UCL	443.5	99% Chebyshev(Mean, Sd) UCL	611.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.45	Mean	36.13
Maximum	71.4	Median	23.45
SD	27.4	Std. Error of Mean	11.19
Coefficient of Variation	0.759	Skewness	0.778
Mean of logged Data	3.325	SD of logged Data	0.818

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.67	95% Adjusted-CLT UCL (Chen-1995)	58.32
		95% Modified-t UCL (Johnson-1978)	59.26

Nonparametric Distribution Free UCLs

95% CLT UCL	54.53	95% Jackknife UCL	58.67
95% Standard Bootstrap UCL	53.07	95% Bootstrap-t UCL	112.4
95% Hall's Bootstrap UCL	285.6	95% Percentile Bootstrap UCL	54.33
95% BCA Bootstrap UCL	54.98		
90% Chebyshev(Mean, Sd) UCL	69.69	95% Chebyshev(Mean, Sd) UCL	84.89
97.5% Chebyshev(Mean, Sd) UCL	106	99% Chebyshev(Mean, Sd) UCL	147.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	52.5	Mean	153.3
Maximum	338	Median	131
SD	96.68	Std. Error of Mean	39.47
Coefficient of Variation	0.631	Skewness	1.728
Mean of logged Data	4.884	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	232.8	95% Adjusted-CLT UCL (Chen-1995)	247.9
		95% Modified-t UCL (Johnson-1978)	237.4

Nonparametric Distribution Free UCLs

95% CLT UCL	218.2	95% Jackknife UCL	232.8
95% Standard Bootstrap UCL	211.8	95% Bootstrap-t UCL	308.5
95% Hall's Bootstrap UCL	551.7	95% Percentile Bootstrap UCL	222.8
95% BCA Bootstrap UCL	229		
90% Chebyshev(Mean, Sd) UCL	271.7	95% Chebyshev(Mean, Sd) UCL	325.3
97.5% Chebyshev(Mean, Sd) UCL	399.7	99% Chebyshev(Mean, Sd) UCL	546

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.09	Mean	1.947
Maximum	4.82	Median	1.46
SD	1.418	Std. Error of Mean	0.579
Coefficient of Variation	0.728	Skewness	2.371
Mean of logged Data	0.519	SD of logged Data	0.532

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.113	95% Adjusted-CLT UCL (Chen-1995)	3.497
		95% Modified-t UCL (Johnson-1978)	3.206

Nonparametric Distribution Free UCLs

95% CLT UCL	2.899	95% Jackknife UCL	3.113
95% Standard Bootstrap UCL	2.822	95% Bootstrap-t UCL	9.26
95% Hall's Bootstrap UCL	9.125	95% Percentile Bootstrap UCL	3.067
95% BCA Bootstrap UCL	3.158		
90% Chebyshev(Mean, Sd) UCL	3.683	95% Chebyshev(Mean, Sd) UCL	4.469
97.5% Chebyshev(Mean, Sd) UCL	5.561	99% Chebyshev(Mean, Sd) UCL	7.705

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.469

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	35.6	Mean	147.8
Maximum	292	Median	99.4
SD	109	Std. Error of Mean	44.52
Coefficient of Variation	0.738	Skewness	0.758
Mean of logged Data	4.746	SD of logged Data	0.799

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	237.5	95% Adjusted-CLT UCL (Chen-1995)	235.7
		95% Modified-t UCL (Johnson-1978)	239.7

Nonparametric Distribution Free UCLs

95% CLT UCL	221	95% Jackknife UCL	237.5
95% Standard Bootstrap UCL	213.1	95% Bootstrap-t UCL	431.8
95% Hall's Bootstrap UCL	1123	95% Percentile Bootstrap UCL	219
95% BCA Bootstrap UCL	221.3		
90% Chebyshev(Mean, Sd) UCL	281.3	95% Chebyshev(Mean, Sd) UCL	341.8
97.5% Chebyshev(Mean, Sd) UCL	425.8	99% Chebyshev(Mean, Sd) UCL	590.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	4.47	Mean	9.853
Maximum	35.2	Median	4.85
SD	12.42	Std. Error of Mean	5.07
Coefficient of Variation	1.26	Skewness	2.448
Mean of logged Data	1.897	SD of logged Data	0.816

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.07	95% Adjusted-CLT UCL (Chen-1995)	23.61
		95% Modified-t UCL (Johnson-1978)	20.91

Nonparametric Distribution Free UCLs

95% CLT UCL	18.19	95% Jackknife UCL	20.07
95% Standard Bootstrap UCL	17.33	95% Bootstrap-t UCL	753.7
95% Hall's Bootstrap UCL	419.8	95% Percentile Bootstrap UCL	19.95
95% BCA Bootstrap UCL	20.05		
90% Chebyshev(Mean, Sd) UCL	25.06	95% Chebyshev(Mean, Sd) UCL	31.95
97.5% Chebyshev(Mean, Sd) UCL	41.51	99% Chebyshev(Mean, Sd) UCL	60.3

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	31.95

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.7	Mean	57.08
Maximum	137	Median	46.05
SD	40.96	Std. Error of Mean	16.72
Coefficient of Variation	0.718	Skewness	1.974
Mean of logged Data	3.874	SD of logged Data	0.612

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	90.78	95% Adjusted-CLT UCL (Chen-1995)	98.98
		95% Modified-t UCL (Johnson-1978)	93.02

Nonparametric Distribution Free UCLs

95% CLT UCL	84.59	95% Jackknife UCL	90.78
95% Standard Bootstrap UCL	81.49	95% Bootstrap-t UCL	135.4
95% Hall's Bootstrap UCL	216.3	95% Percentile Bootstrap UCL	87.47
95% BCA Bootstrap UCL	91.57		
90% Chebyshev(Mean, Sd) UCL	107.2	95% Chebyshev(Mean, Sd) UCL	130
97.5% Chebyshev(Mean, Sd) UCL	161.5	99% Chebyshev(Mean, Sd) UCL	223.5

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	51.7	Mean	166.3
Maximum	404	Median	134
SD	121.9	Std. Error of Mean	49.78
Coefficient of Variation	0.733	Skewness	1.94
Mean of logged Data	4.926	SD of logged Data	0.659

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	266.6	95% Adjusted-CLT UCL (Chen-1995)	290.3
		95% Modified-t UCL (Johnson-1978)	273.2

Nonparametric Distribution Free UCLs

95% CLT UCL	248.2	95% Jackknife UCL	266.6
95% Standard Bootstrap UCL	241.2	95% Bootstrap-t UCL	406
95% Hall's Bootstrap UCL	667	95% Percentile Bootstrap UCL	255.1
95% BCA Bootstrap UCL	272.3		
90% Chebyshev(Mean, Sd) UCL	315.6	95% Chebyshev(Mean, Sd) UCL	383.3
97.5% Chebyshev(Mean, Sd) UCL	477.2	99% Chebyshev(Mean, Sd) UCL	661.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.72	Mean	0.778
Maximum	1.01	Median	0.733
SD	0.114	Std. Error of Mean	0.0467
Coefficient of Variation	0.147	Skewness	2.41
Mean of logged Data	-0.26	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.872	95% Adjusted-CLT UCL (Chen-1995)	0.903
		95% Modified-t UCL (Johnson-1978)	0.879

Nonparametric Distribution Free UCLs

95% CLT UCL	0.854	95% Jackknife UCL	0.872
95% Standard Bootstrap UCL	0.851	95% Bootstrap-t UCL	1.478
95% Hall's Bootstrap UCL	1.437	95% Percentile Bootstrap UCL	0.869
95% BCA Bootstrap UCL	0.873		
90% Chebyshev(Mean, Sd) UCL	0.918	95% Chebyshev(Mean, Sd) UCL	0.981
97.5% Chebyshev(Mean, Sd) UCL	1.069	99% Chebyshev(Mean, Sd) UCL	1.242

Suggested UCL to Use

95% Student's-t UCL	0.872	or 95% Modified-t UCL	0.879

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12	Mean	12.93
Maximum	13.8	Median	13
SD	0.882	Std. Error of Mean	0.36
Coefficient of Variation	0.0682	Skewness	-0.0408
Mean of logged Data	2.558	SD of logged Data	0.0684

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.66	95% Adjusted-CLT UCL (Chen-1995)	13.52
		95% Modified-t UCL (Johnson-1978)	13.66

Nonparametric Distribution Free UCLs

95% CLT UCL	13.53	95% Jackknife UCL	13.66
95% Standard Bootstrap UCL	13.47	95% Bootstrap-t UCL	13.66
95% Hall's Bootstrap UCL	13.24	95% Percentile Bootstrap UCL	13.47
95% BCA Bootstrap UCL	13.45		
90% Chebyshev(Mean, Sd) UCL	14.01	95% Chebyshev(Mean, Sd) UCL	14.5
97.5% Chebyshev(Mean, Sd) UCL	15.18	99% Chebyshev(Mean, Sd) UCL	16.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.9	Mean	34.83
Maximum	65.6	Median	24.15
SD	19.96	Std. Error of Mean	8.151
Coefficient of Variation	0.573	Skewness	1.061
Mean of logged Data	3.428	SD of logged Data	0.524

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.26	95% Adjusted-CLT UCL (Chen-1995)	52.01
		95% Modified-t UCL (Johnson-1978)	51.85

Nonparametric Distribution Free UCLs

95% CLT UCL	48.24	95% Jackknife UCL	51.26
95% Standard Bootstrap UCL	47.19	95% Bootstrap-t UCL	143.7
95% Hall's Bootstrap UCL	180.6	95% Percentile Bootstrap UCL	47.8
95% BCA Bootstrap UCL	49.2		
90% Chebyshev(Mean, Sd) UCL	59.29	95% Chebyshev(Mean, Sd) UCL	70.36
97.5% Chebyshev(Mean, Sd) UCL	85.73	99% Chebyshev(Mean, Sd) UCL	115.9

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	43.4	Mean	52.92
Maximum	63.2	Median	52.6
SD	9.855	Std. Error of Mean	4.023
Coefficient of Variation	0.186	Skewness	0.0239
Mean of logged Data	3.954	SD of logged Data	0.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	61.02	95% Adjusted-CLT UCL (Chen-1995)	59.58
		95% Modified-t UCL (Johnson-1978)	61.03

Nonparametric Distribution Free UCLs

95% CLT UCL	59.53	95% Jackknife UCL	61.02
95% Standard Bootstrap UCL	58.76	95% Bootstrap-t UCL	61
95% Hall's Bootstrap UCL	56.24	95% Percentile Bootstrap UCL	58.97
95% BCA Bootstrap UCL	59.2		
90% Chebyshev(Mean, Sd) UCL	64.99	95% Chebyshev(Mean, Sd) UCL	70.45
97.5% Chebyshev(Mean, Sd) UCL	78.04	99% Chebyshev(Mean, Sd) UCL	92.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:43:46 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405212) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.63	Mean	0.845
Maximum	1.36	Median	0.767
SD	0.266	Std. Error of Mean	0.108
Coefficient of Variation	0.314	Skewness	1.928
Mean of logged Data	-0.202	SD of logged Data	0.274

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.064	95% Adjusted-CLT UCL (Chen-1995)	1.115
		95% Modified-t UCL (Johnson-1978)	1.078

Nonparametric Distribution Free UCLs

95% CLT UCL	1.024	95% Jackknife UCL	1.064
95% Standard Bootstrap UCL	1.006	95% Bootstrap-t UCL	1.396
95% Hall's Bootstrap UCL	1.826	95% Percentile Bootstrap UCL	1.03
95% BCA Bootstrap UCL	1.081		
90% Chebyshev(Mean, Sd) UCL	1.171	95% Chebyshev(Mean, Sd) UCL	1.318
97.5% Chebyshev(Mean, Sd) UCL	1.523	99% Chebyshev(Mean, Sd) UCL	1.924

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0

Minimum	0.491	Mean	0.565
Maximum	0.746	Median	0.53
SD	0.0955	Std. Error of Mean	0.039
Coefficient of Variation	0.169	Skewness	1.801
Mean of logged Data	-0.582	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.643	95% Adjusted-CLT UCL (Chen-1995)	0.659
		95% Modified-t UCL (Johnson-1978)	0.648

Nonparametric Distribution Free UCLs

95% CLT UCL	0.629	95% Jackknife UCL	0.643
95% Standard Bootstrap UCL	0.624	95% Bootstrap-t UCL	0.831
95% Hall's Bootstrap UCL	0.992	95% Percentile Bootstrap UCL	0.632
95% BCA Bootstrap UCL	0.652		
90% Chebyshev(Mean, Sd) UCL	0.682	95% Chebyshev(Mean, Sd) UCL	0.735
97.5% Chebyshev(Mean, Sd) UCL	0.808	99% Chebyshev(Mean, Sd) UCL	0.953

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.995	Mean	2.176
Maximum	2.47	Median	2.143
SD	0.173	Std. Error of Mean	0.0708
Coefficient of Variation	0.0796	Skewness	1.009
Mean of logged Data	0.775	SD of logged Data	0.0779

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	2.318	95% Adjusted-CLT UCL (Chen-1995)	2.323
		95% Modified-t UCL (Johnson-1978)	2.323

Nonparametric Distribution Free UCLs

95% CLT UCL	2.292	95% Jackknife UCL	2.318
95% Standard Bootstrap UCL	2.283	95% Bootstrap-t UCL	2.412
95% Hall's Bootstrap UCL	3.097	95% Percentile Bootstrap UCL	2.288
95% BCA Bootstrap UCL	2.291		
90% Chebyshev(Mean, Sd) UCL	2.388	95% Chebyshev(Mean, Sd) UCL	2.484
97.5% Chebyshev(Mean, Sd) UCL	2.618	99% Chebyshev(Mean, Sd) UCL	2.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	10.02
Maximum	22.1	Median	6.02
SD	8.285	Std. Error of Mean	3.382
Coefficient of Variation	0.827	Skewness	0.888
Mean of logged Data	1.993	SD of logged Data	0.891

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.83	95% Adjusted-CLT UCL (Chen-1995)	16.89
		95% Modified-t UCL (Johnson-1978)	17.04

Nonparametric Distribution Free UCLs

95% CLT UCL	15.58	95% Jackknife UCL	16.83
95% Standard Bootstrap UCL	15.02	95% Bootstrap-t UCL	34.12
95% Hall's Bootstrap UCL	77.37	95% Percentile Bootstrap UCL	15.48
95% BCA Bootstrap UCL	15.64		
90% Chebyshev(Mean, Sd) UCL	20.16	95% Chebyshev(Mean, Sd) UCL	24.76
97.5% Chebyshev(Mean, Sd) UCL	31.14	99% Chebyshev(Mean, Sd) UCL	43.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.73	Mean	14.58
Maximum	34.1	Median	8.11
SD	13.19	Std. Error of Mean	5.385
Coefficient of Variation	0.905	Skewness	0.901
Mean of logged Data	2.263	SD of logged Data	1.082

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.43	95% Adjusted-CLT UCL (Chen-1995)	25.55
		95% Modified-t UCL (Johnson-1978)	25.76

Nonparametric Distribution Free UCLs

95% CLT UCL	23.44	95% Jackknife UCL	25.43
95% Standard Bootstrap UCL	22.89	95% Bootstrap-t UCL	54.09
95% Hall's Bootstrap UCL	129.2	95% Percentile Bootstrap UCL	23.24
95% BCA Bootstrap UCL	24.23		
90% Chebyshev(Mean, Sd) UCL	30.73	95% Chebyshev(Mean, Sd) UCL	38.05
97.5% Chebyshev(Mean, Sd) UCL	48.21	99% Chebyshev(Mean, Sd) UCL	68.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	19.99
Maximum	46	Median	11.55
SD	17.35	Std. Error of Mean	7.085
Coefficient of Variation	0.868	Skewness	0.92
Mean of logged Data	2.635	SD of logged Data	0.98

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.27	95% Adjusted-CLT UCL (Chen-1995)	34.49
		95% Modified-t UCL (Johnson-1978)	34.71

Nonparametric Distribution Free UCLs

95% CLT UCL	31.64	95% Jackknife UCL	34.27
95% Standard Bootstrap UCL	30.94	95% Bootstrap-t UCL	71.6
95% Hall's Bootstrap UCL	170	95% Percentile Bootstrap UCL	31.4
95% BCA Bootstrap UCL	31.64		
90% Chebyshev(Mean, Sd) UCL	41.24	95% Chebyshev(Mean, Sd) UCL	50.87
97.5% Chebyshev(Mean, Sd) UCL	64.23	99% Chebyshev(Mean, Sd) UCL	90.48

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	11.61
Maximum	26.4	Median	6.305
SD	9.925	Std. Error of Mean	4.052
Coefficient of Variation	0.855	Skewness	0.989
Mean of logged Data	2.148	SD of logged Data	0.844

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.77	95% Adjusted-CLT UCL (Chen-1995)	20.02
		95% Modified-t UCL (Johnson-1978)	20.04

Nonparametric Distribution Free UCLs

95% CLT UCL	18.27	95% Jackknife UCL	19.77

95% Standard Bootstrap UCL	17.69	95% Bootstrap-t UCL	57.17
95% Hall's Bootstrap UCL	104.9	95% Percentile Bootstrap UCL	17.76
95% BCA Bootstrap UCL	18.78		
90% Chebyshev(Mean, Sd) UCL	23.76	95% Chebyshev(Mean, Sd) UCL	29.27
97.5% Chebyshev(Mean, Sd) UCL	36.91	99% Chebyshev(Mean, Sd) UCL	51.92

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	7.886
Maximum	17.9	Median	4.36
SD	6.557	Std. Error of Mean	2.677
Coefficient of Variation	0.831	Skewness	1.006
Mean of logged Data	1.776	SD of logged Data	0.831

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	13.46
		95% Modified-t UCL (Johnson-1978)	13.46

Nonparametric Distribution Free UCLs

95% CLT UCL	12.29	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	12.01	95% Bootstrap-t UCL	34.27
95% Hall's Bootstrap UCL	89.49	95% Percentile Bootstrap UCL	12.21
95% BCA Bootstrap UCL	12.8		
90% Chebyshev(Mean, Sd) UCL	15.92	95% Chebyshev(Mean, Sd) UCL	19.55
97.5% Chebyshev(Mean, Sd) UCL	24.6	99% Chebyshev(Mean, Sd) UCL	34.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	15.54
Maximum	34.3	Median	9.82
SD	12.95	Std. Error of Mean	5.285
Coefficient of Variation	0.833	Skewness	0.793
Mean of logged Data	2.379	SD of logged Data	1.023

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.19	95% Adjusted-CLT UCL (Chen-1995)	26.07
		95% Modified-t UCL (Johnson-1978)	26.48

Nonparametric Distribution Free UCLs

95% CLT UCL	24.24	95% Jackknife UCL	26.19
95% Standard Bootstrap UCL	23.29	95% Bootstrap-t UCL	45.57
95% Hall's Bootstrap UCL	123.2	95% Percentile Bootstrap UCL	24.37
95% BCA Bootstrap UCL	24.76		
90% Chebyshev(Mean, Sd) UCL	31.4	95% Chebyshev(Mean, Sd) UCL	38.58
97.5% Chebyshev(Mean, Sd) UCL	48.55	99% Chebyshev(Mean, Sd) UCL	68.13

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.07	Mean	4.231
Maximum	6.82	Median	3.298
SD	1.636	Std. Error of Mean	0.668
Coefficient of Variation	0.387	Skewness	1.13
Mean of logged Data	1.387	SD of logged Data	0.353

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.576	95% Adjusted-CLT UCL (Chen-1995)	5.658
		95% Modified-t UCL (Johnson-1978)	5.628

Nonparametric Distribution Free UCLs

95% CLT UCL	5.329	95% Jackknife UCL	5.576
95% Standard Bootstrap UCL	5.224	95% Bootstrap-t UCL	20.15
95% Hall's Bootstrap UCL	20.03	95% Percentile Bootstrap UCL	5.258
95% BCA Bootstrap UCL	5.471		
90% Chebyshev(Mean, Sd) UCL	6.234	95% Chebyshev(Mean, Sd) UCL	7.141
97.5% Chebyshev(Mean, Sd) UCL	8.401	99% Chebyshev(Mean, Sd) UCL	10.87

Suggested UCL to Use

95% Student's-t UCL	5.576	or 95% Modified-t UCL	5.628

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.035	Mean	18.31
Maximum	37.2	Median	15
SD	13.64	Std. Error of Mean	5.57
Coefficient of Variation	0.745	Skewness	0.398
Mean of logged Data	2.555	SD of logged Data	1.061

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.54	95% Adjusted-CLT UCL (Chen-1995)	28.44
		95% Modified-t UCL (Johnson-1978)	29.69

Nonparametric Distribution Free UCLs

95% CLT UCL	27.48	95% Jackknife UCL	29.54
95% Standard Bootstrap UCL	26.67	95% Bootstrap-t UCL	32.07
95% Hall's Bootstrap UCL	33.66	95% Percentile Bootstrap UCL	26.87
95% BCA Bootstrap UCL	27.4		
90% Chebyshev(Mean, Sd) UCL	35.02	95% Chebyshev(Mean, Sd) UCL	42.59
97.5% Chebyshev(Mean, Sd) UCL	53.1	99% Chebyshev(Mean, Sd) UCL	73.73

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	12.11
Maximum	27.6	Median	6.65
SD	10.34	Std. Error of Mean	4.223
Coefficient of Variation	0.854	Skewness	0.984
Mean of logged Data	2.188	SD of logged Data	0.852

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.62	95% Adjusted-CLT UCL (Chen-1995)	20.87
		95% Modified-t UCL (Johnson-1978)	20.9

Nonparametric Distribution Free UCLs

95% CLT UCL	19.05	95% Jackknife UCL	20.62
95% Standard Bootstrap UCL	18.36	95% Bootstrap-t UCL	54.5
95% Hall's Bootstrap UCL	102	95% Percentile Bootstrap UCL	18.54
95% BCA Bootstrap UCL	19.82		
90% Chebyshev(Mean, Sd) UCL	24.78	95% Chebyshev(Mean, Sd) UCL	30.51
97.5% Chebyshev(Mean, Sd) UCL	38.48	99% Chebyshev(Mean, Sd) UCL	54.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.94	Mean	2.467
Maximum	8.14	Median	1.27
SD	2.809	Std. Error of Mean	1.147
Coefficient of Variation	1.139	Skewness	2.338
Mean of logged Data	0.554	SD of logged Data	0.806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.778	95% Adjusted-CLT UCL (Chen-1995)	5.523
		95% Modified-t UCL (Johnson-1978)	4.96

Nonparametric Distribution Free UCLs

95% CLT UCL	4.353	95% Jackknife UCL	4.778
95% Standard Bootstrap UCL	4.199	95% Bootstrap-t UCL	22.87
95% Hall's Bootstrap UCL	15.12	95% Percentile Bootstrap UCL	4.645
95% BCA Bootstrap UCL	4.948		
90% Chebyshev(Mean, Sd) UCL	5.907	95% Chebyshev(Mean, Sd) UCL	7.466
97.5% Chebyshev(Mean, Sd) UCL	9.629	99% Chebyshev(Mean, Sd) UCL	13.88

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	8.412
Maximum	13.7	Median	8.22
SD	5.167	Std. Error of Mean	2.109
Coefficient of Variation	0.614	Skewness	0.0139
Mean of logged Data	1.94	SD of logged Data	0.699

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	12.66	95% Adjusted-CLT UCL (Chen-1995)	11.89
		95% Modified-t UCL (Johnson-1978)	12.66

Nonparametric Distribution Free UCLs

95% CLT UCL	11.88	95% Jackknife UCL	12.66
95% Standard Bootstrap UCL	11.62	95% Bootstrap-t UCL	12.96
95% Hall's Bootstrap UCL	10.19	95% Percentile Bootstrap UCL	11.57
95% BCA Bootstrap UCL	11.63		
90% Chebyshev(Mean, Sd) UCL	14.74	95% Chebyshev(Mean, Sd) UCL	17.61
97.5% Chebyshev(Mean, Sd) UCL	21.58	99% Chebyshev(Mean, Sd) UCL	29.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.13	Mean	17.79
Maximum	37.2	Median	13.1
SD	13.42	Std. Error of Mean	5.48
Coefficient of Variation	0.755	Skewness	0.656
Mean of logged Data	2.583	SD of logged Data	0.908

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.83	95% Adjusted-CLT UCL (Chen-1995)	28.37
		95% Modified-t UCL (Johnson-1978)	29.08

Nonparametric Distribution Free UCLs

95% CLT UCL	26.81	95% Jackknife UCL	28.83
95% Standard Bootstrap UCL	25.88	95% Bootstrap-t UCL	40.37
95% Hall's Bootstrap UCL	57.61	95% Percentile Bootstrap UCL	25.96
95% BCA Bootstrap UCL	28.04		
90% Chebyshev(Mean, Sd) UCL	34.23	95% Chebyshev(Mean, Sd) UCL	41.68
97.5% Chebyshev(Mean, Sd) UCL	52.02	99% Chebyshev(Mean, Sd) UCL	72.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	11.3	Mean	12.15
Maximum	14.3	Median	11.7
SD	1.183	Std. Error of Mean	0.483
Coefficient of Variation	0.0973	Skewness	1.484
Mean of logged Data	2.494	SD of logged Data	0.0934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.12	95% Adjusted-CLT UCL (Chen-1995)	13.26
		95% Modified-t UCL (Johnson-1978)	13.17

Nonparametric Distribution Free UCLs

95% CLT UCL	12.94	95% Jackknife UCL	13.12
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.6	95% Chebyshev(Mean, Sd) UCL	14.25
97.5% Chebyshev(Mean, Sd) UCL	15.17	99% Chebyshev(Mean, Sd) UCL	16.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.5	Mean	33.18
Maximum	50.8	Median	37.9
SD	16.4	Std. Error of Mean	6.695
Coefficient of Variation	0.494	Skewness	-0.555
Mean of logged Data	3.362	SD of logged Data	0.625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.67	95% Adjusted-CLT UCL (Chen-1995)	42.58
		95% Modified-t UCL (Johnson-1978)	46.42

Nonparametric Distribution Free UCLs

95% CLT UCL	44.2	95% Jackknife UCL	46.67
95% Standard Bootstrap UCL	43.53	95% Bootstrap-t UCL	45.16
95% Hall's Bootstrap UCL	40.62	95% Percentile Bootstrap UCL	43.22
95% BCA Bootstrap UCL	42.08		
90% Chebyshev(Mean, Sd) UCL	53.27	95% Chebyshev(Mean, Sd) UCL	62.37
97.5% Chebyshev(Mean, Sd) UCL	75	99% Chebyshev(Mean, Sd) UCL	99.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	40.7	Mean	45.87
Maximum	52.9	Median	44.2
SD	5.477	Std. Error of Mean	2.236
Coefficient of Variation	0.119	Skewness	0.579
Mean of logged Data	3.82	SD of logged Data	0.117

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.37	95% Adjusted-CLT UCL (Chen-1995)	50.11
		95% Modified-t UCL (Johnson-1978)	50.46

Nonparametric Distribution Free UCLs

95% CLT UCL	49.54	95% Jackknife UCL	50.37
95% Standard Bootstrap UCL	49.17	95% Bootstrap-t UCL	55.98
95% Hall's Bootstrap UCL	51.62	95% Percentile Bootstrap UCL	49.27
95% BCA Bootstrap UCL	49.48		
90% Chebyshev(Mean, Sd) UCL	52.58	95% Chebyshev(Mean, Sd) UCL	55.61
97.5% Chebyshev(Mean, Sd) UCL	59.83	99% Chebyshev(Mean, Sd) UCL	68.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:45:41 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405218A) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.966	Mean	1.109
Maximum	1.29	Median	1.07
SD	0.165	Std. Error of Mean	0.0955
Coefficient of Variation	0.149	Skewness	0.994
Mean of logged Data	0.0959	SD of logged Data	0.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.388	95% Adjusted-CLT UCL (Chen-1995)	1.324
		95% Modified-t UCL (Johnson-1978)	1.397

Nonparametric Distribution Free UCLs

95% CLT UCL	1.266	95% Jackknife UCL	1.388
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.395	95% Chebyshev(Mean, Sd) UCL	1.525
97.5% Chebyshev(Mean, Sd) UCL	1.705	99% Chebyshev(Mean, Sd) UCL	2.059

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	0.505	Mean	0.677
Maximum	0.795	Median	0.731
SD	0.152	Std. Error of Mean	0.088
Coefficient of Variation	0.225	Skewness	-1.395
Mean of logged Data	-0.409	SD of logged Data	0.241

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.934	95% Adjusted-CLT UCL (Chen-1995)	0.746
		95% Modified-t UCL (Johnson-1978)	0.922

Nonparametric Distribution Free UCLs

95% CLT UCL	0.822	95% Jackknife UCL	0.934
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	0.941	95% Chebyshev(Mean, Sd) UCL	1.06
97.5% Chebyshev(Mean, Sd) UCL	1.226	99% Chebyshev(Mean, Sd) UCL	1.552

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.14	Mean	2.963
Maximum	3.47	Median	3.28
SD	0.719	Std. Error of Mean	0.415
Coefficient of Variation	0.243	Skewness	-1.597
Mean of logged Data	1.064	SD of logged Data	0.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.176	95% Adjusted-CLT UCL (Chen-1995)	3.237
		95% Modified-t UCL (Johnson-1978)	4.112

Nonparametric Distribution Free UCLs

95% CLT UCL	3.646	95% Jackknife UCL	4.176
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.209	95% Chebyshev(Mean, Sd) UCL	4.774
97.5% Chebyshev(Mean, Sd) UCL	5.557	99% Chebyshev(Mean, Sd) UCL	7.096

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	10.6	Mean	12.9
Maximum	15.5	Median	12.6
SD	2.464	Std. Error of Mean	1.422
Coefficient of Variation	0.191	Skewness	0.54
Mean of logged Data	2.545	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.05	95% Adjusted-CLT UCL (Chen-1995)	15.71
		95% Modified-t UCL (Johnson-1978)	17.13

Nonparametric Distribution Free UCLs

95% CLT UCL	15.24	95% Jackknife UCL	17.05
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	17.17	95% Chebyshev(Mean, Sd) UCL	19.1

97.5% Chebyshev(Mean, Sd) UCL	21.78	99% Chebyshev(Mean, Sd) UCL	27.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.5	Mean	14.4
Maximum	17.4	Median	14.3
SD	2.951	Std. Error of Mean	1.704
Coefficient of Variation	0.205	Skewness	0.152
Mean of logged Data	2.653	SD of logged Data	0.207

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.38	95% Adjusted-CLT UCL (Chen-1995)	17.36
		95% Modified-t UCL (Johnson-1978)	19.4

Nonparametric Distribution Free UCLs

95% CLT UCL	17.2	95% Jackknife UCL	19.38
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	19.51	95% Chebyshev(Mean, Sd) UCL	21.83
97.5% Chebyshev(Mean, Sd) UCL	25.04	99% Chebyshev(Mean, Sd) UCL	31.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	22.6	Mean	25.77
Maximum	29.8	Median	24.9
SD	3.677	Std. Error of Mean	2.123
Coefficient of Variation	0.143	Skewness	1.002
Mean of logged Data	3.242	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.97	95% Adjusted-CLT UCL (Chen-1995)	30.57
		95% Modified-t UCL (Johnson-1978)	32.17

Nonparametric Distribution Free UCLs

95% CLT UCL	29.26	95% Jackknife UCL	31.97
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	32.14	95% Chebyshev(Mean, Sd) UCL	35.02
97.5% Chebyshev(Mean, Sd) UCL	39.03	99% Chebyshev(Mean, Sd) UCL	46.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.72	Mean	10.24
Maximum	11.8	Median	10.2
SD	1.54	Std. Error of Mean	0.889
Coefficient of Variation	0.15	Skewness	0.117
Mean of logged Data	2.319	SD of logged Data	0.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.84	95% Adjusted-CLT UCL (Chen-1995)	11.77
		95% Modified-t UCL (Johnson-1978)	12.85

Nonparametric Distribution Free UCLs

95% CLT UCL	11.7	95% Jackknife UCL	12.84
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.91	95% Chebyshev(Mean, Sd) UCL	14.12
97.5% Chebyshev(Mean, Sd) UCL	15.79	99% Chebyshev(Mean, Sd) UCL	19.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	6.66	Mean	7.797
Maximum	8.69	Median	8.04
SD	1.037	Std. Error of Mean	0.599
Coefficient of Variation	0.133	Skewness	-0.998
Mean of logged Data	2.048	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.544	95% Adjusted-CLT UCL (Chen-1995)	8.413
		95% Modified-t UCL (Johnson-1978)	9.487

Nonparametric Distribution Free UCLs

95% CLT UCL	8.781	95% Jackknife UCL	9.544
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	9.592	95% Chebyshev(Mean, Sd) UCL	10.41
97.5% Chebyshev(Mean, Sd) UCL	11.53	99% Chebyshev(Mean, Sd) UCL	13.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	21.2	Mean	22.73
Maximum	24.4	Median	22.6
SD	1.604	Std. Error of Mean	0.926
Coefficient of Variation	0.0706	Skewness	0.371
Mean of logged Data	3.122	SD of logged Data	0.0704

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.44	95% Adjusted-CLT UCL (Chen-1995)	24.47
		95% Modified-t UCL (Johnson-1978)	25.47

Nonparametric Distribution Free UCLs

95% CLT UCL	24.26	95% Jackknife UCL	25.44
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	25.51	95% Chebyshev(Mean, Sd) UCL	26.77
97.5% Chebyshev(Mean, Sd) UCL	28.52	99% Chebyshev(Mean, Sd) UCL	31.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	22.2	Mean	26.5

Maximum	29.6	Median	27.7
SD	3.843	Std. Error of Mean	2.219
Coefficient of Variation	0.145	Skewness	-1.268
Mean of logged Data	3.27	SD of logged Data	0.151

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.98	95% Adjusted-CLT UCL (Chen-1995)	28.41
		95% Modified-t UCL (Johnson-1978)	32.71

Nonparametric Distribution Free UCLs

95% CLT UCL	30.15	95% Jackknife UCL	32.98
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	33.16	95% Chebyshev(Mean, Sd) UCL	36.17
97.5% Chebyshev(Mean, Sd) UCL	40.36	99% Chebyshev(Mean, Sd) UCL	48.58

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.08	Mean	1.28
Maximum	1.64	Median	1.12
SD	0.312	Std. Error of Mean	0.18
Coefficient of Variation	0.244	Skewness	1.7
Mean of logged Data	0.228	SD of logged Data	0.231

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.807	95% Adjusted-CLT UCL (Chen-1995)	1.766
		95% Modified-t UCL (Johnson-1978)	1.836

Nonparametric Distribution Free UCLs

95% CLT UCL	1.577	95% Jackknife UCL	1.807
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.821	95% Chebyshev(Mean, Sd) UCL	2.066
97.5% Chebyshev(Mean, Sd) UCL	2.406	99% Chebyshev(Mean, Sd) UCL	3.075

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	8.88	Mean	10.96
Maximum	13	Median	11
SD	2.06	Std. Error of Mean	1.19
Coefficient of Variation	0.188	Skewness	-0.0873
Mean of logged Data	2.382	SD of logged Data	0.191

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.43	95% Adjusted-CLT UCL (Chen-1995)	12.85
		95% Modified-t UCL (Johnson-1978)	14.42

Nonparametric Distribution Free UCLs

95% CLT UCL	12.92	95% Jackknife UCL	14.43
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.53	95% Chebyshev(Mean, Sd) UCL	16.14
97.5% Chebyshev(Mean, Sd) UCL	18.39	99% Chebyshev(Mean, Sd) UCL	22.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.72	Mean	1.97
Maximum	2.24	Median	1.95
SD	0.261	Std. Error of Mean	0.15
Coefficient of Variation	0.132	Skewness	0.343
Mean of logged Data	0.672	SD of logged Data	0.132

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.409	95% Adjusted-CLT UCL (Chen-1995)	2.249
		95% Modified-t UCL (Johnson-1978)	2.414

Nonparametric Distribution Free UCLs

95% CLT UCL	2.217	95% Jackknife UCL	2.409
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	2.421	95% Chebyshev(Mean, Sd) UCL	2.626
97.5% Chebyshev(Mean, Sd) UCL	2.91	99% Chebyshev(Mean, Sd) UCL	3.467

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	9.52	Mean	12.21
Maximum	13.9	Median	13.2
SD	2.353	Std. Error of Mean	1.358
Coefficient of Variation	0.193	Skewness	-1.561
Mean of logged Data	2.489	SD of logged Data	0.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.17	95% Adjusted-CLT UCL (Chen-1995)	13.13
		95% Modified-t UCL (Johnson-1978)	15.97

Nonparametric Distribution Free UCLs

95% CLT UCL	14.44	95% Jackknife UCL	16.17
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	16.28	95% Chebyshev(Mean, Sd) UCL	18.13
97.5% Chebyshev(Mean, Sd) UCL	20.69	99% Chebyshev(Mean, Sd) UCL	25.72

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	20.4	Mean	24.23
Maximum	27.2	Median	25.1
SD	3.482	Std. Error of Mean	2.01
Coefficient of Variation	0.144	Skewness	-1.051
Mean of logged Data	3.181	SD of logged Data	0.148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.1	95% Adjusted-CLT UCL (Chen-1995)	26.24
		95% Modified-t UCL (Johnson-1978)	29.9

Nonparametric Distribution Free UCLs

95% CLT UCL	27.54	95% Jackknife UCL	30.1
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	30.26	95% Chebyshev(Mean, Sd) UCL	33
97.5% Chebyshev(Mean, Sd) UCL	36.79	99% Chebyshev(Mean, Sd) UCL	44.24

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	14.3	Mean	14.67
Maximum	15.1	Median	14.6
SD	0.404	Std. Error of Mean	0.233
Coefficient of Variation	0.0276	Skewness	0.722
Mean of logged Data	2.685	SD of logged Data	0.0275

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.35	95% Adjusted-CLT UCL (Chen-1995)	15.15
		95% Modified-t UCL (Johnson-1978)	15.36

Nonparametric Distribution Free UCLs

95% CLT UCL	15.05	95% Jackknife UCL	15.35
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.37	95% Chebyshev(Mean, Sd) UCL	15.68

97.5% Chebyshev(Mean, Sd) UCL	16.12	99% Chebyshev(Mean, Sd) UCL	16.99

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.3	Mean	12.07
Maximum	13.5	Median	11.4
SD	1.242	Std. Error of Mean	0.717
Coefficient of Variation	0.103	Skewness	1.719
Mean of logged Data	2.487	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.16	95% Adjusted-CLT UCL (Chen-1995)	14.01
		95% Modified-t UCL (Johnson-1978)	14.28

Nonparametric Distribution Free UCLs

95% CLT UCL	13.25	95% Jackknife UCL	14.16
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.22	95% Chebyshev(Mean, Sd) UCL	15.19
97.5% Chebyshev(Mean, Sd) UCL	16.55	99% Chebyshev(Mean, Sd) UCL	19.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	71.1	Mean	73.73
Maximum	76.8	Median	73.3
SD	2.875	Std. Error of Mean	1.66
Coefficient of Variation	0.039	Skewness	0.663
Mean of logged Data	4.3	SD of logged Data	0.0388

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.58	95% Adjusted-CLT UCL (Chen-1995)	77.14
		95% Modified-t UCL (Johnson-1978)	78.69

Nonparametric Distribution Free UCLs

95% CLT UCL	76.46	95% Jackknife UCL	78.58
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	78.71	95% Chebyshev(Mean, Sd) UCL	80.97
97.5% Chebyshev(Mean, Sd) UCL	84.1	99% Chebyshev(Mean, Sd) UCL	90.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:11:04 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405269) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.662	Mean	0.975
Maximum	1.36	Median	0.909
SD	0.263	Std. Error of Mean	0.107
Coefficient of Variation	0.27	Skewness	0.535
Mean of logged Data	-0.0552	SD of logged Data	0.267

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.191	95% Adjusted-CLT UCL (Chen-1995)	1.177
		95% Modified-t UCL (Johnson-1978)	1.195

Nonparametric Distribution Free UCLs

95% CLT UCL	1.152	95% Jackknife UCL	1.191
95% Standard Bootstrap UCL	1.137	95% Bootstrap-t UCL	1.348
95% Hall's Bootstrap UCL	1.445	95% Percentile Bootstrap UCL	1.135
95% BCA Bootstrap UCL	1.16		
90% Chebyshev(Mean, Sd) UCL	1.297	95% Chebyshev(Mean, Sd) UCL	1.443
97.5% Chebyshev(Mean, Sd) UCL	1.646	99% Chebyshev(Mean, Sd) UCL	2.043

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.293	Mean	0.468
Maximum	0.535	Median	0.498
SD	0.0874	Std. Error of Mean	0.0357
Coefficient of Variation	0.187	Skewness	-2.241
Mean of logged Data	-0.777	SD of logged Data	0.223

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.54	95% Adjusted-CLT UCL (Chen-1995)	0.492
		95% Modified-t UCL (Johnson-1978)	0.535

Nonparametric Distribution Free UCLs

95% CLT UCL	0.527	95% Jackknife UCL	0.54
95% Standard Bootstrap UCL	0.521	95% Bootstrap-t UCL	0.516
95% Hall's Bootstrap UCL	0.501	95% Percentile Bootstrap UCL	0.51
95% BCA Bootstrap UCL	0.505		
90% Chebyshev(Mean, Sd) UCL	0.575	95% Chebyshev(Mean, Sd) UCL	0.624
97.5% Chebyshev(Mean, Sd) UCL	0.691	99% Chebyshev(Mean, Sd) UCL	0.823

Suggested UCL to Use

95% Student's-t UCL	0.54	or 95% Modified-t UCL	0.535

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.96	Mean	2.03
Maximum	2.165	Median	2.023
SD	0.0725	Std. Error of Mean	0.0296
Coefficient of Variation	0.0357	Skewness	1.533
Mean of logged Data	0.708	SD of logged Data	0.0351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.09	95% Adjusted-CLT UCL (Chen-1995)	2.099
		95% Modified-t UCL (Johnson-1978)	2.093

Nonparametric Distribution Free UCLs

95% CLT UCL	2.079	95% Jackknife UCL	2.09
95% Standard Bootstrap UCL	2.074	95% Bootstrap-t UCL	2.121
95% Hall's Bootstrap UCL	2.302	95% Percentile Bootstrap UCL	2.076
95% BCA Bootstrap UCL	2.088		
90% Chebyshev(Mean, Sd) UCL	2.119	95% Chebyshev(Mean, Sd) UCL	2.159
97.5% Chebyshev(Mean, Sd) UCL	2.215	99% Chebyshev(Mean, Sd) UCL	2.325

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.76	Mean	2.202
Maximum	3.25	Median	2.03
SD	0.53	Std. Error of Mean	0.216
Coefficient of Variation	0.241	Skewness	2.101
Mean of logged Data	0.769	SD of logged Data	0.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.638	95% Adjusted-CLT UCL (Chen-1995)	2.756
		95% Modified-t UCL (Johnson-1978)	2.669

Nonparametric Distribution Free UCLs

95% CLT UCL	2.558	95% Jackknife UCL	2.638
95% Standard Bootstrap UCL	2.539	95% Bootstrap-t UCL	3.468
95% Hall's Bootstrap UCL	4.7	95% Percentile Bootstrap UCL	2.584
95% BCA Bootstrap UCL	2.638		
90% Chebyshev(Mean, Sd) UCL	2.851	95% Chebyshev(Mean, Sd) UCL	3.145
97.5% Chebyshev(Mean, Sd) UCL	3.554	99% Chebyshev(Mean, Sd) UCL	4.356

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	2.859
Maximum	4.89	Median	2.505
SD	1.099	Std. Error of Mean	0.449
Coefficient of Variation	0.384	Skewness	1.588
Mean of logged Data	0.998	SD of logged Data	0.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.763	95% Adjusted-CLT UCL (Chen-1995)	3.908
		95% Modified-t UCL (Johnson-1978)	3.812

Nonparametric Distribution Free UCLs

95% CLT UCL	3.597	95% Jackknife UCL	3.763
95% Standard Bootstrap UCL	3.532	95% Bootstrap-t UCL	5.324
95% Hall's Bootstrap UCL	7.001	95% Percentile Bootstrap UCL	3.62
95% BCA Bootstrap UCL	3.773		
90% Chebyshev(Mean, Sd) UCL	4.205	95% Chebyshev(Mean, Sd) UCL	4.815
97.5% Chebyshev(Mean, Sd) UCL	5.662	99% Chebyshev(Mean, Sd) UCL	7.324

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	2.96	Mean	4.518
Maximum	7.8	Median	4.04
SD	1.81	Std. Error of Mean	0.739
Coefficient of Variation	0.401	Skewness	1.44
Mean of logged Data	1.449	SD of logged Data	0.364

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.006	95% Adjusted-CLT UCL (Chen-1995)	6.197
		95% Modified-t UCL (Johnson-1978)	6.079

Nonparametric Distribution Free UCLs

95% CLT UCL	5.733	95% Jackknife UCL	6.006
95% Standard Bootstrap UCL	5.625	95% Bootstrap-t UCL	7.56
95% Hall's Bootstrap UCL	12.68	95% Percentile Bootstrap UCL	5.717
95% BCA Bootstrap UCL	5.938		
90% Chebyshev(Mean, Sd) UCL	6.734	95% Chebyshev(Mean, Sd) UCL	7.738
97.5% Chebyshev(Mean, Sd) UCL	9.131	99% Chebyshev(Mean, Sd) UCL	11.87

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.28	Mean	3.068
Maximum	4.53	Median	2.998
SD	0.787	Std. Error of Mean	0.321
Coefficient of Variation	0.256	Skewness	1.508
Mean of logged Data	1.097	SD of logged Data	0.237

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	3.716	95% Adjusted-CLT UCL (Chen-1995)	3.808
		95% Modified-t UCL (Johnson-1978)	3.749

Nonparametric Distribution Free UCLs

95% CLT UCL	3.597	95% Jackknife UCL	3.716
95% Standard Bootstrap UCL	3.556	95% Bootstrap-t UCL	4.114
95% Hall's Bootstrap UCL	6.062	95% Percentile Bootstrap UCL	3.604
95% BCA Bootstrap UCL	3.681		
90% Chebyshev(Mean, Sd) UCL	4.032	95% Chebyshev(Mean, Sd) UCL	4.468
97.5% Chebyshev(Mean, Sd) UCL	5.074	99% Chebyshev(Mean, Sd) UCL	6.264

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	2.124
Maximum	2.56	Median	2.023
SD	0.224	Std. Error of Mean	0.0913
Coefficient of Variation	0.105	Skewness	2.027
Mean of logged Data	0.749	SD of logged Data	0.0988

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.308	95% Adjusted-CLT UCL (Chen-1995)	2.355
		95% Modified-t UCL (Johnson-1978)	2.321

Nonparametric Distribution Free UCLs

95% CLT UCL	2.274	95% Jackknife UCL	2.308
95% Standard Bootstrap UCL	2.258	95% Bootstrap-t UCL	3.36
95% Hall's Bootstrap UCL	3.469	95% Percentile Bootstrap UCL	2.284
95% BCA Bootstrap UCL	2.335		
90% Chebyshev(Mean, Sd) UCL	2.398	95% Chebyshev(Mean, Sd) UCL	2.522
97.5% Chebyshev(Mean, Sd) UCL	2.694	99% Chebyshev(Mean, Sd) UCL	3.032

Suggested UCL to Use

95% Student's-t UCL	2.308	or 95% Modified-t UCL	2.321

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	3.336
Maximum	5.09	Median	3.175
SD	1.105	Std. Error of Mean	0.451
Coefficient of Variation	0.331	Skewness	0.596
Mean of logged Data	1.159	SD of logged Data	0.333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.245	95% Adjusted-CLT UCL (Chen-1995)	4.195
		95% Modified-t UCL (Johnson-1978)	4.263

Nonparametric Distribution Free UCLs

95% CLT UCL	4.078	95% Jackknife UCL	4.245
95% Standard Bootstrap UCL	4.013	95% Bootstrap-t UCL	4.588
95% Hall's Bootstrap UCL	4.698	95% Percentile Bootstrap UCL	4.04
95% BCA Bootstrap UCL	4.085		
90% Chebyshev(Mean, Sd) UCL	4.69	95% Chebyshev(Mean, Sd) UCL	5.303
97.5% Chebyshev(Mean, Sd) UCL	6.154	99% Chebyshev(Mean, Sd) UCL	7.826

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.975	Mean	3.898
Maximum	6.6	Median	3.325
SD	1.784	Std. Error of Mean	0.728
Coefficient of Variation	0.458	Skewness	0.738
Mean of logged Data	1.274	SD of logged Data	0.454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.365	95% Adjusted-CLT UCL (Chen-1995)	5.33
		95% Modified-t UCL (Johnson-1978)	5.401

Nonparametric Distribution Free UCLs

95% CLT UCL	5.095	95% Jackknife UCL	5.365
95% Standard Bootstrap UCL	4.991	95% Bootstrap-t UCL	6.553
95% Hall's Bootstrap UCL	13.64	95% Percentile Bootstrap UCL	5.013
95% BCA Bootstrap UCL	5.158		
90% Chebyshev(Mean, Sd) UCL	6.082	95% Chebyshev(Mean, Sd) UCL	7.072
97.5% Chebyshev(Mean, Sd) UCL	8.445	99% Chebyshev(Mean, Sd) UCL	11.14

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.205	Mean	1.248
Maximum	1.33	Median	1.243
SD	0.0442	Std. Error of Mean	0.0181
Coefficient of Variation	0.0354	Skewness	1.476
Mean of logged Data	0.221	SD of logged Data	0.0349

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.285	95% Adjusted-CLT UCL (Chen-1995)	1.29
		95% Modified-t UCL (Johnson-1978)	1.287

Nonparametric Distribution Free UCLs

95% CLT UCL	1.278	95% Jackknife UCL	1.285

95% Standard Bootstrap UCL	1.276	95% Bootstrap-t UCL	1.304
95% Hall's Bootstrap UCL	1.422	95% Percentile Bootstrap UCL	1.279
95% BCA Bootstrap UCL	1.288		
90% Chebyshev(Mean, Sd) UCL	1.303	95% Chebyshev(Mean, Sd) UCL	1.327
97.5% Chebyshev(Mean, Sd) UCL	1.361	99% Chebyshev(Mean, Sd) UCL	1.428

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.18	Mean	3.015
Maximum	4.63	Median	2.983
SD	0.891	Std. Error of Mean	0.364
Coefficient of Variation	0.296	Skewness	1.319
Mean of logged Data	1.071	SD of logged Data	0.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.748	95% Adjusted-CLT UCL (Chen-1995)	3.823
		95% Modified-t UCL (Johnson-1978)	3.781

Nonparametric Distribution Free UCLs

95% CLT UCL	3.613	95% Jackknife UCL	3.748
95% Standard Bootstrap UCL	3.563	95% Bootstrap-t UCL	4.015
95% Hall's Bootstrap UCL	6.328	95% Percentile Bootstrap UCL	3.578
95% BCA Bootstrap UCL	3.707		
90% Chebyshev(Mean, Sd) UCL	4.106	95% Chebyshev(Mean, Sd) UCL	4.601
97.5% Chebyshev(Mean, Sd) UCL	5.287	99% Chebyshev(Mean, Sd) UCL	6.634

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.2	Mean	2.133
Maximum	3.51	Median	1.935
SD	0.894	Std. Error of Mean	0.365
Coefficient of Variation	0.419	Skewness	0.71
Mean of logged Data	0.686	SD of logged Data	0.415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.868	95% Adjusted-CLT UCL (Chen-1995)	2.846
		95% Modified-t UCL (Johnson-1978)	2.886

Nonparametric Distribution Free UCLs

95% CLT UCL	2.733	95% Jackknife UCL	2.868
95% Standard Bootstrap UCL	2.682	95% Bootstrap-t UCL	3.467
95% Hall's Bootstrap UCL	4.195	95% Percentile Bootstrap UCL	2.688
95% BCA Bootstrap UCL	2.772		
90% Chebyshev(Mean, Sd) UCL	3.228	95% Chebyshev(Mean, Sd) UCL	3.724
97.5% Chebyshev(Mean, Sd) UCL	4.412	99% Chebyshev(Mean, Sd) UCL	5.763

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.5	Mean	3.028
Maximum	3.33	Median	3.093
SD	0.278	Std. Error of Mean	0.113
Coefficient of Variation	0.0918	Skewness	-1.646
Mean of logged Data	1.104	SD of logged Data	0.0974

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.256	95% Adjusted-CLT UCL (Chen-1995)	3.133
		95% Modified-t UCL (Johnson-1978)	3.243

Nonparametric Distribution Free UCLs

95% CLT UCL	3.214	95% Jackknife UCL	3.256
95% Standard Bootstrap UCL	3.196	95% Bootstrap-t UCL	3.176
95% Hall's Bootstrap UCL	3.148	95% Percentile Bootstrap UCL	3.173
95% BCA Bootstrap UCL	3.153		
90% Chebyshev(Mean, Sd) UCL	3.368	95% Chebyshev(Mean, Sd) UCL	3.522
97.5% Chebyshev(Mean, Sd) UCL	3.736	99% Chebyshev(Mean, Sd) UCL	4.156

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.56	Mean	3.793
Maximum	5.87	Median	3.323
SD	1.273	Std. Error of Mean	0.52
Coefficient of Variation	0.336	Skewness	1.002
Mean of logged Data	1.289	SD of logged Data	0.317

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.84	95% Adjusted-CLT UCL (Chen-1995)	4.874
		95% Modified-t UCL (Johnson-1978)	4.875

Nonparametric Distribution Free UCLs

95% CLT UCL	4.647	95% Jackknife UCL	4.84
95% Standard Bootstrap UCL	4.551	95% Bootstrap-t UCL	6.129
95% Hall's Bootstrap UCL	10.28	95% Percentile Bootstrap UCL	4.63

95% BCA Bootstrap UCL	4.648		
90% Chebyshev(Mean, Sd) UCL	5.352	95% Chebyshev(Mean, Sd) UCL	6.058
97.5% Chebyshev(Mean, Sd) UCL	7.038	99% Chebyshev(Mean, Sd) UCL	8.964

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	23.52
Maximum	38.2	Median	20.8
SD	10.53	Std. Error of Mean	4.299
Coefficient of Variation	0.448	Skewness	0.528
Mean of logged Data	3.074	SD of logged Data	0.449

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.18	95% Adjusted-CLT UCL (Chen-1995)	31.58
		95% Modified-t UCL (Johnson-1978)	32.33

Nonparametric Distribution Free UCLs

95% CLT UCL	30.59	95% Jackknife UCL	32.18
95% Standard Bootstrap UCL	30	95% Bootstrap-t UCL	34.02
95% Hall's Bootstrap UCL	31.27	95% Percentile Bootstrap UCL	29.82
95% BCA Bootstrap UCL	30.83		
90% Chebyshev(Mean, Sd) UCL	36.41	95% Chebyshev(Mean, Sd) UCL	42.25
97.5% Chebyshev(Mean, Sd) UCL	50.36	99% Chebyshev(Mean, Sd) UCL	66.29

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.48	Mean	10.87
Maximum	13.1	Median	10.71
SD	1.869	Std. Error of Mean	0.763
Coefficient of Variation	0.172	Skewness	0.0149
Mean of logged Data	2.374	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.41	95% Adjusted-CLT UCL (Chen-1995)	12.13
		95% Modified-t UCL (Johnson-1978)	12.41

Nonparametric Distribution Free UCLs

95% CLT UCL	12.13	95% Jackknife UCL	12.41
95% Standard Bootstrap UCL	12.01	95% Bootstrap-t UCL	12.79
95% Hall's Bootstrap UCL	12.01	95% Percentile Bootstrap UCL	12.04
95% BCA Bootstrap UCL	12.01		
90% Chebyshev(Mean, Sd) UCL	13.16	95% Chebyshev(Mean, Sd) UCL	14.2
97.5% Chebyshev(Mean, Sd) UCL	15.64	99% Chebyshev(Mean, Sd) UCL	18.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.8	Mean	50.88
Maximum	58.7	Median	51.45
SD	7.929	Std. Error of Mean	3.237
Coefficient of Variation	0.156	Skewness	-0.095
Mean of logged Data	3.919	SD of logged Data	0.158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57.41	95% Adjusted-CLT UCL (Chen-1995)	56.07
		95% Modified-t UCL (Johnson-1978)	57.39

Nonparametric Distribution Free UCLs

95% CLT UCL	56.21	95% Jackknife UCL	57.41
95% Standard Bootstrap UCL	55.76	95% Bootstrap-t UCL	57.54
95% Hall's Bootstrap UCL	53.88	95% Percentile Bootstrap UCL	55.85
95% BCA Bootstrap UCL	55.53		
90% Chebyshev(Mean, Sd) UCL	60.59	95% Chebyshev(Mean, Sd) UCL	64.99
97.5% Chebyshev(Mean, Sd) UCL	71.1	99% Chebyshev(Mean, Sd) UCL	83.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:13:14 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405289) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.12	Mean	3.275
Maximum	5.43	Median	3.415
SD	1.552	Std. Error of Mean	0.633
Coefficient of Variation	0.474	Skewness	-0.0898
Mean of logged Data	1.067	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.551	95% Adjusted-CLT UCL (Chen-1995)	4.292
		95% Modified-t UCL (Johnson-1978)	4.548

Nonparametric Distribution Free UCLs

95% CLT UCL	4.317	95% Jackknife UCL	4.551
95% Standard Bootstrap UCL	4.216	95% Bootstrap-t UCL	4.465
95% Hall's Bootstrap UCL	4.313	95% Percentile Bootstrap UCL	4.24
95% BCA Bootstrap UCL	4.183		
90% Chebyshev(Mean, Sd) UCL	5.175	95% Chebyshev(Mean, Sd) UCL	6.036
97.5% Chebyshev(Mean, Sd) UCL	7.231	99% Chebyshev(Mean, Sd) UCL	9.578

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.503	Mean	0.966
Maximum	1.5	Median	1.03
SD	0.377	Std. Error of Mean	0.154
Coefficient of Variation	0.39	Skewness	-0.0175
Mean of logged Data	-0.106	SD of logged Data	0.429

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.276	95% Adjusted-CLT UCL (Chen-1995)	1.218
		95% Modified-t UCL (Johnson-1978)	1.276

Nonparametric Distribution Free UCLs

95% CLT UCL	1.219	95% Jackknife UCL	1.276
95% Standard Bootstrap UCL	1.196	95% Bootstrap-t UCL	1.271
95% Hall's Bootstrap UCL	1.186	95% Percentile Bootstrap UCL	1.188
95% BCA Bootstrap UCL	1.188		
90% Chebyshev(Mean, Sd) UCL	1.428	95% Chebyshev(Mean, Sd) UCL	1.637
97.5% Chebyshev(Mean, Sd) UCL	1.927	99% Chebyshev(Mean, Sd) UCL	2.497

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.02	Mean	3.365
Maximum	4.69	Median	3.545
SD	1.208	Std. Error of Mean	0.493
Coefficient of Variation	0.359	Skewness	-0.138
Mean of logged Data	1.154	SD of logged Data	0.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.359	95% Adjusted-CLT UCL (Chen-1995)	4.147
		95% Modified-t UCL (Johnson-1978)	4.354

Nonparametric Distribution Free UCLs

95% CLT UCL	4.176	95% Jackknife UCL	4.359
95% Standard Bootstrap UCL	4.114	95% Bootstrap-t UCL	4.357
95% Hall's Bootstrap UCL	3.873	95% Percentile Bootstrap UCL	4.117
95% BCA Bootstrap UCL	4.06		
90% Chebyshev(Mean, Sd) UCL	4.845	95% Chebyshev(Mean, Sd) UCL	5.515
97.5% Chebyshev(Mean, Sd) UCL	6.445	99% Chebyshev(Mean, Sd) UCL	8.273

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.78	Mean	20.43
Maximum	29.6	Median	22.9
SD	8.332	Std. Error of Mean	3.401
Coefficient of Variation	0.408	Skewness	-0.524
Mean of logged Data	2.93	SD of logged Data	0.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.28	95% Adjusted-CLT UCL (Chen-1995)	25.25
		95% Modified-t UCL (Johnson-1978)	27.16

Nonparametric Distribution Free UCLs

95% CLT UCL	26.02	95% Jackknife UCL	27.28
95% Standard Bootstrap UCL	25.48	95% Bootstrap-t UCL	25.76

95% Hall's Bootstrap UCL	24.48	95% Percentile Bootstrap UCL	25.55
95% BCA Bootstrap UCL	24.98		
90% Chebyshev(Mean, Sd) UCL	30.63	95% Chebyshev(Mean, Sd) UCL	35.26
97.5% Chebyshev(Mean, Sd) UCL	41.67	99% Chebyshev(Mean, Sd) UCL	54.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.5	Mean	28.28
Maximum	39.6	Median	31.7
SD	11.26	Std. Error of Mean	4.596
Coefficient of Variation	0.398	Skewness	-0.59
Mean of logged Data	3.259	SD of logged Data	0.473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.54	95% Adjusted-CLT UCL (Chen-1995)	34.66
		95% Modified-t UCL (Johnson-1978)	37.36

Nonparametric Distribution Free UCLs

95% CLT UCL	35.84	95% Jackknife UCL	37.54
95% Standard Bootstrap UCL	35.06	95% Bootstrap-t UCL	35.88
95% Hall's Bootstrap UCL	33.55	95% Percentile Bootstrap UCL	35.05
95% BCA Bootstrap UCL	34.17		
90% Chebyshev(Mean, Sd) UCL	42.07	95% Chebyshev(Mean, Sd) UCL	48.32
97.5% Chebyshev(Mean, Sd) UCL	56.99	99% Chebyshev(Mean, Sd) UCL	74.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16.4	Mean	42.05
Maximum	62.8	Median	43.9
SD	17.3	Std. Error of Mean	7.062
Coefficient of Variation	0.411	Skewness	-0.417
Mean of logged Data	3.648	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.28	95% Adjusted-CLT UCL (Chen-1995)	52.38
		95% Modified-t UCL (Johnson-1978)	56.08

Nonparametric Distribution Free UCLs

95% CLT UCL	53.67	95% Jackknife UCL	56.28
95% Standard Bootstrap UCL	52.49	95% Bootstrap-t UCL	53.99
95% Hall's Bootstrap UCL	53.51	95% Percentile Bootstrap UCL	52.6
95% BCA Bootstrap UCL	52.18		
90% Chebyshev(Mean, Sd) UCL	63.23	95% Chebyshev(Mean, Sd) UCL	72.83
97.5% Chebyshev(Mean, Sd) UCL	86.15	99% Chebyshev(Mean, Sd) UCL	112.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.5	Mean	26.75
Maximum	40.3	Median	25.15

SD	10.89	Std. Error of Mean	4.446
Coefficient of Variation	0.407	Skewness	-0.16
Mean of logged Data	3.201	SD of logged Data	0.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.71	95% Adjusted-CLT UCL (Chen-1995)	33.75
		95% Modified-t UCL (Johnson-1978)	35.66

Nonparametric Distribution Free UCLs

95% CLT UCL	34.06	95% Jackknife UCL	35.71
95% Standard Bootstrap UCL	33.41	95% Bootstrap-t UCL	36.94
95% Hall's Bootstrap UCL	40.37	95% Percentile Bootstrap UCL	33.65
95% BCA Bootstrap UCL	33.6		
90% Chebyshev(Mean, Sd) UCL	40.09	95% Chebyshev(Mean, Sd) UCL	46.13
97.5% Chebyshev(Mean, Sd) UCL	54.51	99% Chebyshev(Mean, Sd) UCL	70.99

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.19	Mean	15.55
Maximum	22.4	Median	16.5
SD	6.3	Std. Error of Mean	2.572
Coefficient of Variation	0.405	Skewness	-0.527
Mean of logged Data	2.656	SD of logged Data	0.493

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.73	95% Adjusted-CLT UCL (Chen-1995)	19.19
		95% Modified-t UCL (Johnson-1978)	20.64

Nonparametric Distribution Free UCLs

95% CLT UCL	19.78	95% Jackknife UCL	20.73
95% Standard Bootstrap UCL	19.52	95% Bootstrap-t UCL	20.09
95% Hall's Bootstrap UCL	19.5	95% Percentile Bootstrap UCL	19.25
95% BCA Bootstrap UCL	19.17		
90% Chebyshev(Mean, Sd) UCL	23.26	95% Chebyshev(Mean, Sd) UCL	26.76
97.5% Chebyshev(Mean, Sd) UCL	31.61	99% Chebyshev(Mean, Sd) UCL	41.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.3	Mean	33.38
Maximum	49.7	Median	36
SD	13.85	Std. Error of Mean	5.656
Coefficient of Variation	0.415	Skewness	-0.484
Mean of logged Data	3.416	SD of logged Data	0.503

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.78	95% Adjusted-CLT UCL (Chen-1995)	41.49
		95% Modified-t UCL (Johnson-1978)	44.59

Nonparametric Distribution Free UCLs

95% CLT UCL	42.69	95% Jackknife UCL	44.78
95% Standard Bootstrap UCL	42.03	95% Bootstrap-t UCL	43.06
95% Hall's Bootstrap UCL	40.64	95% Percentile Bootstrap UCL	41.72
95% BCA Bootstrap UCL	41.25		
90% Chebyshev(Mean, Sd) UCL	50.35	95% Chebyshev(Mean, Sd) UCL	58.04
97.5% Chebyshev(Mean, Sd) UCL	68.71	99% Chebyshev(Mean, Sd) UCL	89.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.5	Mean	5.828
Maximum	8.15	Median	6.41
SD	2.279	Std. Error of Mean	0.931
Coefficient of Variation	0.391	Skewness	-0.643
Mean of logged Data	1.681	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.704	95% Adjusted-CLT UCL (Chen-1995)	7.098
		95% Modified-t UCL (Johnson-1978)	7.663

Nonparametric Distribution Free UCLs

95% CLT UCL	7.359	95% Jackknife UCL	7.704
95% Standard Bootstrap UCL	7.233	95% Bootstrap-t UCL	7.404
95% Hall's Bootstrap UCL	6.875	95% Percentile Bootstrap UCL	7.155
95% BCA Bootstrap UCL	7.072		
90% Chebyshev(Mean, Sd) UCL	8.62	95% Chebyshev(Mean, Sd) UCL	9.885
97.5% Chebyshev(Mean, Sd) UCL	11.64	99% Chebyshev(Mean, Sd) UCL	15.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.8	Mean	39.25
Maximum	55.9	Median	44.45
SD	16.84	Std. Error of Mean	6.876
Coefficient of Variation	0.429	Skewness	-0.611
Mean of logged Data	3.568	SD of logged Data	0.531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	53.11	95% Adjusted-CLT UCL (Chen-1995)	48.73
		95% Modified-t UCL (Johnson-1978)	52.82

Nonparametric Distribution Free UCLs

95% CLT UCL	50.56	95% Jackknife UCL	53.11
95% Standard Bootstrap UCL	49.46	95% Bootstrap-t UCL	51.67
95% Hall's Bootstrap UCL	46.89	95% Percentile Bootstrap UCL	49.17
95% BCA Bootstrap UCL	47.83		
90% Chebyshev(Mean, Sd) UCL	59.88	95% Chebyshev(Mean, Sd) UCL	69.22
97.5% Chebyshev(Mean, Sd) UCL	82.19	99% Chebyshev(Mean, Sd) UCL	107.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.82	Mean	23.8
Maximum	34.6	Median	25.1
SD	9.776	Std. Error of Mean	3.991
Coefficient of Variation	0.411	Skewness	-0.426
Mean of logged Data	3.081	SD of logged Data	0.49

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.85	95% Adjusted-CLT UCL (Chen-1995)	29.63
		95% Modified-t UCL (Johnson-1978)	31.73

Nonparametric Distribution Free UCLs

95% CLT UCL	30.37	95% Jackknife UCL	31.85
95% Standard Bootstrap UCL	29.89	95% Bootstrap-t UCL	30.89
95% Hall's Bootstrap UCL	29.97	95% Percentile Bootstrap UCL	29.65
95% BCA Bootstrap UCL	29.47		
90% Chebyshev(Mean, Sd) UCL	35.78	95% Chebyshev(Mean, Sd) UCL	41.2
97.5% Chebyshev(Mean, Sd) UCL	48.73	99% Chebyshev(Mean, Sd) UCL	63.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.37	Mean	3.768
Maximum	6.54	Median	3.675
SD	1.724	Std. Error of Mean	0.704
Coefficient of Variation	0.457	Skewness	0.416
Mean of logged Data	1.224	SD of logged Data	0.525

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.186	95% Adjusted-CLT UCL (Chen-1995)	5.054
		95% Modified-t UCL (Johnson-1978)	5.206

Nonparametric Distribution Free UCLs

95% CLT UCL	4.926	95% Jackknife UCL	5.186
95% Standard Bootstrap UCL	4.79	95% Bootstrap-t UCL	5.327
95% Hall's Bootstrap UCL	5.665	95% Percentile Bootstrap UCL	4.865
95% BCA Bootstrap UCL	4.865		
90% Chebyshev(Mean, Sd) UCL	5.88	95% Chebyshev(Mean, Sd) UCL	6.836
97.5% Chebyshev(Mean, Sd) UCL	8.163	99% Chebyshev(Mean, Sd) UCL	10.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.24	Mean	15.27
Maximum	21.6	Median	16.9
SD	6.227	Std. Error of Mean	2.542
Coefficient of Variation	0.408	Skewness	-0.555
Mean of logged Data	2.637	SD of logged Data	0.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.39	95% Adjusted-CLT UCL (Chen-1995)	18.84
		95% Modified-t UCL (Johnson-1978)	20.3

Nonparametric Distribution Free UCLs

95% CLT UCL	19.45	95% Jackknife UCL	20.39
95% Standard Bootstrap UCL	19.14	95% Bootstrap-t UCL	19.88
95% Hall's Bootstrap UCL	18.15	95% Percentile Bootstrap UCL	18.95
95% BCA Bootstrap UCL	18.73		
90% Chebyshev(Mean, Sd) UCL	22.9	95% Chebyshev(Mean, Sd) UCL	26.35
97.5% Chebyshev(Mean, Sd) UCL	31.15	99% Chebyshev(Mean, Sd) UCL	40.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.1	Mean	39.12
Maximum	52.7	Median	46.2
SD	16.17	Std. Error of Mean	6.6
Coefficient of Variation	0.413	Skewness	-0.869
Mean of logged Data	3.569	SD of logged Data	0.522

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.42	95% Adjusted-CLT UCL (Chen-1995)	47.47
		95% Modified-t UCL (Johnson-1978)	52.03

Nonparametric Distribution Free UCLs

95% CLT UCL	49.97	95% Jackknife UCL	52.42
95% Standard Bootstrap UCL	48.97	95% Bootstrap-t UCL	50.21
95% Hall's Bootstrap UCL	46.03	95% Percentile Bootstrap UCL	49
95% BCA Bootstrap UCL	47.25		
90% Chebyshev(Mean, Sd) UCL	58.92	95% Chebyshev(Mean, Sd) UCL	67.88
97.5% Chebyshev(Mean, Sd) UCL	80.33	99% Chebyshev(Mean, Sd) UCL	104.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	14.67
Maximum	17.7	Median	14.4
SD	2.177	Std. Error of Mean	0.889

Coefficient of Variation	0.148	Skewness	0.238
Mean of logged Data	2.676	SD of logged Data	0.148

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.46	95% Adjusted-CLT UCL (Chen-1995)	16.22
		95% Modified-t UCL (Johnson-1978)	16.47

Nonparametric Distribution Free UCLs

95% CLT UCL	16.13	95% Jackknife UCL	16.46
95% Standard Bootstrap UCL	16.01	95% Bootstrap-t UCL	16.51
95% Hall's Bootstrap UCL	15.96	95% Percentile Bootstrap UCL	16.02
95% BCA Bootstrap UCL	16		
90% Chebyshev(Mean, Sd) UCL	17.33	95% Chebyshev(Mean, Sd) UCL	18.54
97.5% Chebyshev(Mean, Sd) UCL	20.22	99% Chebyshev(Mean, Sd) UCL	23.51

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12.5	Mean	23.37
Maximum	32.5	Median	25.6
SD	7.552	Std. Error of Mean	3.083
Coefficient of Variation	0.323	Skewness	-0.548
Mean of logged Data	3.1	SD of logged Data	0.367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.58	95% Adjusted-CLT UCL (Chen-1995)	27.7
		95% Modified-t UCL (Johnson-1978)	29.46

Nonparametric Distribution Free UCLs

95% CLT UCL	28.44	95% Jackknife UCL	29.58
95% Standard Bootstrap UCL	27.94	95% Bootstrap-t UCL	29.4
95% Hall's Bootstrap UCL	27.13	95% Percentile Bootstrap UCL	28.03
95% BCA Bootstrap UCL	27.72		
90% Chebyshev(Mean, Sd) UCL	32.62	95% Chebyshev(Mean, Sd) UCL	36.81
97.5% Chebyshev(Mean, Sd) UCL	42.62	99% Chebyshev(Mean, Sd) UCL	54.04

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45	Mean	74.05
Maximum	111	Median	74.15
SD	26.52	Std. Error of Mean	10.83
Coefficient of Variation	0.358	Skewness	0.262
Mean of logged Data	4.249	SD of logged Data	0.368

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	95.87	95% Adjusted-CLT UCL (Chen-1995)	93.1
		95% Modified-t UCL (Johnson-1978)	96.06

Nonparametric Distribution Free UCLs

95% CLT UCL	91.86	95% Jackknife UCL	95.87
95% Standard Bootstrap UCL	89.96	95% Bootstrap-t UCL	99.97
95% Hall's Bootstrap UCL	86.64	95% Percentile Bootstrap UCL	90.23
95% BCA Bootstrap UCL	90.2		
90% Chebyshev(Mean, Sd) UCL	106.5	95% Chebyshev(Mean, Sd) UCL	121.3
97.5% Chebyshev(Mean, Sd) UCL	141.7	99% Chebyshev(Mean, Sd) UCL	181.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:15:13 AM
From File	Table 1. Parcel Analytical Resulta (Kingman APN32405290) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	3.35	Mean	3.89
Maximum	4.28	Median	4.04
SD	0.483	Std. Error of Mean	0.279
Coefficient of Variation	0.124	Skewness	-1.263
Mean of logged Data	1.353	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.704	95% Adjusted-CLT UCL (Chen-1995)	4.131
		95% Modified-t UCL (Johnson-1978)	4.67

Nonparametric Distribution Free UCLs

95% CLT UCL	4.348	95% Jackknife UCL	4.704
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	4.726	95% Chebyshev(Mean, Sd) UCL	5.105
97.5% Chebyshev(Mean, Sd) UCL	5.631	99% Chebyshev(Mean, Sd) UCL	6.663

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.68	Mean	2.203
Maximum	2.91	Median	2.02
SD	0.635	Std. Error of Mean	0.367
Coefficient of Variation	0.288	Skewness	1.191
Mean of logged Data	0.763	SD of logged Data	0.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.274	95% Adjusted-CLT UCL (Chen-1995)	3.076
		95% Modified-t UCL (Johnson-1978)	3.316

Nonparametric Distribution Free UCLs

95% CLT UCL	2.807	95% Jackknife UCL	3.274
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	3.303	95% Chebyshev(Mean, Sd) UCL	3.802
97.5% Chebyshev(Mean, Sd) UCL	4.493	99% Chebyshev(Mean, Sd) UCL	5.852

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	10.6	Mean	11.43
Maximum	12	Median	11.7
SD	0.737	Std. Error of Mean	0.426
Coefficient of Variation	0.0645	Skewness	-1.415
Mean of logged Data	2.435	SD of logged Data	0.0655

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.68	95% Adjusted-CLT UCL (Chen-1995)	11.76
		95% Modified-t UCL (Johnson-1978)	12.62

Nonparametric Distribution Free UCLs

95% CLT UCL	12.13	95% Jackknife UCL	12.68
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.71	95% Chebyshev(Mean, Sd) UCL	13.29
97.5% Chebyshev(Mean, Sd) UCL	14.09	99% Chebyshev(Mean, Sd) UCL	15.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	44.1	Mean	46.43
Maximum	47.8	Median	47.4
SD	2.031	Std. Error of Mean	1.172
Coefficient of Variation	0.0437	Skewness	-1.657
Mean of logged Data	3.837	SD of logged Data	0.0443

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.86	95% Adjusted-CLT UCL (Chen-1995)	47.16
		95% Modified-t UCL (Johnson-1978)	49.67

Nonparametric Distribution Free UCLs

95% CLT UCL	48.36	95% Jackknife UCL	49.86
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	49.95	95% Chebyshev(Mean, Sd) UCL	51.54

97.5% Chebyshev(Mean, Sd) UCL	53.75	99% Chebyshev(Mean, Sd) UCL	58.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	62.8	Mean	62.87
Maximum	62.9	Median	62.9
SD	0.0577	Std. Error of Mean	0.0333
Coefficient of Variation	9.1837E-4	Skewness	-1.732
Mean of logged Data	4.141	SD of logged Data	9.1862E-4

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.96	95% Adjusted-CLT UCL (Chen-1995)	62.89
		95% Modified-t UCL (Johnson-1978)	62.96

Nonparametric Distribution Free UCLs

95% CLT UCL	62.92	95% Jackknife UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	62.97	95% Chebyshev(Mean, Sd) UCL	63.01
97.5% Chebyshev(Mean, Sd) UCL	63.07	99% Chebyshev(Mean, Sd) UCL	63.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	102	Mean	107.7
Maximum	112	Median	109
SD	5.132	Std. Error of Mean	2.963
Coefficient of Variation	0.0477	Skewness	-1.09
Mean of logged Data	4.678	SD of logged Data	0.0481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	116.3	95% Adjusted-CLT UCL (Chen-1995)	110.5
		95% Modified-t UCL (Johnson-1978)	116

Nonparametric Distribution Free UCLs

95% CLT UCL	112.5	95% Jackknife UCL	116.3
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	116.6	95% Chebyshev(Mean, Sd) UCL	120.6
97.5% Chebyshev(Mean, Sd) UCL	126.2	99% Chebyshev(Mean, Sd) UCL	137.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	45.4	Mean	47.17
Maximum	50.2	Median	45.9
SD	2.639	Std. Error of Mean	1.524
Coefficient of Variation	0.0559	Skewness	1.662
Mean of logged Data	3.853	SD of logged Data	0.0551

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.62	95% Adjusted-CLT UCL (Chen-1995)	51.24
		95% Modified-t UCL (Johnson-1978)	51.86

Nonparametric Distribution Free UCLs

95% CLT UCL	49.67	95% Jackknife UCL	51.62
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	51.74	95% Chebyshev(Mean, Sd) UCL	53.81
97.5% Chebyshev(Mean, Sd) UCL	56.68	99% Chebyshev(Mean, Sd) UCL	62.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	40.1	Mean	41.2
Maximum	42	Median	41.5
SD	0.985	Std. Error of Mean	0.569
Coefficient of Variation	0.0239	Skewness	-1.244
Mean of logged Data	3.718	SD of logged Data	0.024

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.86	95% Adjusted-CLT UCL (Chen-1995)	41.7
		95% Modified-t UCL (Johnson-1978)	42.79

Nonparametric Distribution Free UCLs

95% CLT UCL	42.14	95% Jackknife UCL	42.86

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	42.91	95% Chebyshev(Mean, Sd) UCL	43.68
97.5% Chebyshev(Mean, Sd) UCL	44.75	99% Chebyshev(Mean, Sd) UCL	46.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	102	Mean	113.7
Maximum	121	Median	118
SD	10.21	Std. Error of Mean	5.897
Coefficient of Variation	0.0899	Skewness	-1.565
Mean of logged Data	4.73	SD of logged Data	0.0922

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.9	95% Adjusted-CLT UCL (Chen-1995)	117.7
		95% Modified-t UCL (Johnson-1978)	130

Nonparametric Distribution Free UCLs

95% CLT UCL	123.4	95% Jackknife UCL	130.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	131.4	95% Chebyshev(Mean, Sd) UCL	139.4
97.5% Chebyshev(Mean, Sd) UCL	150.5	99% Chebyshev(Mean, Sd) UCL	172.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	11.7	Mean	12.23
Maximum	12.7	Median	12.3
SD	0.503	Std. Error of Mean	0.291
Coefficient of Variation	0.0411	Skewness	-0.586
Mean of logged Data	2.504	SD of logged Data	0.0413

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.08	95% Adjusted-CLT UCL (Chen-1995)	12.61
		95% Modified-t UCL (Johnson-1978)	13.07

Nonparametric Distribution Free UCLs

95% CLT UCL	12.71	95% Jackknife UCL	13.08
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	13.11	95% Chebyshev(Mean, Sd) UCL	13.5
97.5% Chebyshev(Mean, Sd) UCL	14.05	99% Chebyshev(Mean, Sd) UCL	15.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	180	Mean	199

Maximum	216	Median	201
SD	18.08	Std. Error of Mean	10.44
Coefficient of Variation	0.0909	Skewness	-0.492
Mean of logged Data	5.291	SD of logged Data	0.0918

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	229.5	95% Adjusted-CLT UCL (Chen-1995)	213
		95% Modified-t UCL (Johnson-1978)	229

Nonparametric Distribution Free UCLs

95% CLT UCL	216.2	95% Jackknife UCL	229.5
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	230.3	95% Chebyshev(Mean, Sd) UCL	244.5
97.5% Chebyshev(Mean, Sd) UCL	264.2	99% Chebyshev(Mean, Sd) UCL	302.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	1.13	Mean	1.34
Maximum	1.58	Median	1.31
SD	0.226	Std. Error of Mean	0.131
Coefficient of Variation	0.169	Skewness	0.586
Mean of logged Data	0.283	SD of logged Data	0.168

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.722	95% Adjusted-CLT UCL (Chen-1995)	1.602
		95% Modified-t UCL (Johnson-1978)	1.729

Nonparametric Distribution Free UCLs

95% CLT UCL	1.555	95% Jackknife UCL	1.722
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.732	95% Chebyshev(Mean, Sd) UCL	1.91
97.5% Chebyshev(Mean, Sd) UCL	2.157	99% Chebyshev(Mean, Sd) UCL	2.641

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	50.6	Mean	51.17
Maximum	51.8	Median	51.1
SD	0.603	Std. Error of Mean	0.348
Coefficient of Variation	0.0118	Skewness	0.492
Mean of logged Data	3.935	SD of logged Data	0.0118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.18	95% Adjusted-CLT UCL (Chen-1995)	51.84
		95% Modified-t UCL (Johnson-1978)	52.2

Nonparametric Distribution Free UCLs

95% CLT UCL	51.74	95% Jackknife UCL	52.18
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	52.21	95% Chebyshev(Mean, Sd) UCL	52.68
97.5% Chebyshev(Mean, Sd) UCL	53.34	99% Chebyshev(Mean, Sd) UCL	54.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	4.45	Mean	5.337
Maximum	6.08	Median	5.48
SD	0.824	Std. Error of Mean	0.476
Coefficient of Variation	0.154	Skewness	-0.759
Mean of logged Data	1.666	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.726	95% Adjusted-CLT UCL (Chen-1995)	5.897
		95% Modified-t UCL (Johnson-1978)	6.692

Nonparametric Distribution Free UCLs

95% CLT UCL	6.12	95% Jackknife UCL	6.726
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	6.765	95% Chebyshev(Mean, Sd) UCL	7.411
97.5% Chebyshev(Mean, Sd) UCL	8.309	99% Chebyshev(Mean, Sd) UCL	10.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	87.3	Mean	99.67
Maximum	121	Median	90.7
SD	18.55	Std. Error of Mean	10.71
Coefficient of Variation	0.186	Skewness	1.667
Mean of logged Data	4.591	SD of logged Data	0.178

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.9	95% Adjusted-CLT UCL (Chen-1995)	128.3
		95% Modified-t UCL (Johnson-1978)	132.7

Nonparametric Distribution Free UCLs

95% CLT UCL	117.3	95% Jackknife UCL	130.9
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	131.8	95% Chebyshev(Mean, Sd) UCL	146.4
97.5% Chebyshev(Mean, Sd) UCL	166.6	99% Chebyshev(Mean, Sd) UCL	206.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	155	Mean	165
Maximum	174	Median	166
SD	9.539	Std. Error of Mean	5.508
Coefficient of Variation	0.0578	Skewness	-0.467
Mean of logged Data	5.105	SD of logged Data	0.0581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	181.1	95% Adjusted-CLT UCL (Chen-1995)	172.5
		95% Modified-t UCL (Johnson-1978)	180.8

Nonparametric Distribution Free UCLs

95% CLT UCL	174.1	95% Jackknife UCL	181.1
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	181.5	95% Chebyshev(Mean, Sd) UCL	189
97.5% Chebyshev(Mean, Sd) UCL	199.4	99% Chebyshev(Mean, Sd) UCL	219.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	14.5	Mean	15.53
Maximum	16.2	Median	15.9
SD	0.907	Std. Error of Mean	0.524
Coefficient of Variation	0.0584	Skewness	-1.521
Mean of logged Data	2.742	SD of logged Data	0.0594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.06	95% Adjusted-CLT UCL (Chen-1995)	15.9
		95% Modified-t UCL (Johnson-1978)	16.99

Nonparametric Distribution Free UCLs

95% CLT UCL	16.4	95% Jackknife UCL	17.06
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	17.1	95% Chebyshev(Mean, Sd) UCL	17.82
97.5% Chebyshev(Mean, Sd) UCL	18.8	99% Chebyshev(Mean, Sd) UCL	20.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	17.5	Mean	20.2
Maximum	25	Median	18.1
SD	4.168	Std. Error of Mean	2.406
Coefficient of Variation	0.206	Skewness	1.692
Mean of logged Data	2.992	SD of logged Data	0.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.23	95% Adjusted-CLT UCL (Chen-1995)	26.67
		95% Modified-t UCL (Johnson-1978)	27.62

Nonparametric Distribution Free UCLs

95% CLT UCL	24.16	95% Jackknife UCL	27.23
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	27.42	95% Chebyshev(Mean, Sd) UCL	30.69
97.5% Chebyshev(Mean, Sd) UCL	35.23	99% Chebyshev(Mean, Sd) UCL	44.14

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3

		Number of Missing Observations	0
Minimum	94.8	Mean	100.6
Maximum	104	Median	103
SD	5.048	Std. Error of Mean	2.914
Coefficient of Variation	0.0502	Skewness	-1.656
Mean of logged Data	4.61	SD of logged Data	0.0509

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	109.1	95% Adjusted-CLT UCL (Chen-1995)	102.4
		95% Modified-t UCL (Johnson-1978)	108.6

Nonparametric Distribution Free UCLs

95% CLT UCL	105.4	95% Jackknife UCL	109.1
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	109.3	95% Chebyshev(Mean, Sd) UCL	113.3
97.5% Chebyshev(Mean, Sd) UCL	118.8	99% Chebyshev(Mean, Sd) UCL	129.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:06:40 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32436008) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.06	Mean	1.637
Maximum	2.38	Median	1.48
SD	0.511	Std. Error of Mean	0.209
Coefficient of Variation	0.312	Skewness	0.618
Mean of logged Data	0.453	SD of logged Data	0.307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.057	95% Adjusted-CLT UCL (Chen-1995)	2.036
		95% Modified-t UCL (Johnson-1978)	2.066

Nonparametric Distribution Free UCLs

95% CLT UCL	1.98	95% Jackknife UCL	2.057
95% Standard Bootstrap UCL	1.95	95% Bootstrap-t UCL	2.341
95% Hall's Bootstrap UCL	2.945	95% Percentile Bootstrap UCL	1.957
95% BCA Bootstrap UCL	1.95		
90% Chebyshev(Mean, Sd) UCL	2.262	95% Chebyshev(Mean, Sd) UCL	2.546
97.5% Chebyshev(Mean, Sd) UCL	2.939	99% Chebyshev(Mean, Sd) UCL	3.712

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.437	Mean	1.297
Maximum	2.46	Median	1.09
SD	0.699	Std. Error of Mean	0.285
Coefficient of Variation	0.539	Skewness	0.847
Mean of logged Data	0.129	SD of logged Data	0.583

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.872	95% Adjusted-CLT UCL (Chen-1995)	1.871
		95% Modified-t UCL (Johnson-1978)	1.888

Nonparametric Distribution Free UCLs

95% CLT UCL	1.766	95% Jackknife UCL	1.872
95% Standard Bootstrap UCL	1.722	95% Bootstrap-t UCL	2.291
95% Hall's Bootstrap UCL	6.18	95% Percentile Bootstrap UCL	1.754
95% BCA Bootstrap UCL	1.841		
90% Chebyshev(Mean, Sd) UCL	2.152	95% Chebyshev(Mean, Sd) UCL	2.54
97.5% Chebyshev(Mean, Sd) UCL	3.078	99% Chebyshev(Mean, Sd) UCL	4.135

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.025	Mean	4.751
Maximum	11.3	Median	3.645
SD	3.323	Std. Error of Mean	1.356
Coefficient of Variation	0.699	Skewness	2.078
Mean of logged Data	1.404	SD of logged Data	0.572

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	7.484	95% Adjusted-CLT UCL (Chen-1995)	8.212
		95% Modified-t UCL (Johnson-1978)	7.676

Nonparametric Distribution Free UCLs

95% CLT UCL	6.982	95% Jackknife UCL	7.484
95% Standard Bootstrap UCL	6.758	95% Bootstrap-t UCL	12.61
95% Hall's Bootstrap UCL	18.58	95% Percentile Bootstrap UCL	7.148
95% BCA Bootstrap UCL	7.6		
90% Chebyshev(Mean, Sd) UCL	8.82	95% Chebyshev(Mean, Sd) UCL	10.66
97.5% Chebyshev(Mean, Sd) UCL	13.22	99% Chebyshev(Mean, Sd) UCL	18.25

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.4	Mean	41.42
Maximum	81.6	Median	32.8
SD	26.75	Std. Error of Mean	10.92
Coefficient of Variation	0.646	Skewness	0.686
Mean of logged Data	3.523	SD of logged Data	0.734

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.43	95% Adjusted-CLT UCL (Chen-1995)	62.65
		95% Modified-t UCL (Johnson-1978)	63.94

Nonparametric Distribution Free UCLs

95% CLT UCL	59.38	95% Jackknife UCL	63.43
95% Standard Bootstrap UCL	57.71	95% Bootstrap-t UCL	88.41
95% Hall's Bootstrap UCL	255.5	95% Percentile Bootstrap UCL	57.68
95% BCA Bootstrap UCL	60.03		
90% Chebyshev(Mean, Sd) UCL	74.18	95% Chebyshev(Mean, Sd) UCL	89.03
97.5% Chebyshev(Mean, Sd) UCL	109.6	99% Chebyshev(Mean, Sd) UCL	150.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.5	Mean	61.55
Maximum	159	Median	42.65
SD	52.25	Std. Error of Mean	21.33
Coefficient of Variation	0.849	Skewness	1.652
Mean of logged Data	3.844	SD of logged Data	0.816

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	104.5	95% Adjusted-CLT UCL (Chen-1995)	112
		95% Modified-t UCL (Johnson-1978)	106.9

Nonparametric Distribution Free UCLs

95% CLT UCL	96.64	95% Jackknife UCL	104.5
95% Standard Bootstrap UCL	93.33	95% Bootstrap-t UCL	194.1
95% Hall's Bootstrap UCL	326.8	95% Percentile Bootstrap UCL	97.52
95% BCA Bootstrap UCL	105.4		
90% Chebyshev(Mean, Sd) UCL	125.5	95% Chebyshev(Mean, Sd) UCL	154.5
97.5% Chebyshev(Mean, Sd) UCL	194.8	99% Chebyshev(Mean, Sd) UCL	273.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	21.1	Mean	82.4
Maximum	211	Median	56
SD	68.89	Std. Error of Mean	28.12
Coefficient of Variation	0.836	Skewness	1.666
Mean of logged Data	4.15	SD of logged Data	0.786

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	139.1	95% Adjusted-CLT UCL (Chen-1995)	149.1
		95% Modified-t UCL (Johnson-1978)	142.3

Nonparametric Distribution Free UCLs

95% CLT UCL	128.7	95% Jackknife UCL	139.1
95% Standard Bootstrap UCL	123.2	95% Bootstrap-t UCL	260.8
95% Hall's Bootstrap UCL	416.8	95% Percentile Bootstrap UCL	130.7
95% BCA Bootstrap UCL	143.1		
90% Chebyshev(Mean, Sd) UCL	166.8	95% Chebyshev(Mean, Sd) UCL	205
97.5% Chebyshev(Mean, Sd) UCL	258	99% Chebyshev(Mean, Sd) UCL	362.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.1	Mean	54.4
Maximum	148	Median	34.75
SD	49.06	Std. Error of Mean	20.03
Coefficient of Variation	0.902	Skewness	1.833
Mean of logged Data	3.711	SD of logged Data	0.806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	94.76	95% Adjusted-CLT UCL (Chen-1995)	103.4
		95% Modified-t UCL (Johnson-1978)	97.26

Nonparametric Distribution Free UCLs

95% CLT UCL	87.34	95% Jackknife UCL	94.76

95% Standard Bootstrap UCL	84.3	95% Bootstrap-t UCL	199.2
95% Hall's Bootstrap UCL	280.2	95% Percentile Bootstrap UCL	87.43
95% BCA Bootstrap UCL	98.65		
90% Chebyshev(Mean, Sd) UCL	114.5	95% Chebyshev(Mean, Sd) UCL	141.7
97.5% Chebyshev(Mean, Sd) UCL	179.5	99% Chebyshev(Mean, Sd) UCL	253.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	8.42	Mean	33.89
Maximum	80.5	Median	24.95
SD	25.72	Std. Error of Mean	10.5
Coefficient of Variation	0.759	Skewness	1.441
Mean of logged Data	3.289	SD of logged Data	0.765

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.05	95% Adjusted-CLT UCL (Chen-1995)	57.76
		95% Modified-t UCL (Johnson-1978)	56.07

Nonparametric Distribution Free UCLs

95% CLT UCL	51.16	95% Jackknife UCL	55.05
95% Standard Bootstrap UCL	49.51	95% Bootstrap-t UCL	88.96
95% Hall's Bootstrap UCL	168.7	95% Percentile Bootstrap UCL	51.07
95% BCA Bootstrap UCL	55.28		
90% Chebyshev(Mean, Sd) UCL	65.39	95% Chebyshev(Mean, Sd) UCL	79.66
97.5% Chebyshev(Mean, Sd) UCL	99.46	99% Chebyshev(Mean, Sd) UCL	138.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.5	Mean	56.35
Maximum	112	Median	45.35
SD	35.41	Std. Error of Mean	14.46
Coefficient of Variation	0.628	Skewness	0.777
Mean of logged Data	3.848	SD of logged Data	0.696

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	85.48	95% Adjusted-CLT UCL (Chen-1995)	85.02
		95% Modified-t UCL (Johnson-1978)	86.24

Nonparametric Distribution Free UCLs

95% CLT UCL	80.13	95% Jackknife UCL	85.48
95% Standard Bootstrap UCL	77.74	95% Bootstrap-t UCL	110.1
95% Hall's Bootstrap UCL	316.4	95% Percentile Bootstrap UCL	78.62
95% BCA Bootstrap UCL	80.83		
90% Chebyshev(Mean, Sd) UCL	99.72	95% Chebyshev(Mean, Sd) UCL	119.4
97.5% Chebyshev(Mean, Sd) UCL	146.6	99% Chebyshev(Mean, Sd) UCL	200.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.32	Mean	13.6
Maximum	37.8	Median	8.77
SD	12.56	Std. Error of Mean	5.126
Coefficient of Variation	0.923	Skewness	1.907
Mean of logged Data	2.314	SD of logged Data	0.821

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.93	95% Adjusted-CLT UCL (Chen-1995)	26.29
		95% Modified-t UCL (Johnson-1978)	24.59

Nonparametric Distribution Free UCLs

95% CLT UCL	22.03	95% Jackknife UCL	23.93
95% Standard Bootstrap UCL	21.32	95% Bootstrap-t UCL	48.79
95% Hall's Bootstrap UCL	73.19	95% Percentile Bootstrap UCL	22.38
95% BCA Bootstrap UCL	25.39		
90% Chebyshev(Mean, Sd) UCL	28.98	95% Chebyshev(Mean, Sd) UCL	35.94
97.5% Chebyshev(Mean, Sd) UCL	45.61	99% Chebyshev(Mean, Sd) UCL	64.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.1	Mean	63.43
Maximum	127	Median	54.1
SD	37.56	Std. Error of Mean	15.33
Coefficient of Variation	0.592	Skewness	0.921
Mean of logged Data	3.988	SD of logged Data	0.657

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	94.33	95% Adjusted-CLT UCL (Chen-1995)	94.81
		95% Modified-t UCL (Johnson-1978)	95.29

Nonparametric Distribution Free UCLs

95% CLT UCL	88.65	95% Jackknife UCL	94.33
95% Standard Bootstrap UCL	86.64	95% Bootstrap-t UCL	114.8
95% Hall's Bootstrap UCL	303.8	95% Percentile Bootstrap UCL	87.73
95% BCA Bootstrap UCL	91		
90% Chebyshev(Mean, Sd) UCL	109.4	95% Chebyshev(Mean, Sd) UCL	130.3
97.5% Chebyshev(Mean, Sd) UCL	159.2	99% Chebyshev(Mean, Sd) UCL	216

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.24	Mean	1.313
Maximum	1.51	Median	1.283
SD	0.101	Std. Error of Mean	0.0411
Coefficient of Variation	0.0766	Skewness	2.017
Mean of logged Data	0.27	SD of logged Data	0.0731

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.396	95% Adjusted-CLT UCL (Chen-1995)	1.417
		95% Modified-t UCL (Johnson-1978)	1.402

Nonparametric Distribution Free UCLs

95% CLT UCL	1.381	95% Jackknife UCL	1.396
95% Standard Bootstrap UCL	1.374	95% Bootstrap-t UCL	1.551
95% Hall's Bootstrap UCL	1.639	95% Percentile Bootstrap UCL	1.388
95% BCA Bootstrap UCL	1.402		
90% Chebyshev(Mean, Sd) UCL	1.437	95% Chebyshev(Mean, Sd) UCL	1.492
97.5% Chebyshev(Mean, Sd) UCL	1.57	99% Chebyshev(Mean, Sd) UCL	1.722

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	14.5	Mean	56.88
Maximum	155	Median	36.15
SD	51.37	Std. Error of Mean	20.97
Coefficient of Variation	0.903	Skewness	1.841
Mean of logged Data	3.754	SD of logged Data	0.808

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.14	95% Adjusted-CLT UCL (Chen-1995)	108.2
		95% Modified-t UCL (Johnson-1978)	101.8

Nonparametric Distribution Free UCLs

95% CLT UCL	91.38	95% Jackknife UCL	99.14
95% Standard Bootstrap UCL	88.55	95% Bootstrap-t UCL	208.1
95% Hall's Bootstrap UCL	331	95% Percentile Bootstrap UCL	92.88
95% BCA Bootstrap UCL	100.6		
90% Chebyshev(Mean, Sd) UCL	119.8	95% Chebyshev(Mean, Sd) UCL	148.3
97.5% Chebyshev(Mean, Sd) UCL	187.9	99% Chebyshev(Mean, Sd) UCL	265.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.78	Mean	3.232
Maximum	5.81	Median	2.505
SD	1.655	Std. Error of Mean	0.676
Coefficient of Variation	0.512	Skewness	0.977
Mean of logged Data	1.072	SD of logged Data	0.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	4.593	95% Adjusted-CLT UCL (Chen-1995)	4.631
		95% Modified-t UCL (Johnson-1978)	4.638

Nonparametric Distribution Free UCLs

95% CLT UCL	4.343	95% Jackknife UCL	4.593
95% Standard Bootstrap UCL	4.248	95% Bootstrap-t UCL	7.399
95% Hall's Bootstrap UCL	12.36	95% Percentile Bootstrap UCL	4.325
95% BCA Bootstrap UCL	4.502		
90% Chebyshev(Mean, Sd) UCL	5.259	95% Chebyshev(Mean, Sd) UCL	6.177
97.5% Chebyshev(Mean, Sd) UCL	7.452	99% Chebyshev(Mean, Sd) UCL	9.955

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.75	Mean	24.93
Maximum	57.2	Median	21.6
SD	16.96	Std. Error of Mean	6.924
Coefficient of Variation	0.68	Skewness	1.676
Mean of logged Data	3.032	SD of logged Data	0.683

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.88	95% Adjusted-CLT UCL (Chen-1995)	41.38
		95% Modified-t UCL (Johnson-1978)	39.67

Nonparametric Distribution Free UCLs

95% CLT UCL	36.31	95% Jackknife UCL	38.88
95% Standard Bootstrap UCL	35.15	95% Bootstrap-t UCL	54.21
95% Hall's Bootstrap UCL	96.82	95% Percentile Bootstrap UCL	37.23
95% BCA Bootstrap UCL	39.17		
90% Chebyshev(Mean, Sd) UCL	45.7	95% Chebyshev(Mean, Sd) UCL	55.11
97.5% Chebyshev(Mean, Sd) UCL	68.17	99% Chebyshev(Mean, Sd) UCL	93.82

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.1	Mean	62.12
Maximum	117	Median	53.7
SD	34.84	Std. Error of Mean	14.22
Coefficient of Variation	0.561	Skewness	0.621
Mean of logged Data	3.976	SD of logged Data	0.643

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	90.78	95% Adjusted-CLT UCL (Chen-1995)	89.36
		95% Modified-t UCL (Johnson-1978)	91.38

Nonparametric Distribution Free UCLs

95% CLT UCL	85.51	95% Jackknife UCL	90.78
95% Standard Bootstrap UCL	83.37	95% Bootstrap-t UCL	107.7
95% Hall's Bootstrap UCL	341.3	95% Percentile Bootstrap UCL	85.32
95% BCA Bootstrap UCL	85.9		
90% Chebyshev(Mean, Sd) UCL	104.8	95% Chebyshev(Mean, Sd) UCL	124.1
97.5% Chebyshev(Mean, Sd) UCL	150.9	99% Chebyshev(Mean, Sd) UCL	203.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	13.3	Mean	13.72
Maximum	14.5	Median	13.7
SD	0.44	Std. Error of Mean	0.18
Coefficient of Variation	0.0321	Skewness	1.185
Mean of logged Data	2.618	SD of logged Data	0.0317

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.08	95% Adjusted-CLT UCL (Chen-1995)	14.11
		95% Modified-t UCL (Johnson-1978)	14.09

Nonparametric Distribution Free UCLs

95% CLT UCL	14.01	95% Jackknife UCL	14.08
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	14.26	95% Chebyshev(Mean, Sd) UCL	14.5
97.5% Chebyshev(Mean, Sd) UCL	14.84	99% Chebyshev(Mean, Sd) UCL	15.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.6	Mean	11.42
Maximum	11.9	Median	11.5
SD	0.475	Std. Error of Mean	0.194
Coefficient of Variation	0.0416	Skewness	-1.062
Mean of logged Data	2.434	SD of logged Data	0.0423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.81	95% Adjusted-CLT UCL (Chen-1995)	11.65
		95% Modified-t UCL (Johnson-1978)	11.79

Nonparametric Distribution Free UCLs

95% CLT UCL	11.74	95% Jackknife UCL	11.81

95% Standard Bootstrap UCL	11.7	95% Bootstrap-t UCL	11.72
95% Hall's Bootstrap UCL	11.65	95% Percentile Bootstrap UCL	11.68
95% BCA Bootstrap UCL	11.67		
90% Chebyshev(Mean, Sd) UCL	12	95% Chebyshev(Mean, Sd) UCL	12.26
97.5% Chebyshev(Mean, Sd) UCL	12.63	99% Chebyshev(Mean, Sd) UCL	13.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.5	Mean	42.52
Maximum	43.2	Median	42.65
SD	0.643	Std. Error of Mean	0.263
Coefficient of Variation	0.0151	Skewness	-0.718
Mean of logged Data	3.75	SD of logged Data	0.0152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.05	95% Adjusted-CLT UCL (Chen-1995)	42.87
		95% Modified-t UCL (Johnson-1978)	43.03

Nonparametric Distribution Free UCLs

95% CLT UCL	42.95	95% Jackknife UCL	43.05
95% Standard Bootstrap UCL	42.92	95% Bootstrap-t UCL	42.97
95% Hall's Bootstrap UCL	42.84	95% Percentile Bootstrap UCL	42.88
95% BCA Bootstrap UCL	42.85		
90% Chebyshev(Mean, Sd) UCL	43.3	95% Chebyshev(Mean, Sd) UCL	43.66
97.5% Chebyshev(Mean, Sd) UCL	44.16	99% Chebyshev(Mean, Sd) UCL	45.13

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:45:25 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32436011) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.885	Mean	0.987
Maximum	1.12	Median	0.983
SD	0.0942	Std. Error of Mean	0.0385
Coefficient of Variation	0.0955	Skewness	0.284
Mean of logged Data	-0.0172	SD of logged Data	0.0951

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.064	95% Adjusted-CLT UCL (Chen-1995)	1.055
		95% Modified-t UCL (Johnson-1978)	1.065

Nonparametric Distribution Free UCLs

95% CLT UCL	1.05	95% Jackknife UCL	1.064
95% Standard Bootstrap UCL	1.045	95% Bootstrap-t UCL	1.077
95% Hall's Bootstrap UCL	1.053	95% Percentile Bootstrap UCL	1.045
95% BCA Bootstrap UCL	1.044		
90% Chebyshev(Mean, Sd) UCL	1.102	95% Chebyshev(Mean, Sd) UCL	1.154
97.5% Chebyshev(Mean, Sd) UCL	1.227	99% Chebyshev(Mean, Sd) UCL	1.369

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	0.947	Mean	1.731
Maximum	2.57	Median	1.693
SD	0.833	Std. Error of Mean	0.34
Coefficient of Variation	0.481	Skewness	0.016
Mean of logged Data	0.442	SD of logged Data	0.516

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.417	95% Adjusted-CLT UCL (Chen-1995)	2.293
		95% Modified-t UCL (Johnson-1978)	2.417

Nonparametric Distribution Free UCLs

95% CLT UCL	2.291	95% Jackknife UCL	2.417
95% Standard Bootstrap UCL	2.235	95% Bootstrap-t UCL	2.412
95% Hall's Bootstrap UCL	2.003	95% Percentile Bootstrap UCL	2.249
95% BCA Bootstrap UCL	2.237		
90% Chebyshev(Mean, Sd) UCL	2.752	95% Chebyshev(Mean, Sd) UCL	3.214
97.5% Chebyshev(Mean, Sd) UCL	3.856	99% Chebyshev(Mean, Sd) UCL	5.116

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3	Mean	6.44
Maximum	10.5	Median	6.08
SD	3.24	Std. Error of Mean	1.323
Coefficient of Variation	0.503	Skewness	0.156
Mean of logged Data	1.746	SD of logged Data	0.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	9.106	95% Adjusted-CLT UCL (Chen-1995)	8.706
		95% Modified-t UCL (Johnson-1978)	9.12

Nonparametric Distribution Free UCLs

95% CLT UCL	8.616	95% Jackknife UCL	9.106
95% Standard Bootstrap UCL	8.415	95% Bootstrap-t UCL	9.432
95% Hall's Bootstrap UCL	7.736	95% Percentile Bootstrap UCL	8.575
95% BCA Bootstrap UCL	8.433		
90% Chebyshev(Mean, Sd) UCL	10.41	95% Chebyshev(Mean, Sd) UCL	12.21
97.5% Chebyshev(Mean, Sd) UCL	14.7	99% Chebyshev(Mean, Sd) UCL	19.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	30.3	Mean	58.35
Maximum	89.9	Median	55.3
SD	29.09	Std. Error of Mean	11.88
Coefficient of Variation	0.499	Skewness	0.0855
Mean of logged Data	3.952	SD of logged Data	0.533

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	82.28	95% Adjusted-CLT UCL (Chen-1995)	78.33
		95% Modified-t UCL (Johnson-1978)	82.35

Nonparametric Distribution Free UCLs

95% CLT UCL	77.89	95% Jackknife UCL	82.28
95% Standard Bootstrap UCL	76.57	95% Bootstrap-t UCL	81.31
95% Hall's Bootstrap UCL	68.58	95% Percentile Bootstrap UCL	77.07
95% BCA Bootstrap UCL	76.43		
90% Chebyshev(Mean, Sd) UCL	93.98	95% Chebyshev(Mean, Sd) UCL	110.1
97.5% Chebyshev(Mean, Sd) UCL	132.5	99% Chebyshev(Mean, Sd) UCL	176.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	40.6	Mean	73.95
Maximum	110	Median	70.95
SD	34.89	Std. Error of Mean	14.24
Coefficient of Variation	0.472	Skewness	0.0696
Mean of logged Data	4.202	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	102.7	95% Adjusted-CLT UCL (Chen-1995)	97.81
		95% Modified-t UCL (Johnson-1978)	102.7

Nonparametric Distribution Free UCLs

95% CLT UCL	97.38	95% Jackknife UCL	102.7
95% Standard Bootstrap UCL	95.07	95% Bootstrap-t UCL	100.6
95% Hall's Bootstrap UCL	86.32	95% Percentile Bootstrap UCL	96.15
95% BCA Bootstrap UCL	94.7		
90% Chebyshev(Mean, Sd) UCL	116.7	95% Chebyshev(Mean, Sd) UCL	136
97.5% Chebyshev(Mean, Sd) UCL	162.9	99% Chebyshev(Mean, Sd) UCL	215.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	59.2	Mean	106.1
Maximum	160	Median	99.85
SD	49.72	Std. Error of Mean	20.3
Coefficient of Variation	0.469	Skewness	0.12
Mean of logged Data	4.565	SD of logged Data	0.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	147	95% Adjusted-CLT UCL (Chen-1995)	140.6
		95% Modified-t UCL (Johnson-1978)	147.2

Nonparametric Distribution Free UCLs

95% CLT UCL	139.5	95% Jackknife UCL	147
95% Standard Bootstrap UCL	136.5	95% Bootstrap-t UCL	142.6
95% Hall's Bootstrap UCL	123.8	95% Percentile Bootstrap UCL	138.2
95% BCA Bootstrap UCL	135.3		
90% Chebyshev(Mean, Sd) UCL	167	95% Chebyshev(Mean, Sd) UCL	194.6
97.5% Chebyshev(Mean, Sd) UCL	232.9	99% Chebyshev(Mean, Sd) UCL	308.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32	Mean	57.85
Maximum	87.6	Median	54.5
SD	26.69	Std. Error of Mean	10.89
Coefficient of Variation	0.461	Skewness	0.126
Mean of logged Data	3.962	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	79.8	95% Adjusted-CLT UCL (Chen-1995)	76.37
		95% Modified-t UCL (Johnson-1978)	79.9

Nonparametric Distribution Free UCLs

95% CLT UCL	75.77	95% Jackknife UCL	79.8

95% Standard Bootstrap UCL	73.33	95% Bootstrap-t UCL	77.82
95% Hall's Bootstrap UCL	67.47	95% Percentile Bootstrap UCL	74.53
95% BCA Bootstrap UCL	74.78		
90% Chebyshev(Mean, Sd) UCL	90.53	95% Chebyshev(Mean, Sd) UCL	105.3
97.5% Chebyshev(Mean, Sd) UCL	125.9	99% Chebyshev(Mean, Sd) UCL	166.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	20.6	Mean	38.52
Maximum	57.9	Median	36.7
SD	18.36	Std. Error of Mean	7.497
Coefficient of Variation	0.477	Skewness	0.079
Mean of logged Data	3.547	SD of logged Data	0.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.62	95% Adjusted-CLT UCL (Chen-1995)	51.11
		95% Modified-t UCL (Johnson-1978)	53.66

Nonparametric Distribution Free UCLs

95% CLT UCL	50.85	95% Jackknife UCL	53.62
95% Standard Bootstrap UCL	49.75	95% Bootstrap-t UCL	52.41
95% Hall's Bootstrap UCL	45.02	95% Percentile Bootstrap UCL	50.17
95% BCA Bootstrap UCL	50.07		
90% Chebyshev(Mean, Sd) UCL	61.01	95% Chebyshev(Mean, Sd) UCL	71.19
97.5% Chebyshev(Mean, Sd) UCL	85.33	99% Chebyshev(Mean, Sd) UCL	113.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics			
Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	40.8	Mean	75.93
Maximum	114	Median	72.45
SD	36.91	Std. Error of Mean	15.07
Coefficient of Variation	0.486	Skewness	0.0705
Mean of logged Data	4.221	SD of logged Data	0.519

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	106.3	95% Adjusted-CLT UCL (Chen-1995)	101.2
		95% Modified-t UCL (Johnson-1978)	106.4

Nonparametric Distribution Free UCLs

95% CLT UCL	100.7	95% Jackknife UCL	106.3
95% Standard Bootstrap UCL	98.01	95% Bootstrap-t UCL	104
95% Hall's Bootstrap UCL	88.8	95% Percentile Bootstrap UCL	99.43
95% BCA Bootstrap UCL	97.78		
90% Chebyshev(Mean, Sd) UCL	121.1	95% Chebyshev(Mean, Sd) UCL	141.6
97.5% Chebyshev(Mean, Sd) UCL	170	99% Chebyshev(Mean, Sd) UCL	225.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics			
Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	7.87	Mean	13.65
Maximum	20.8	Median	12.81
SD	6.17	Std. Error of Mean	2.519
Coefficient of Variation	0.452	Skewness	0.147
Mean of logged Data	2.523	SD of logged Data	0.473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.73	95% Adjusted-CLT UCL (Chen-1995)	17.96
		95% Modified-t UCL (Johnson-1978)	18.75

Nonparametric Distribution Free UCLs

95% CLT UCL	17.8	95% Jackknife UCL	18.73
95% Standard Bootstrap UCL	17.43	95% Bootstrap-t UCL	18.4
95% Hall's Bootstrap UCL	15.88	95% Percentile Bootstrap UCL	17.66
95% BCA Bootstrap UCL	17.66		
90% Chebyshev(Mean, Sd) UCL	21.21	95% Chebyshev(Mean, Sd) UCL	24.63
97.5% Chebyshev(Mean, Sd) UCL	29.39	99% Chebyshev(Mean, Sd) UCL	38.72

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	50.6	Mean	96.08
Maximum	149	Median	91.6
SD	45.6	Std. Error of Mean	18.62
Coefficient of Variation	0.475	Skewness	0.106
Mean of logged Data	4.463	SD of logged Data	0.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	133.6	95% Adjusted-CLT UCL (Chen-1995)	127.6
		95% Modified-t UCL (Johnson-1978)	133.7

Nonparametric Distribution Free UCLs

95% CLT UCL	126.7	95% Jackknife UCL	133.6
95% Standard Bootstrap UCL	124	95% Bootstrap-t UCL	133.7
95% Hall's Bootstrap UCL	112.5	95% Percentile Bootstrap UCL	123.9
95% BCA Bootstrap UCL	125.6		
90% Chebyshev(Mean, Sd) UCL	151.9	95% Chebyshev(Mean, Sd) UCL	177.2
97.5% Chebyshev(Mean, Sd) UCL	212.3	99% Chebyshev(Mean, Sd) UCL	281.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.936	Mean	1.106
Maximum	1.275	Median	1.128
SD	0.129	Std. Error of Mean	0.0528
Coefficient of Variation	0.117	Skewness	-0.146
Mean of logged Data	0.0949	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.212	95% Adjusted-CLT UCL (Chen-1995)	1.19
		95% Modified-t UCL (Johnson-1978)	1.212

Nonparametric Distribution Free UCLs

95% CLT UCL	1.193	95% Jackknife UCL	1.212
95% Standard Bootstrap UCL	1.185	95% Bootstrap-t UCL	1.201
95% Hall's Bootstrap UCL	1.179	95% Percentile Bootstrap UCL	1.181
95% BCA Bootstrap UCL	1.179		
90% Chebyshev(Mean, Sd) UCL	1.265	95% Chebyshev(Mean, Sd) UCL	1.336
97.5% Chebyshev(Mean, Sd) UCL	1.436	99% Chebyshev(Mean, Sd) UCL	1.632

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	34.4	Mean	64.38
Maximum	99.1	Median	59.45
SD	30.66	Std. Error of Mean	12.52
Coefficient of Variation	0.476	Skewness	0.152
Mean of logged Data	4.063	SD of logged Data	0.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	89.61	95% Adjusted-CLT UCL (Chen-1995)	85.8
		95% Modified-t UCL (Johnson-1978)	89.74

Nonparametric Distribution Free UCLs

95% CLT UCL	84.97	95% Jackknife UCL	89.61
95% Standard Bootstrap UCL	83.4	95% Bootstrap-t UCL	87.95
95% Hall's Bootstrap UCL	75.52	95% Percentile Bootstrap UCL	84.15
95% BCA Bootstrap UCL	84.08		
90% Chebyshev(Mean, Sd) UCL	101.9	95% Chebyshev(Mean, Sd) UCL	118.9
97.5% Chebyshev(Mean, Sd) UCL	142.6	99% Chebyshev(Mean, Sd) UCL	188.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.983	Mean	1.699
Maximum	2.46	Median	1.655
SD	0.753	Std. Error of Mean	0.308
Coefficient of Variation	0.443	Skewness	0.0293
Mean of logged Data	0.441	SD of logged Data	0.469

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.318	95% Adjusted-CLT UCL (Chen-1995)	2.209
		95% Modified-t UCL (Johnson-1978)	2.319

Nonparametric Distribution Free UCLs

95% CLT UCL	2.205	95% Jackknife UCL	2.318
95% Standard Bootstrap UCL	2.162	95% Bootstrap-t UCL	2.293
95% Hall's Bootstrap UCL	1.954	95% Percentile Bootstrap UCL	2.171
95% BCA Bootstrap UCL	2.171		
90% Chebyshev(Mean, Sd) UCL	2.621	95% Chebyshev(Mean, Sd) UCL	3.039
97.5% Chebyshev(Mean, Sd) UCL	3.619	99% Chebyshev(Mean, Sd) UCL	4.758

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	18.3	Mean	37.17
Maximum	58.9	Median	35.3
SD	18.1	Std. Error of Mean	7.391
Coefficient of Variation	0.487	Skewness	0.119
Mean of logged Data	3.507	SD of logged Data	0.52

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.06	95% Adjusted-CLT UCL (Chen-1995)	49.71
		95% Modified-t UCL (Johnson-1978)	52.12

Nonparametric Distribution Free UCLs

95% CLT UCL	49.32	95% Jackknife UCL	52.06
95% Standard Bootstrap UCL	48.08	95% Bootstrap-t UCL	52.16
95% Hall's Bootstrap UCL	44.04	95% Percentile Bootstrap UCL	48.38
95% BCA Bootstrap UCL	48.38		
90% Chebyshev(Mean, Sd) UCL	59.34	95% Chebyshev(Mean, Sd) UCL	69.38
97.5% Chebyshev(Mean, Sd) UCL	83.32	99% Chebyshev(Mean, Sd) UCL	110.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	50.6	Mean	92.72
Maximum	141	Median	88.25
SD	43.61	Std. Error of Mean	17.81
Coefficient of Variation	0.47	Skewness	0.0888
Mean of logged Data	4.429	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	128.6	95% Adjusted-CLT UCL (Chen-1995)	122.7
		95% Modified-t UCL (Johnson-1978)	128.7

Nonparametric Distribution Free UCLs

95% CLT UCL	122	95% Jackknife UCL	128.6
95% Standard Bootstrap UCL	119	95% Bootstrap-t UCL	136.3
95% Hall's Bootstrap UCL	110	95% Percentile Bootstrap UCL	120.4
95% BCA Bootstrap UCL	118.9		
90% Chebyshev(Mean, Sd) UCL	146.1	95% Chebyshev(Mean, Sd) UCL	170.3
97.5% Chebyshev(Mean, Sd) UCL	203.9	99% Chebyshev(Mean, Sd) UCL	269.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.6	Mean	12.18
Maximum	12.7	Median	12.18

SD	0.445	Std. Error of Mean	0.182
Coefficient of Variation	0.0365	Skewness	-0.0729
Mean of logged Data	2.499	SD of logged Data	0.0366

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.54	95% Adjusted-CLT UCL (Chen-1995)	12.47
		95% Modified-t UCL (Johnson-1978)	12.54

Nonparametric Distribution Free UCLs

95% CLT UCL	12.47	95% Jackknife UCL	12.54
95% Standard Bootstrap UCL	12.45	95% Bootstrap-t UCL	12.56
95% Hall's Bootstrap UCL	12.44	95% Percentile Bootstrap UCL	12.45
95% BCA Bootstrap UCL	12.45		
90% Chebyshev(Mean, Sd) UCL	12.72	95% Chebyshev(Mean, Sd) UCL	12.97
97.5% Chebyshev(Mean, Sd) UCL	13.31	99% Chebyshev(Mean, Sd) UCL	13.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.4	Mean	30.53
Maximum	65.1	Median	25.25
SD	19.27	Std. Error of Mean	7.869
Coefficient of Variation	0.631	Skewness	1.363
Mean of logged Data	3.27	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	46.39	95% Adjusted-CLT UCL (Chen-1995)	48.16
		95% Modified-t UCL (Johnson-1978)	47.12

Nonparametric Distribution Free UCLs

95% CLT UCL	43.48	95% Jackknife UCL	46.39
95% Standard Bootstrap UCL	42.57	95% Bootstrap-t UCL	56.25
95% Hall's Bootstrap UCL	54.5	95% Percentile Bootstrap UCL	43.22
95% BCA Bootstrap UCL	46.72		
90% Chebyshev(Mean, Sd) UCL	54.14	95% Chebyshev(Mean, Sd) UCL	64.83
97.5% Chebyshev(Mean, Sd) UCL	79.67	99% Chebyshev(Mean, Sd) UCL	108.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.8	Mean	47.98
Maximum	64.5	Median	46.7
SD	8.871	Std. Error of Mean	3.622
Coefficient of Variation	0.185	Skewness	1.56
Mean of logged Data	3.858	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.28	95% Adjusted-CLT UCL (Chen-1995)	56.4
		95% Modified-t UCL (Johnson-1978)	55.67

Nonparametric Distribution Free UCLs

95% CLT UCL	53.94	95% Jackknife UCL	55.28
95% Standard Bootstrap UCL	53.5	95% Bootstrap-t UCL	60.59
95% Hall's Bootstrap UCL	80.44	95% Percentile Bootstrap UCL	53.57
95% BCA Bootstrap UCL	55.28		
90% Chebyshev(Mean, Sd) UCL	58.85	95% Chebyshev(Mean, Sd) UCL	63.77
97.5% Chebyshev(Mean, Sd) UCL	70.6	99% Chebyshev(Mean, Sd) UCL	84.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:48:00 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32436012) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.881	Mean	1.415
Maximum	1.73	Median	1.485
SD	0.288	Std. Error of Mean	0.118
Coefficient of Variation	0.203	Skewness	-1.486
Mean of logged Data	0.326	SD of logged Data	0.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.652	95% Adjusted-CLT UCL (Chen-1995)	1.532
		95% Modified-t UCL (Johnson-1978)	1.64

Nonparametric Distribution Free UCLs

95% CLT UCL	1.608	95% Jackknife UCL	1.652
95% Standard Bootstrap UCL	1.589	95% Bootstrap-t UCL	1.583
95% Hall's Bootstrap UCL	1.554	95% Percentile Bootstrap UCL	1.57
95% BCA Bootstrap UCL	1.55		
90% Chebyshev(Mean, Sd) UCL	1.768	95% Chebyshev(Mean, Sd) UCL	1.927
97.5% Chebyshev(Mean, Sd) UCL	2.149	99% Chebyshev(Mean, Sd) UCL	2.584

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.96	Mean	3.043
Maximum	4.24	Median	2.785
SD	0.999	Std. Error of Mean	0.408
Coefficient of Variation	0.328	Skewness	0.393
Mean of logged Data	1.068	SD of logged Data	0.329

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.866	95% Adjusted-CLT UCL (Chen-1995)	3.785
		95% Modified-t UCL (Johnson-1978)	3.876

Nonparametric Distribution Free UCLs

95% CLT UCL	3.715	95% Jackknife UCL	3.866
95% Standard Bootstrap UCL	3.666	95% Bootstrap-t UCL	4.015
95% Hall's Bootstrap UCL	3.742	95% Percentile Bootstrap UCL	3.673
95% BCA Bootstrap UCL	3.722		
90% Chebyshev(Mean, Sd) UCL	4.267	95% Chebyshev(Mean, Sd) UCL	4.822
97.5% Chebyshev(Mean, Sd) UCL	5.592	99% Chebyshev(Mean, Sd) UCL	7.103

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.04	Mean	12.89
Maximum	20.5	Median	12.85
SD	5.416	Std. Error of Mean	2.211
Coefficient of Variation	0.42	Skewness	0.152
Mean of logged Data	2.474	SD of logged Data	0.458

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.34	95% Adjusted-CLT UCL (Chen-1995)	16.67
		95% Modified-t UCL (Johnson-1978)	17.37

Nonparametric Distribution Free UCLs

95% CLT UCL	16.53	95% Jackknife UCL	17.34
95% Standard Bootstrap UCL	16.2	95% Bootstrap-t UCL	17.15
95% Hall's Bootstrap UCL	16.89	95% Percentile Bootstrap UCL	16.15
95% BCA Bootstrap UCL	16.29		
90% Chebyshev(Mean, Sd) UCL	19.52	95% Chebyshev(Mean, Sd) UCL	22.53
97.5% Chebyshev(Mean, Sd) UCL	26.7	99% Chebyshev(Mean, Sd) UCL	34.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.1	Mean	97.2
Maximum	145	Median	94.75
SD	33.51	Std. Error of Mean	13.68
Coefficient of Variation	0.345	Skewness	0.267
Mean of logged Data	4.525	SD of logged Data	0.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	124.8	95% Adjusted-CLT UCL (Chen-1995)	121.3
		95% Modified-t UCL (Johnson-1978)	125

Nonparametric Distribution Free UCLs

95% CLT UCL	119.7	95% Jackknife UCL	124.8
95% Standard Bootstrap UCL	117.7	95% Bootstrap-t UCL	128.4
95% Hall's Bootstrap UCL	119.8	95% Percentile Bootstrap UCL	118.8
95% BCA Bootstrap UCL	118.8		
90% Chebyshev(Mean, Sd) UCL	138.2	95% Chebyshev(Mean, Sd) UCL	156.8
97.5% Chebyshev(Mean, Sd) UCL	182.6	99% Chebyshev(Mean, Sd) UCL	233.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	79.7	Mean	132
Maximum	185	Median	127
SD	40.33	Std. Error of Mean	16.46
Coefficient of Variation	0.306	Skewness	0.119
Mean of logged Data	4.841	SD of logged Data	0.318

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	165.1	95% Adjusted-CLT UCL (Chen-1995)	159.9
		95% Modified-t UCL (Johnson-1978)	165.3

Nonparametric Distribution Free UCLs

95% CLT UCL	159	95% Jackknife UCL	165.1
95% Standard Bootstrap UCL	156.4	95% Bootstrap-t UCL	175.6
95% Hall's Bootstrap UCL	161.1	95% Percentile Bootstrap UCL	156.5
95% BCA Bootstrap UCL	156.2		
90% Chebyshev(Mean, Sd) UCL	181.3	95% Chebyshev(Mean, Sd) UCL	203.7
97.5% Chebyshev(Mean, Sd) UCL	234.8	99% Chebyshev(Mean, Sd) UCL	295.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	106	Mean	175.8
Maximum	257	Median	171.5

SD	55.18	Std. Error of Mean	22.53
Coefficient of Variation	0.314	Skewness	0.3
Mean of logged Data	5.127	SD of logged Data	0.323

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	221.2	95% Adjusted-CLT UCL (Chen-1995)	215.8
		95% Modified-t UCL (Johnson-1978)	221.7

Nonparametric Distribution Free UCLs

95% CLT UCL	212.9	95% Jackknife UCL	221.2
95% Standard Bootstrap UCL	209.4	95% Bootstrap-t UCL	229
95% Hall's Bootstrap UCL	213.8	95% Percentile Bootstrap UCL	210.5
95% BCA Bootstrap UCL	210.8		
90% Chebyshev(Mean, Sd) UCL	243.4	95% Chebyshev(Mean, Sd) UCL	274
97.5% Chebyshev(Mean, Sd) UCL	316.5	99% Chebyshev(Mean, Sd) UCL	400

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	56.5	Mean	97.38
Maximum	137	Median	95.1
SD	28.91	Std. Error of Mean	11.8
Coefficient of Variation	0.297	Skewness	-0.0321
Mean of logged Data	4.539	SD of logged Data	0.317

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	121.2	95% Adjusted-CLT UCL (Chen-1995)	116.6
		95% Modified-t UCL (Johnson-1978)	121.1

Nonparametric Distribution Free UCLs

95% CLT UCL	116.8	95% Jackknife UCL	121.2
95% Standard Bootstrap UCL	115.3	95% Bootstrap-t UCL	120.2
95% Hall's Bootstrap UCL	115.7	95% Percentile Bootstrap UCL	114.8
95% BCA Bootstrap UCL	115.4		
90% Chebyshev(Mean, Sd) UCL	132.8	95% Chebyshev(Mean, Sd) UCL	148.8
97.5% Chebyshev(Mean, Sd) UCL	171.1	99% Chebyshev(Mean, Sd) UCL	214.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	39.3	Mean	68.73
Maximum	94.8	Median	65.4
SD	22.41	Std. Error of Mean	9.149
Coefficient of Variation	0.326	Skewness	0.0542
Mean of logged Data	4.183	SD of logged Data	0.344

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	87.17	95% Adjusted-CLT UCL (Chen-1995)	84
		95% Modified-t UCL (Johnson-1978)	87.2

Nonparametric Distribution Free UCLs

95% CLT UCL	83.78	95% Jackknife UCL	87.17
95% Standard Bootstrap UCL	82.39	95% Bootstrap-t UCL	87.39
95% Hall's Bootstrap UCL	86.18	95% Percentile Bootstrap UCL	82.1
95% BCA Bootstrap UCL	81.43		
90% Chebyshev(Mean, Sd) UCL	96.18	95% Chebyshev(Mean, Sd) UCL	108.6
97.5% Chebyshev(Mean, Sd) UCL	125.9	99% Chebyshev(Mean, Sd) UCL	159.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	77.3	Mean	124.6
Maximum	188	Median	121
SD	39.89	Std. Error of Mean	16.28
Coefficient of Variation	0.32	Skewness	0.609
Mean of logged Data	4.782	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	157.4	95% Adjusted-CLT UCL (Chen-1995)	155.7
		95% Modified-t UCL (Johnson-1978)	158.1

Nonparametric Distribution Free UCLs

95% CLT UCL	151.4	95% Jackknife UCL	157.4
95% Standard Bootstrap UCL	149.3	95% Bootstrap-t UCL	168.2
95% Hall's Bootstrap UCL	154.9	95% Percentile Bootstrap UCL	149.8
95% BCA Bootstrap UCL	151.7		
90% Chebyshev(Mean, Sd) UCL	173.4	95% Chebyshev(Mean, Sd) UCL	195.5
97.5% Chebyshev(Mean, Sd) UCL	226.3	99% Chebyshev(Mean, Sd) UCL	286.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.7	Mean	25.02
Maximum	34.6	Median	24.65
SD	7.914	Std. Error of Mean	3.231
Coefficient of Variation	0.316	Skewness	-0.21

Mean of logged Data	3.173	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.53	95% Adjusted-CLT UCL (Chen-1995)	30.03
		95% Modified-t UCL (Johnson-1978)	31.48

Nonparametric Distribution Free UCLs

95% CLT UCL	30.33	95% Jackknife UCL	31.53
95% Standard Bootstrap UCL	29.93	95% Bootstrap-t UCL	31.47
95% Hall's Bootstrap UCL	29.35	95% Percentile Bootstrap UCL	29.7
95% BCA Bootstrap UCL	29.77		
90% Chebyshev(Mean, Sd) UCL	34.71	95% Chebyshev(Mean, Sd) UCL	39.1
97.5% Chebyshev(Mean, Sd) UCL	45.19	99% Chebyshev(Mean, Sd) UCL	57.16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	97.5	Mean	174.4
Maximum	286	Median	169
SD	66.05	Std. Error of Mean	26.96
Coefficient of Variation	0.379	Skewness	0.868
Mean of logged Data	5.103	SD of logged Data	0.375

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	228.8	95% Adjusted-CLT UCL (Chen-1995)	229

		95% Modified-t UCL (Johnson-1978)	230.3

Nonparametric Distribution Free UCLs

95% CLT UCL	218.8	95% Jackknife UCL	228.8
95% Standard Bootstrap UCL	216.1	95% Bootstrap-t UCL	248.5
95% Hall's Bootstrap UCL	248.2	95% Percentile Bootstrap UCL	215.8
95% BCA Bootstrap UCL	220.7		
90% Chebyshev(Mean, Sd) UCL	255.3	95% Chebyshev(Mean, Sd) UCL	292
97.5% Chebyshev(Mean, Sd) UCL	342.8	99% Chebyshev(Mean, Sd) UCL	442.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.3	Mean	1.642
Maximum	2.26	Median	1.53
SD	0.377	Std. Error of Mean	0.169
Coefficient of Variation	0.23	Skewness	1.414
Mean of logged Data	0.477	SD of logged Data	0.215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.002	95% Adjusted-CLT UCL (Chen-1995)	2.034
		95% Modified-t UCL (Johnson-1978)	2.02

Nonparametric Distribution Free UCLs

95% CLT UCL	1.92	95% Jackknife UCL	2.002
95% Standard Bootstrap UCL	1.891	95% Bootstrap-t UCL	2.445
95% Hall's Bootstrap UCL	3.415	95% Percentile Bootstrap UCL	1.92
95% BCA Bootstrap UCL	1.98		
90% Chebyshev(Mean, Sd) UCL	2.148	95% Chebyshev(Mean, Sd) UCL	2.378
97.5% Chebyshev(Mean, Sd) UCL	2.696	99% Chebyshev(Mean, Sd) UCL	3.322

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	64	Mean	110
Maximum	155	Median	105.5
SD	33.31	Std. Error of Mean	13.6
Coefficient of Variation	0.303	Skewness	0.047
Mean of logged Data	4.66	SD of logged Data	0.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	137.4	95% Adjusted-CLT UCL (Chen-1995)	132.7
		95% Modified-t UCL (Johnson-1978)	137.5

Nonparametric Distribution Free UCLs

95% CLT UCL	132.4	95% Jackknife UCL	137.4
95% Standard Bootstrap UCL	130.5	95% Bootstrap-t UCL	144.6
95% Hall's Bootstrap UCL	137.9	95% Percentile Bootstrap UCL	130.7
95% BCA Bootstrap UCL	131.5		
90% Chebyshev(Mean, Sd) UCL	150.8	95% Chebyshev(Mean, Sd) UCL	169.3
97.5% Chebyshev(Mean, Sd) UCL	195	99% Chebyshev(Mean, Sd) UCL	245.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.16	Mean	3.272
Maximum	4.18	Median	3.23
SD	0.722	Std. Error of Mean	0.295
Coefficient of Variation	0.221	Skewness	-0.326
Mean of logged Data	1.163	SD of logged Data	0.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.866	95% Adjusted-CLT UCL (Chen-1995)	3.715
		95% Modified-t UCL (Johnson-1978)	3.859

Nonparametric Distribution Free UCLs

95% CLT UCL	3.757	95% Jackknife UCL	3.866
95% Standard Bootstrap UCL	3.707	95% Bootstrap-t UCL	3.864
95% Hall's Bootstrap UCL	3.912	95% Percentile Bootstrap UCL	3.708
95% BCA Bootstrap UCL	3.702		
90% Chebyshev(Mean, Sd) UCL	4.156	95% Chebyshev(Mean, Sd) UCL	4.557
97.5% Chebyshev(Mean, Sd) UCL	5.113	99% Chebyshev(Mean, Sd) UCL	6.205

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.2	Mean	72.12
Maximum	118	Median	71.95
SD	28.36	Std. Error of Mean	11.58
Coefficient of Variation	0.393	Skewness	0.606
Mean of logged Data	4.212	SD of logged Data	0.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	95.45	95% Adjusted-CLT UCL (Chen-1995)	94.22
		95% Modified-t UCL (Johnson-1978)	95.93

Nonparametric Distribution Free UCLs

95% CLT UCL	91.16	95% Jackknife UCL	95.45
95% Standard Bootstrap UCL	89.67	95% Bootstrap-t UCL	99.95
95% Hall's Bootstrap UCL	98.17	95% Percentile Bootstrap UCL	90.53
95% BCA Bootstrap UCL	91.73		
90% Chebyshev(Mean, Sd) UCL	106.9	95% Chebyshev(Mean, Sd) UCL	122.6
97.5% Chebyshev(Mean, Sd) UCL	144.4	99% Chebyshev(Mean, Sd) UCL	187.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	95.9	Mean	164.7
Maximum	264	Median	159.5
SD	59.05	Std. Error of Mean	24.11
Coefficient of Variation	0.359	Skewness	0.856
Mean of logged Data	5.052	SD of logged Data	0.353

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	213.2	95% Adjusted-CLT UCL (Chen-1995)	213.3
		95% Modified-t UCL (Johnson-1978)	214.6

Nonparametric Distribution Free UCLs

95% CLT UCL	204.3	95% Jackknife UCL	213.2
95% Standard Bootstrap UCL	201.3	95% Bootstrap-t UCL	230.9
95% Hall's Bootstrap UCL	223.8	95% Percentile Bootstrap UCL	201.8
95% BCA Bootstrap UCL	206.7		
90% Chebyshev(Mean, Sd) UCL	237	95% Chebyshev(Mean, Sd) UCL	269.7
97.5% Chebyshev(Mean, Sd) UCL	315.2	99% Chebyshev(Mean, Sd) UCL	404.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	12.6	Mean	18.88
Maximum	26.1	Median	19.3
SD	5.145	Std. Error of Mean	2.101
Coefficient of Variation	0.272	Skewness	0.151
Mean of logged Data	2.906	SD of logged Data	0.279

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.12	95% Adjusted-CLT UCL (Chen-1995)	22.48
		95% Modified-t UCL (Johnson-1978)	23.14

Nonparametric Distribution Free UCLs

95% CLT UCL	22.34	95% Jackknife UCL	23.12
95% Standard Bootstrap UCL	22.04	95% Bootstrap-t UCL	23.42
95% Hall's Bootstrap UCL	21.8	95% Percentile Bootstrap UCL	21.93
95% BCA Bootstrap UCL	21.93		
90% Chebyshev(Mean, Sd) UCL	25.18	95% Chebyshev(Mean, Sd) UCL	28.04
97.5% Chebyshev(Mean, Sd) UCL	32	99% Chebyshev(Mean, Sd) UCL	39.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	20.67
Maximum	48.6	Median	14.45
SD	13.84	Std. Error of Mean	5.648
Coefficient of Variation	0.669	Skewness	2.337
Mean of logged Data	2.902	SD of logged Data	0.497

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.05	95% Adjusted-CLT UCL (Chen-1995)	35.72
		95% Modified-t UCL (Johnson-1978)	32.95

Nonparametric Distribution Free UCLs

95% CLT UCL	29.96	95% Jackknife UCL	32.05
95% Standard Bootstrap UCL	29.29	95% Bootstrap-t UCL	237.8
95% Hall's Bootstrap UCL	142.1	95% Percentile Bootstrap UCL	31.22
95% BCA Bootstrap UCL	32.97		
90% Chebyshev(Mean, Sd) UCL	37.61	95% Chebyshev(Mean, Sd) UCL	45.29
97.5% Chebyshev(Mean, Sd) UCL	55.94	99% Chebyshev(Mean, Sd) UCL	76.87

Suggested UCL to Use

95% Student's-t UCL	32.05	or 95% Modified-t UCL	32.95

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37.4	Mean	42.97
Maximum	50.2	Median	43.2
SD	4.581	Std. Error of Mean	1.87
Coefficient of Variation	0.107	Skewness	0.473
Mean of logged Data	3.756	SD of logged Data	0.106

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	46.74	95% Adjusted-CLT UCL (Chen-1995)	46.43
		95% Modified-t UCL (Johnson-1978)	46.8

Nonparametric Distribution Free UCLs

95% CLT UCL	46.04	95% Jackknife UCL	46.74
95% Standard Bootstrap UCL	45.85	95% Bootstrap-t UCL	47.1
95% Hall's Bootstrap UCL	46.51	95% Percentile Bootstrap UCL	45.82
95% BCA Bootstrap UCL	46.07		

90% Chebyshev(Mean, Sd) UCL	48.58	95% Chebyshev(Mean, Sd) UCL	51.12
97.5% Chebyshev(Mean, Sd) UCL	54.65	99% Chebyshev(Mean, Sd) UCL	61.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:50:34 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32436019) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.58	Mean	12.04
Maximum	21.1	Median	11.07
SD	7.146	Std. Error of Mean	2.917
Coefficient of Variation	0.593	Skewness	0.207
Mean of logged Data	2.319	SD of logged Data	0.656

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.92	95% Adjusted-CLT UCL (Chen-1995)	17.1
		95% Modified-t UCL (Johnson-1978)	17.96

Nonparametric Distribution Free UCLs

95% CLT UCL	16.84	95% Jackknife UCL	17.92
95% Standard Bootstrap UCL	16.41	95% Bootstrap-t UCL	19.96
95% Hall's Bootstrap UCL	14.98	95% Percentile Bootstrap UCL	16.76
95% BCA Bootstrap UCL	16.51		
90% Chebyshev(Mean, Sd) UCL	20.79	95% Chebyshev(Mean, Sd) UCL	24.76
97.5% Chebyshev(Mean, Sd) UCL	30.26	99% Chebyshev(Mean, Sd) UCL	41.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	15.8	Mean	39.72
Maximum	74.8	Median	36.1
SD	25.48	Std. Error of Mean	10.4
Coefficient of Variation	0.641	Skewness	0.337
Mean of logged Data	3.485	SD of logged Data	0.704

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.68	95% Adjusted-CLT UCL (Chen-1995)	58.35
		95% Modified-t UCL (Johnson-1978)	60.91

Nonparametric Distribution Free UCLs

95% CLT UCL	56.82	95% Jackknife UCL	60.68
95% Standard Bootstrap UCL	55.42	95% Bootstrap-t UCL	63.68
95% Hall's Bootstrap UCL	50.58	95% Percentile Bootstrap UCL	56.02
95% BCA Bootstrap UCL	56.63		
90% Chebyshev(Mean, Sd) UCL	70.92	95% Chebyshev(Mean, Sd) UCL	85.05
97.5% Chebyshev(Mean, Sd) UCL	104.7	99% Chebyshev(Mean, Sd) UCL	143.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	95.6	Mean	213.6
Maximum	423	Median	187.5
SD	126.2	Std. Error of Mean	51.52
Coefficient of Variation	0.591	Skewness	0.925
Mean of logged Data	5.22	SD of logged Data	0.587

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	317.4	95% Adjusted-CLT UCL (Chen-1995)	319.1
		95% Modified-t UCL (Johnson-1978)	320.7

Nonparametric Distribution Free UCLs

95% CLT UCL	298.3	95% Jackknife UCL	317.4
95% Standard Bootstrap UCL	291.9	95% Bootstrap-t UCL	387.6
95% Hall's Bootstrap UCL	300	95% Percentile Bootstrap UCL	292.8
95% BCA Bootstrap UCL	295.7		
90% Chebyshev(Mean, Sd) UCL	368.2	95% Chebyshev(Mean, Sd) UCL	438.2
97.5% Chebyshev(Mean, Sd) UCL	535.4	99% Chebyshev(Mean, Sd) UCL	726.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	481	Mean	975.5
Maximum	1590	Median	895
SD	465.8	Std. Error of Mean	190.1
Coefficient of Variation	0.477	Skewness	0.36
Mean of logged Data	6.782	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1359	95% Adjusted-CLT UCL (Chen-1995)	1318
		95% Modified-t UCL (Johnson-1978)	1363

Nonparametric Distribution Free UCLs

95% CLT UCL	1288	95% Jackknife UCL	1359
95% Standard Bootstrap UCL	1262	95% Bootstrap-t UCL	1430
95% Hall's Bootstrap UCL	1304	95% Percentile Bootstrap UCL	1279
95% BCA Bootstrap UCL	1279		
90% Chebyshev(Mean, Sd) UCL	1546	95% Chebyshev(Mean, Sd) UCL	1804
97.5% Chebyshev(Mean, Sd) UCL	2163	99% Chebyshev(Mean, Sd) UCL	2867

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	533	Mean	1104
Maximum	1760	Median	997.5
SD	540	Std. Error of Mean	220.4
Coefficient of Variation	0.489	Skewness	0.345
Mean of logged Data	6.9	SD of logged Data	0.512

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1548	95% Adjusted-CLT UCL (Chen-1995)	1500
		95% Modified-t UCL (Johnson-1978)	1553

Nonparametric Distribution Free UCLs

95% CLT UCL	1466	95% Jackknife UCL	1548
95% Standard Bootstrap UCL	1432	95% Bootstrap-t UCL	1602
95% Hall's Bootstrap UCL	1476	95% Percentile Bootstrap UCL	1461
95% BCA Bootstrap UCL	1437		
90% Chebyshev(Mean, Sd) UCL	1765	95% Chebyshev(Mean, Sd) UCL	2065
97.5% Chebyshev(Mean, Sd) UCL	2480	99% Chebyshev(Mean, Sd) UCL	3297

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	725	Mean	1424
Maximum	2290	Median	1305
SD	666.5	Std. Error of Mean	272.1
Coefficient of Variation	0.468	Skewness	0.35
Mean of logged Data	7.165	SD of logged Data	0.487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1972	95% Adjusted-CLT UCL (Chen-1995)	1913
		95% Modified-t UCL (Johnson-1978)	1979

Nonparametric Distribution Free UCLs

95% CLT UCL	1871	95% Jackknife UCL	1972
95% Standard Bootstrap UCL	1821	95% Bootstrap-t UCL	2015
95% Hall's Bootstrap UCL	1872	95% Percentile Bootstrap UCL	1840
95% BCA Bootstrap UCL	1823		
90% Chebyshev(Mean, Sd) UCL	2240	95% Chebyshev(Mean, Sd) UCL	2610
97.5% Chebyshev(Mean, Sd) UCL	3123	99% Chebyshev(Mean, Sd) UCL	4131

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	380	Mean	750.3
Maximum	1200	Median	693
SD	355.3	Std. Error of Mean	145
Coefficient of Variation	0.473	Skewness	0.291
Mean of logged Data	6.521	SD of logged Data	0.496

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1043	95% Adjusted-CLT UCL (Chen-1995)	1007
		95% Modified-t UCL (Johnson-1978)	1045

Nonparametric Distribution Free UCLs

95% CLT UCL	988.9	95% Jackknife UCL	1043

95% Standard Bootstrap UCL	970.2	95% Bootstrap-t UCL	1056
95% Hall's Bootstrap UCL	945.1	95% Percentile Bootstrap UCL	975.3
95% BCA Bootstrap UCL	975.3		
90% Chebyshev(Mean, Sd) UCL	1185	95% Chebyshev(Mean, Sd) UCL	1383
97.5% Chebyshev(Mean, Sd) UCL	1656	99% Chebyshev(Mean, Sd) UCL	2193

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	276	Mean	566
Maximum	941	Median	508.5
SD	288	Std. Error of Mean	117.6
Coefficient of Variation	0.509	Skewness	0.402
Mean of logged Data	6.224	SD of logged Data	0.531

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	802.9	95% Adjusted-CLT UCL (Chen-1995)	780
		95% Modified-t UCL (Johnson-1978)	806.2

Nonparametric Distribution Free UCLs

95% CLT UCL	759.4	95% Jackknife UCL	802.9
95% Standard Bootstrap UCL	740.6	95% Bootstrap-t UCL	844.9
95% Hall's Bootstrap UCL	788	95% Percentile Bootstrap UCL	741.2
95% BCA Bootstrap UCL	741.2		
90% Chebyshev(Mean, Sd) UCL	918.8	95% Chebyshev(Mean, Sd) UCL	1079
97.5% Chebyshev(Mean, Sd) UCL	1300	99% Chebyshev(Mean, Sd) UCL	1736

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	614	Mean	1223
Maximum	2010	Median	1155
SD	581.5	Std. Error of Mean	237.4
Coefficient of Variation	0.475	Skewness	0.294
Mean of logged Data	7.008	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1701	95% Adjusted-CLT UCL (Chen-1995)	1644
		95% Modified-t UCL (Johnson-1978)	1706

Nonparametric Distribution Free UCLs

95% CLT UCL	1613	95% Jackknife UCL	1701
95% Standard Bootstrap UCL	1580	95% Bootstrap-t UCL	1715
95% Hall's Bootstrap UCL	1513	95% Percentile Bootstrap UCL	1584
95% BCA Bootstrap UCL	1625		
90% Chebyshev(Mean, Sd) UCL	1935	95% Chebyshev(Mean, Sd) UCL	2258
97.5% Chebyshev(Mean, Sd) UCL	2705	99% Chebyshev(Mean, Sd) UCL	3585

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	91.4	Mean	181.9
Maximum	309	Median	165.5
SD	89.02	Std. Error of Mean	36.34
Coefficient of Variation	0.489	Skewness	0.448
Mean of logged Data	5.099	SD of logged Data	0.504

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	255.1	95% Adjusted-CLT UCL (Chen-1995)	248.8
		95% Modified-t UCL (Johnson-1978)	256.2

Nonparametric Distribution Free UCLs

95% CLT UCL	241.7	95% Jackknife UCL	255.1
95% Standard Bootstrap UCL	237.8	95% Bootstrap-t UCL	296.4
95% Hall's Bootstrap UCL	224.7	95% Percentile Bootstrap UCL	237.7
95% BCA Bootstrap UCL	235.3		
90% Chebyshev(Mean, Sd) UCL	290.9	95% Chebyshev(Mean, Sd) UCL	340.3
97.5% Chebyshev(Mean, Sd) UCL	408.9	99% Chebyshev(Mean, Sd) UCL	543.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	965	Mean	2039
Maximum	3520	Median	1840
SD	1018	Std. Error of Mean	415.7
Coefficient of Variation	0.499	Skewness	0.528
Mean of logged Data	7.512	SD of logged Data	0.516

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2877	95% Adjusted-CLT UCL (Chen-1995)	2819
		95% Modified-t UCL (Johnson-1978)	2892

Nonparametric Distribution Free UCLs

95% CLT UCL	2723	95% Jackknife UCL	2877
95% Standard Bootstrap UCL	2678	95% Bootstrap-t UCL	3142
95% Hall's Bootstrap UCL	3029	95% Percentile Bootstrap UCL	2693
95% BCA Bootstrap UCL	2666		
90% Chebyshev(Mean, Sd) UCL	3286	95% Chebyshev(Mean, Sd) UCL	3851
97.5% Chebyshev(Mean, Sd) UCL	4635	99% Chebyshev(Mean, Sd) UCL	6176

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.99	Mean	23.28
Maximum	53.1	Median	19.82
SD	18.24	Std. Error of Mean	7.448
Coefficient of Variation	0.784	Skewness	0.858
Mean of logged Data	2.864	SD of logged Data	0.843

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.28	95% Adjusted-CLT UCL (Chen-1995)	38.31
		95% Modified-t UCL (Johnson-1978)	38.72

Nonparametric Distribution Free UCLs

95% CLT UCL	35.53	95% Jackknife UCL	38.28
95% Standard Bootstrap UCL	34.39	95% Bootstrap-t UCL	45.6
95% Hall's Bootstrap UCL	34.9	95% Percentile Bootstrap UCL	34.57
95% BCA Bootstrap UCL	34.76		
90% Chebyshev(Mean, Sd) UCL	45.62	95% Chebyshev(Mean, Sd) UCL	55.74
97.5% Chebyshev(Mean, Sd) UCL	69.79	99% Chebyshev(Mean, Sd) UCL	97.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	446	Mean	873.5
Maximum	1380	Median	800.5
SD	408.7	Std. Error of Mean	166.8
Coefficient of Variation	0.468	Skewness	0.312
Mean of logged Data	6.676	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1210	95% Adjusted-CLT UCL (Chen-1995)	1171
		95% Modified-t UCL (Johnson-1978)	1213

Nonparametric Distribution Free UCLs

95% CLT UCL	1148	95% Jackknife UCL	1210
95% Standard Bootstrap UCL	1121	95% Bootstrap-t UCL	1201
95% Hall's Bootstrap UCL	1132	95% Percentile Bootstrap UCL	1119
95% BCA Bootstrap UCL	1130		
90% Chebyshev(Mean, Sd) UCL	1374	95% Chebyshev(Mean, Sd) UCL	1601
97.5% Chebyshev(Mean, Sd) UCL	1915	99% Chebyshev(Mean, Sd) UCL	2534

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15	Mean	38.65
Maximum	70.3	Median	36
SD	23.23	Std. Error of Mean	9.484
Coefficient of Variation	0.601	Skewness	0.291
Mean of logged Data	3.483	SD of logged Data	0.658

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	57.76	95% Adjusted-CLT UCL (Chen-1995)	55.45
		95% Modified-t UCL (Johnson-1978)	57.95

Nonparametric Distribution Free UCLs

95% CLT UCL	54.25	95% Jackknife UCL	57.76
95% Standard Bootstrap UCL	53.26	95% Bootstrap-t UCL	59.95
95% Hall's Bootstrap UCL	48.81	95% Percentile Bootstrap UCL	53.2
95% BCA Bootstrap UCL	52.97		
90% Chebyshev(Mean, Sd) UCL	67.1	95% Chebyshev(Mean, Sd) UCL	79.99
97.5% Chebyshev(Mean, Sd) UCL	97.88	99% Chebyshev(Mean, Sd) UCL	133

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	491	Mean	1004
Maximum	1750	Median	916.5
SD	510	Std. Error of Mean	208.2
Coefficient of Variation	0.508	Skewness	0.492
Mean of logged Data	6.799	SD of logged Data	0.524

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1423	95% Adjusted-CLT UCL (Chen-1995)	1391
		95% Modified-t UCL (Johnson-1978)	1430

Nonparametric Distribution Free UCLs

95% CLT UCL	1346	95% Jackknife UCL	1423
95% Standard Bootstrap UCL	1313	95% Bootstrap-t UCL	1467
95% Hall's Bootstrap UCL	1275	95% Percentile Bootstrap UCL	1322
95% BCA Bootstrap UCL	1355		
90% Chebyshev(Mean, Sd) UCL	1628	95% Chebyshev(Mean, Sd) UCL	1911
97.5% Chebyshev(Mean, Sd) UCL	2304	99% Chebyshev(Mean, Sd) UCL	3076

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	861	Mean	1849
Maximum	3180	Median	1650
SD	936.1	Std. Error of Mean	382.2
Coefficient of Variation	0.506	Skewness	0.503
Mean of logged Data	7.41	SD of logged Data	0.524

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2619	95% Adjusted-CLT UCL (Chen-1995)	2561
		95% Modified-t UCL (Johnson-1978)	2632

Nonparametric Distribution Free UCLs

95% CLT UCL	2477	95% Jackknife UCL	2619
95% Standard Bootstrap UCL	2410	95% Bootstrap-t UCL	2778
95% Hall's Bootstrap UCL	2634	95% Percentile Bootstrap UCL	2438
95% BCA Bootstrap UCL	2487		
90% Chebyshev(Mean, Sd) UCL	2995	95% Chebyshev(Mean, Sd) UCL	3514
97.5% Chebyshev(Mean, Sd) UCL	4235	99% Chebyshev(Mean, Sd) UCL	5651

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.6	Mean	26.67
Maximum	50.7	Median	22.85
SD	14.9	Std. Error of Mean	6.083
Coefficient of Variation	0.559	Skewness	0.842
Mean of logged Data	3.155	SD of logged Data	0.552

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.92	95% Adjusted-CLT UCL (Chen-1995)	38.91
		95% Modified-t UCL (Johnson-1978)	39.27

Nonparametric Distribution Free UCLs

95% CLT UCL	36.67	95% Jackknife UCL	38.92
95% Standard Bootstrap UCL	35.93	95% Bootstrap-t UCL	41.89
95% Hall's Bootstrap UCL	37.1	95% Percentile Bootstrap UCL	36.25
95% BCA Bootstrap UCL	37.47		
90% Chebyshev(Mean, Sd) UCL	44.92	95% Chebyshev(Mean, Sd) UCL	53.18
97.5% Chebyshev(Mean, Sd) UCL	64.66	99% Chebyshev(Mean, Sd) UCL	87.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	19.3	Mean	26.68
Maximum	53.7	Median	21.45
SD	13.36	Std. Error of Mean	5.455
Coefficient of Variation	0.501	Skewness	2.348
Mean of logged Data	3.209	SD of logged Data	0.389

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.68	95% Adjusted-CLT UCL (Chen-1995)	41.24
		95% Modified-t UCL (Johnson-1978)	38.55

Nonparametric Distribution Free UCLs

95% CLT UCL	35.66	95% Jackknife UCL	37.68

95% Standard Bootstrap UCL	34.72	95% Bootstrap-t UCL	106.3
95% Hall's Bootstrap UCL	82.25	95% Percentile Bootstrap UCL	36.97
95% BCA Bootstrap UCL	38.08		
90% Chebyshev(Mean, Sd) UCL	43.05	95% Chebyshev(Mean, Sd) UCL	50.46
97.5% Chebyshev(Mean, Sd) UCL	60.75	99% Chebyshev(Mean, Sd) UCL	80.96

Suggested UCL to Use

95% Student's-t UCL	37.68	or 95% Modified-t UCL	38.55

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	37	Mean	43.68
Maximum	47.4	Median	44.2
SD	3.663	Std. Error of Mean	1.495
Coefficient of Variation	0.0839	Skewness	-1.387
Mean of logged Data	3.774	SD of logged Data	0.0877

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	46.7	95% Adjusted-CLT UCL (Chen-1995)	45.24
		95% Modified-t UCL (Johnson-1978)	46.56

Nonparametric Distribution Free UCLs

95% CLT UCL	46.14	95% Jackknife UCL	46.7
95% Standard Bootstrap UCL	45.96	95% Bootstrap-t UCL	45.88
95% Hall's Bootstrap UCL	45.39	95% Percentile Bootstrap UCL	45.75
95% BCA Bootstrap UCL	45.33		
90% Chebyshev(Mean, Sd) UCL	48.17	95% Chebyshev(Mean, Sd) UCL	50.2
97.5% Chebyshev(Mean, Sd) UCL	53.02	99% Chebyshev(Mean, Sd) UCL	58.56

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:03:45 AM
From File	Table 1. Parcel Analytical Results (APN32436020) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.01	Mean	11.24
Maximum	30.4	Median	5.39
SD	11.5	Std. Error of Mean	4.694
Coefficient of Variation	1.023	Skewness	1.22
Mean of logged Data	1.969	SD of logged Data	1.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.7	95% Adjusted-CLT UCL (Chen-1995)	21.46
		95% Modified-t UCL (Johnson-1978)	21.09

Nonparametric Distribution Free UCLs

95% CLT UCL	18.96	95% Jackknife UCL	20.7
95% Standard Bootstrap UCL	18.22	95% Bootstrap-t UCL	60.02
95% Hall's Bootstrap UCL	86.48	95% Percentile Bootstrap UCL	18.32
95% BCA Bootstrap UCL	20.3		
90% Chebyshev(Mean, Sd) UCL	25.32	95% Chebyshev(Mean, Sd) UCL	31.7
97.5% Chebyshev(Mean, Sd) UCL	40.55	99% Chebyshev(Mean, Sd) UCL	57.94

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	7.1	Mean	37.44
Maximum	97.2	Median	19.2
SD	38.19	Std. Error of Mean	15.59
Coefficient of Variation	1.02	Skewness	1.016
Mean of logged Data	3.134	SD of logged Data	1.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.86	95% Adjusted-CLT UCL (Chen-1995)	70
		95% Modified-t UCL (Johnson-1978)	69.94

Nonparametric Distribution Free UCLs

95% CLT UCL	63.09	95% Jackknife UCL	68.86
95% Standard Bootstrap UCL	60.57	95% Bootstrap-t UCL	135.9
95% Hall's Bootstrap UCL	256.1	95% Percentile Bootstrap UCL	63.44
95% BCA Bootstrap UCL	64.63		
90% Chebyshev(Mean, Sd) UCL	84.21	95% Chebyshev(Mean, Sd) UCL	105.4
97.5% Chebyshev(Mean, Sd) UCL	134.8	99% Chebyshev(Mean, Sd) UCL	192.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.5	Mean	91.82
Maximum	210	Median	63.4
SD	62.57	Std. Error of Mean	25.54
Coefficient of Variation	0.681	Skewness	1.799
Mean of logged Data	4.368	SD of logged Data	0.567

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	143.3	95% Adjusted-CLT UCL (Chen-1995)	153.9
		95% Modified-t UCL (Johnson-1978)	146.4

Nonparametric Distribution Free UCLs

95% CLT UCL	133.8	95% Jackknife UCL	143.3
95% Standard Bootstrap UCL	129.9	95% Bootstrap-t UCL	390.7
95% Hall's Bootstrap UCL	394.7	95% Percentile Bootstrap UCL	133.1
95% BCA Bootstrap UCL	156.7		
90% Chebyshev(Mean, Sd) UCL	168.4	95% Chebyshev(Mean, Sd) UCL	203.2
97.5% Chebyshev(Mean, Sd) UCL	251.3	99% Chebyshev(Mean, Sd) UCL	346

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	257	Mean	455.7
Maximum	903	Median	365
SD	239.7	Std. Error of Mean	97.85
Coefficient of Variation	0.526	Skewness	1.662
Mean of logged Data	6.026	SD of logged Data	0.459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	652.8	95% Adjusted-CLT UCL (Chen-1995)	687.6
		95% Modified-t UCL (Johnson-1978)	663.9

Nonparametric Distribution Free UCLs

95% CLT UCL	616.6	95% Jackknife UCL	652.8
95% Standard Bootstrap UCL	599.5	95% Bootstrap-t UCL	894.9
95% Hall's Bootstrap UCL	1357	95% Percentile Bootstrap UCL	618.8
95% BCA Bootstrap UCL	661.7		
90% Chebyshev(Mean, Sd) UCL	749.2	95% Chebyshev(Mean, Sd) UCL	882.2
97.5% Chebyshev(Mean, Sd) UCL	1067	99% Chebyshev(Mean, Sd) UCL	1429

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	271	Mean	462.3
Maximum	955	Median	358.5
SD	264	Std. Error of Mean	107.8
Coefficient of Variation	0.571	Skewness	1.67
Mean of logged Data	6.024	SD of logged Data	0.494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	679.5	95% Adjusted-CLT UCL (Chen-1995)	718.1
		95% Modified-t UCL (Johnson-1978)	691.8

Nonparametric Distribution Free UCLs

95% CLT UCL	639.6	95% Jackknife UCL	679.5
95% Standard Bootstrap UCL	627.2	95% Bootstrap-t UCL	1143
95% Hall's Bootstrap UCL	1341	95% Percentile Bootstrap UCL	642.2
95% BCA Bootstrap UCL	687.3		
90% Chebyshev(Mean, Sd) UCL	785.7	95% Chebyshev(Mean, Sd) UCL	932.1
97.5% Chebyshev(Mean, Sd) UCL	1135	99% Chebyshev(Mean, Sd) UCL	1535

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	340	Mean	630.3
Maximum	1260	Median	535
SD	333	Std. Error of Mean	135.9
Coefficient of Variation	0.528	Skewness	1.721
Mean of logged Data	6.35	SD of logged Data	0.461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	904.3	95% Adjusted-CLT UCL (Chen-1995)	956
		95% Modified-t UCL (Johnson-1978)	920.2

Nonparametric Distribution Free UCLs

95% CLT UCL	853.9	95% Jackknife UCL	904.3
95% Standard Bootstrap UCL	832.5	95% Bootstrap-t UCL	1253
95% Hall's Bootstrap UCL	1723	95% Percentile Bootstrap UCL	862.7
95% BCA Bootstrap UCL	931.5		
90% Chebyshev(Mean, Sd) UCL	1038	95% Chebyshev(Mean, Sd) UCL	1223
97.5% Chebyshev(Mean, Sd) UCL	1479	99% Chebyshev(Mean, Sd) UCL	1983

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	161	Mean	343.2
Maximum	682	Median	298.5
SD	178.7	Std. Error of Mean	72.94
Coefficient of Variation	0.521	Skewness	1.686
Mean of logged Data	5.741	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	490.1	95% Adjusted-CLT UCL (Chen-1995)	516.8
		95% Modified-t UCL (Johnson-1978)	498.5

Nonparametric Distribution Free UCLs

95% CLT UCL	463.1	95% Jackknife UCL	490.1

95% Standard Bootstrap UCL	454.2	95% Bootstrap-t UCL	622.8
95% Hall's Bootstrap UCL	1125	95% Percentile Bootstrap UCL	475.2
95% BCA Bootstrap UCL	500.5		
90% Chebyshev(Mean, Sd) UCL	562	95% Chebyshev(Mean, Sd) UCL	661.1
97.5% Chebyshev(Mean, Sd) UCL	798.7	99% Chebyshev(Mean, Sd) UCL	1069

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	139	Mean	259.5
Maximum	485	Median	231.5
SD	124.4	Std. Error of Mean	50.78
Coefficient of Variation	0.479	Skewness	1.391
Mean of logged Data	5.473	SD of logged Data	0.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	361.8	95% Adjusted-CLT UCL (Chen-1995)	373.9
		95% Modified-t UCL (Johnson-1978)	366.6

Nonparametric Distribution Free UCLs

95% CLT UCL	343	95% Jackknife UCL	361.8
95% Standard Bootstrap UCL	334.9	95% Bootstrap-t UCL	431.6
95% Hall's Bootstrap UCL	636.1	95% Percentile Bootstrap UCL	344
95% BCA Bootstrap UCL	357		
90% Chebyshev(Mean, Sd) UCL	411.9	95% Chebyshev(Mean, Sd) UCL	480.9
97.5% Chebyshev(Mean, Sd) UCL	576.6	99% Chebyshev(Mean, Sd) UCL	764.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	292	Mean	568.2
Maximum	1170	Median	432.5
SD	333.4	Std. Error of Mean	136.1
Coefficient of Variation	0.587	Skewness	1.481
Mean of logged Data	6.219	SD of logged Data	0.523

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	842.4	95% Adjusted-CLT UCL (Chen-1995)	880
		95% Modified-t UCL (Johnson-1978)	856.2

Nonparametric Distribution Free UCLs

95% CLT UCL	792	95% Jackknife UCL	842.4
95% Standard Bootstrap UCL	773.3	95% Bootstrap-t UCL	1275
95% Hall's Bootstrap UCL	1953	95% Percentile Bootstrap UCL	791
95% BCA Bootstrap UCL	850.8		
90% Chebyshev(Mean, Sd) UCL	976.5	95% Chebyshev(Mean, Sd) UCL	1161
97.5% Chebyshev(Mean, Sd) UCL	1418	99% Chebyshev(Mean, Sd) UCL	1922

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	33.8	Mean	77.47
Maximum	155	Median	67.85
SD	45.54	Std. Error of Mean	18.59
Coefficient of Variation	0.588	Skewness	1.049
Mean of logged Data	4.21	SD of logged Data	0.579

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	114.9	95% Adjusted-CLT UCL (Chen-1995)	116.6
		95% Modified-t UCL (Johnson-1978)	116.3

Nonparametric Distribution Free UCLs

95% CLT UCL	108	95% Jackknife UCL	114.9
95% Standard Bootstrap UCL	105.7	95% Bootstrap-t UCL	131.6
95% Hall's Bootstrap UCL	130.9	95% Percentile Bootstrap UCL	107.6
95% BCA Bootstrap UCL	109.8		
90% Chebyshev(Mean, Sd) UCL	133.2	95% Chebyshev(Mean, Sd) UCL	158.5
97.5% Chebyshev(Mean, Sd) UCL	193.6	99% Chebyshev(Mean, Sd) UCL	262.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	440	Mean	754.5
Maximum	1560	Median	597
SD	409.8	Std. Error of Mean	167.3
Coefficient of Variation	0.543	Skewness	2.072
Mean of logged Data	6.533	SD of logged Data	0.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1092	95% Adjusted-CLT UCL (Chen-1995)	1181
		95% Modified-t UCL (Johnson-1978)	1115

Nonparametric Distribution Free UCLs

95% CLT UCL	1030	95% Jackknife UCL	1092
95% Standard Bootstrap UCL	1009	95% Bootstrap-t UCL	2031
95% Hall's Bootstrap UCL	2713	95% Percentile Bootstrap UCL	1046
95% BCA Bootstrap UCL	1139		
90% Chebyshev(Mean, Sd) UCL	1256	95% Chebyshev(Mean, Sd) UCL	1484
97.5% Chebyshev(Mean, Sd) UCL	1799	99% Chebyshev(Mean, Sd) UCL	2419

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.13	Mean	17.49
Maximum	50.6	Median	8.57
SD	18.58	Std. Error of Mean	7.587
Coefficient of Variation	1.063	Skewness	1.48
Mean of logged Data	2.415	SD of logged Data	1.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.78	95% Adjusted-CLT UCL (Chen-1995)	34.87
		95% Modified-t UCL (Johnson-1978)	33.54

Nonparametric Distribution Free UCLs

95% CLT UCL	29.97	95% Jackknife UCL	32.78
95% Standard Bootstrap UCL	28.65	95% Bootstrap-t UCL	106.8
95% Hall's Bootstrap UCL	123.9	95% Percentile Bootstrap UCL	28.91
95% BCA Bootstrap UCL	32.21		
90% Chebyshev(Mean, Sd) UCL	40.25	95% Chebyshev(Mean, Sd) UCL	50.56
97.5% Chebyshev(Mean, Sd) UCL	64.87	99% Chebyshev(Mean, Sd) UCL	92.98

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	198	Mean	362.5
Maximum	738	Median	324.5
SD	194.6	Std. Error of Mean	79.46
Coefficient of Variation	0.537	Skewness	1.872
Mean of logged Data	5.796	SD of logged Data	0.459

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	522.6	95% Adjusted-CLT UCL (Chen-1995)	558.1
		95% Modified-t UCL (Johnson-1978)	532.7

Nonparametric Distribution Free UCLs

95% CLT UCL	493.2	95% Jackknife UCL	522.6
95% Standard Bootstrap UCL	479.1	95% Bootstrap-t UCL	698.7
95% Hall's Bootstrap UCL	1050	95% Percentile Bootstrap UCL	504.8
95% BCA Bootstrap UCL	544.5		
90% Chebyshev(Mean, Sd) UCL	600.9	95% Chebyshev(Mean, Sd) UCL	708.8
97.5% Chebyshev(Mean, Sd) UCL	858.7	99% Chebyshev(Mean, Sd) UCL	1153

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.51	Mean	35.32
Maximum	103	Median	19.15
SD	37.71	Std. Error of Mean	15.4
Coefficient of Variation	1.068	Skewness	1.461
Mean of logged Data	3.069	SD of logged Data	1.109

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	66.34	95% Adjusted-CLT UCL (Chen-1995)	70.46
		95% Modified-t UCL (Johnson-1978)	67.87

Nonparametric Distribution Free UCLs

95% CLT UCL	60.64	95% Jackknife UCL	66.34
95% Standard Bootstrap UCL	58.75	95% Bootstrap-t UCL	123.7
95% Hall's Bootstrap UCL	183.1	95% Percentile Bootstrap UCL	58.8
95% BCA Bootstrap UCL	64.07		
90% Chebyshev(Mean, Sd) UCL	81.51	95% Chebyshev(Mean, Sd) UCL	102.4
97.5% Chebyshev(Mean, Sd) UCL	131.5	99% Chebyshev(Mean, Sd) UCL	188.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	218	Mean	391.5
Maximum	837	Median	304
SD	229.5	Std. Error of Mean	93.71
Coefficient of Variation	0.586	Skewness	1.971
Mean of logged Data	5.86	SD of logged Data	0.482

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	580.3	95% Adjusted-CLT UCL (Chen-1995)	626.2
		95% Modified-t UCL (Johnson-1978)	592.9

Nonparametric Distribution Free UCLs

95% CLT UCL	545.6	95% Jackknife UCL	580.3
95% Standard Bootstrap UCL	532.8	95% Bootstrap-t UCL	1113
95% Hall's Bootstrap UCL	1394	95% Percentile Bootstrap UCL	547.3
95% BCA Bootstrap UCL	604.3		
90% Chebyshev(Mean, Sd) UCL	672.6	95% Chebyshev(Mean, Sd) UCL	800
97.5% Chebyshev(Mean, Sd) UCL	976.7	99% Chebyshev(Mean, Sd) UCL	1324

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	374	Mean	714
Maximum	1500	Median	535
SD	420.4	Std. Error of Mean	171.6
Coefficient of Variation	0.589	Skewness	1.709
Mean of logged Data	6.453	SD of logged Data	0.505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1060	95% Adjusted-CLT UCL (Chen-1995)	1124
		95% Modified-t UCL (Johnson-1978)	1080

Nonparametric Distribution Free UCLs

95% CLT UCL	996.3	95% Jackknife UCL	1060
95% Standard Bootstrap UCL	970.1	95% Bootstrap-t UCL	2068
95% Hall's Bootstrap UCL	2851	95% Percentile Bootstrap UCL	1007
95% BCA Bootstrap UCL	1119		
90% Chebyshev(Mean, Sd) UCL	1229	95% Chebyshev(Mean, Sd) UCL	1462
97.5% Chebyshev(Mean, Sd) UCL	1786	99% Chebyshev(Mean, Sd) UCL	2422

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.074	Mean	0.723
Maximum	1.36	Median	0.74
SD	0.455	Std. Error of Mean	0.204
Coefficient of Variation	0.63	Skewness	-0.0636
Mean of logged Data	-0.651	SD of logged Data	1.125

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.157	95% Adjusted-CLT UCL (Chen-1995)	1.051
		95% Modified-t UCL (Johnson-1978)	1.156

Nonparametric Distribution Free UCLs

95% CLT UCL	1.058	95% Jackknife UCL	1.157
95% Standard Bootstrap UCL	1.024	95% Bootstrap-t UCL	1.069
95% Hall's Bootstrap UCL	1.1	95% Percentile Bootstrap UCL	0.989
95% BCA Bootstrap UCL	0.981		
90% Chebyshev(Mean, Sd) UCL	1.333	95% Chebyshev(Mean, Sd) UCL	1.61
97.5% Chebyshev(Mean, Sd) UCL	1.994	99% Chebyshev(Mean, Sd) UCL	2.748

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.38	Mean	12.41
Maximum	15.6	Median	14.65
SD	5.488	Std. Error of Mean	2.241
Coefficient of Variation	0.442	Skewness	-2.291
Mean of logged Data	2.287	SD of logged Data	0.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.93	95% Adjusted-CLT UCL (Chen-1995)	13.86
		95% Modified-t UCL (Johnson-1978)	16.58

Nonparametric Distribution Free UCLs

95% CLT UCL	16.1	95% Jackknife UCL	16.93
95% Standard Bootstrap UCL	15.7	95% Bootstrap-t UCL	15.4
95% Hall's Bootstrap UCL	14.45	95% Percentile Bootstrap UCL	14.97
95% BCA Bootstrap UCL	14.72		
90% Chebyshev(Mean, Sd) UCL	19.14	95% Chebyshev(Mean, Sd) UCL	22.18
97.5% Chebyshev(Mean, Sd) UCL	26.41	99% Chebyshev(Mean, Sd) UCL	34.71

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 22.18

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	4.18	Mean	34.83
Maximum	91.2	Median	20.75
SD	32.27	Std. Error of Mean	13.18
Coefficient of Variation	0.927	Skewness	1.31
Mean of logged Data	3.144	SD of logged Data	1.065

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	61.38	95% Adjusted-CLT UCL (Chen-1995)	64.03
		95% Modified-t UCL (Johnson-1978)	62.55

Nonparametric Distribution Free UCLs

95% CLT UCL	56.5	95% Jackknife UCL	61.38
95% Standard Bootstrap UCL	54.53	95% Bootstrap-t UCL	116.8
95% Hall's Bootstrap UCL	246.3	95% Percentile Bootstrap UCL	55.35
95% BCA Bootstrap UCL	61.5		
90% Chebyshev(Mean, Sd) UCL	74.36	95% Chebyshev(Mean, Sd) UCL	92.26
97.5% Chebyshev(Mean, Sd) UCL	117.1	99% Chebyshev(Mean, Sd) UCL	165.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	4.04	Mean	37.64
Maximum	48.2	Median	43.35
SD	16.89	Std. Error of Mean	6.896
Coefficient of Variation	0.449	Skewness	-2.182
Mean of logged Data	3.39	SD of logged Data	0.981

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.54	95% Adjusted-CLT UCL (Chen-1995)	42.42
		95% Modified-t UCL (Johnson-1978)	50.51

Nonparametric Distribution Free UCLs

95% CLT UCL	48.98	95% Jackknife UCL	51.54
95% Standard Bootstrap UCL	47.9	95% Bootstrap-t UCL	46.92
95% Hall's Bootstrap UCL	44.29	95% Percentile Bootstrap UCL	46.12
95% BCA Bootstrap UCL	45		
90% Chebyshev(Mean, Sd) UCL	58.33	95% Chebyshev(Mean, Sd) UCL	67.7
97.5% Chebyshev(Mean, Sd) UCL	80.71	99% Chebyshev(Mean, Sd) UCL	106.3

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	67.7

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:24:25 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32437016) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.01	Mean	4.98
Maximum	6.87	Median	4.93
SD	1.81	Std. Error of Mean	0.739
Coefficient of Variation	0.363	Skewness	0.0101
Mean of logged Data	1.547	SD of logged Data	0.38

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.469	95% Adjusted-CLT UCL (Chen-1995)	6.199
		95% Modified-t UCL (Johnson-1978)	6.469

Nonparametric Distribution Free UCLs

95% CLT UCL	6.195	95% Jackknife UCL	6.469
95% Standard Bootstrap UCL	6.065	95% Bootstrap-t UCL	6.373
95% Hall's Bootstrap UCL	5.667	95% Percentile Bootstrap UCL	6.108
95% BCA Bootstrap UCL	6.095		
90% Chebyshev(Mean, Sd) UCL	7.197	95% Chebyshev(Mean, Sd) UCL	8.201
97.5% Chebyshev(Mean, Sd) UCL	9.594	99% Chebyshev(Mean, Sd) UCL	12.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	3.82	Mean	6.487
Maximum	9.29	Median	6.3
SD	2.647	Std. Error of Mean	1.081
Coefficient of Variation	0.408	Skewness	0.0397
Mean of logged Data	1.795	SD of logged Data	0.428

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.664	95% Adjusted-CLT UCL (Chen-1995)	8.283
		95% Modified-t UCL (Johnson-1978)	8.667

Nonparametric Distribution Free UCLs

95% CLT UCL	8.264	95% Jackknife UCL	8.664
95% Standard Bootstrap UCL	8.055	95% Bootstrap-t UCL	8.618
95% Hall's Bootstrap UCL	7.407	95% Percentile Bootstrap UCL	8.137
95% BCA Bootstrap UCL	8.128		
90% Chebyshev(Mean, Sd) UCL	9.729	95% Chebyshev(Mean, Sd) UCL	11.2
97.5% Chebyshev(Mean, Sd) UCL	13.24	99% Chebyshev(Mean, Sd) UCL	17.24

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.07	Mean	8.678
Maximum	12.6	Median	8.3
SD	3.423	Std. Error of Mean	1.397
Coefficient of Variation	0.394	Skewness	0.105
Mean of logged Data	2.092	SD of logged Data	0.411

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	11.49	95% Adjusted-CLT UCL (Chen-1995)	11.04
		95% Modified-t UCL (Johnson-1978)	11.5

Nonparametric Distribution Free UCLs

95% CLT UCL	10.98	95% Jackknife UCL	11.49
95% Standard Bootstrap UCL	10.77	95% Bootstrap-t UCL	11.29
95% Hall's Bootstrap UCL	10	95% Percentile Bootstrap UCL	10.83
95% BCA Bootstrap UCL	10.71		
90% Chebyshev(Mean, Sd) UCL	12.87	95% Chebyshev(Mean, Sd) UCL	14.77
97.5% Chebyshev(Mean, Sd) UCL	17.41	99% Chebyshev(Mean, Sd) UCL	22.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.8	Mean	5.045
Maximum	7.16	Median	5.06
SD	2.051	Std. Error of Mean	0.837
Coefficient of Variation	0.407	Skewness	-0.0224
Mean of logged Data	1.543	SD of logged Data	0.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.732	95% Adjusted-CLT UCL (Chen-1995)	6.414
		95% Modified-t UCL (Johnson-1978)	6.731

Nonparametric Distribution Free UCLs

95% CLT UCL	6.422	95% Jackknife UCL	6.732
95% Standard Bootstrap UCL	6.338	95% Bootstrap-t UCL	6.799
95% Hall's Bootstrap UCL	5.774	95% Percentile Bootstrap UCL	6.308
95% BCA Bootstrap UCL	6.288		
90% Chebyshev(Mean, Sd) UCL	7.557	95% Chebyshev(Mean, Sd) UCL	8.695
97.5% Chebyshev(Mean, Sd) UCL	10.27	99% Chebyshev(Mean, Sd) UCL	13.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.05	Mean	3.325
Maximum	4.52	Median	3.36
SD	1.198	Std. Error of Mean	0.489
Coefficient of Variation	0.36	Skewness	-0.0223
Mean of logged Data	1.144	SD of logged Data	0.377

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.311	95% Adjusted-CLT UCL (Chen-1995)	4.125
		95% Modified-t UCL (Johnson-1978)	4.31

Nonparametric Distribution Free UCLs

95% CLT UCL	4.13	95% Jackknife UCL	4.311
95% Standard Bootstrap UCL	4.068	95% Bootstrap-t UCL	4.325
95% Hall's Bootstrap UCL	3.735	95% Percentile Bootstrap UCL	4.067
95% BCA Bootstrap UCL	4.055		
90% Chebyshev(Mean, Sd) UCL	4.793	95% Chebyshev(Mean, Sd) UCL	5.457
97.5% Chebyshev(Mean, Sd) UCL	6.38	99% Chebyshev(Mean, Sd) UCL	8.192

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	4.83	Mean	7.632
Maximum	11	Median	7.19
SD	2.876	Std. Error of Mean	1.174
Coefficient of Variation	0.377	Skewness	0.198
Mean of logged Data	1.971	SD of logged Data	0.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.997	95% Adjusted-CLT UCL (Chen-1995)	9.664
		95% Modified-t UCL (Johnson-1978)	10.01

Nonparametric Distribution Free UCLs

95% CLT UCL	9.563	95% Jackknife UCL	9.997
95% Standard Bootstrap UCL	9.434	95% Bootstrap-t UCL	9.745
95% Hall's Bootstrap UCL	8.766	95% Percentile Bootstrap UCL	9.473
95% BCA Bootstrap UCL	9.515		
90% Chebyshev(Mean, Sd) UCL	11.15	95% Chebyshev(Mean, Sd) UCL	12.75
97.5% Chebyshev(Mean, Sd) UCL	14.96	99% Chebyshev(Mean, Sd) UCL	19.31

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	5.89	Mean	8.788
Maximum	12.2	Median	8.195
SD	3.046	Std. Error of Mean	1.244
Coefficient of Variation	0.347	Skewness	0.239
Mean of logged Data	2.122	SD of logged Data	0.351

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.29	95% Adjusted-CLT UCL (Chen-1995)	10.96
		95% Modified-t UCL (Johnson-1978)	11.31

Nonparametric Distribution Free UCLs

95% CLT UCL	10.83	95% Jackknife UCL	11.29
95% Standard Bootstrap UCL	10.63	95% Bootstrap-t UCL	10.93
95% Hall's Bootstrap UCL	9.943	95% Percentile Bootstrap UCL	10.78
95% BCA Bootstrap UCL	10.5		
90% Chebyshev(Mean, Sd) UCL	12.52	95% Chebyshev(Mean, Sd) UCL	14.21
97.5% Chebyshev(Mean, Sd) UCL	16.55	99% Chebyshev(Mean, Sd) UCL	21.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.93	Mean	5.462
Maximum	7.68	Median	5.655
SD	2.236	Std. Error of Mean	0.913
Coefficient of Variation	0.409	Skewness	-0.0796
Mean of logged Data	1.621	SD of logged Data	0.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.301	95% Adjusted-CLT UCL (Chen-1995)	6.931
		95% Modified-t UCL (Johnson-1978)	7.296

Nonparametric Distribution Free UCLs

95% CLT UCL	6.963	95% Jackknife UCL	7.301
95% Standard Bootstrap UCL	6.834	95% Bootstrap-t UCL	7.313
95% Hall's Bootstrap UCL	6.294	95% Percentile Bootstrap UCL	6.843
95% BCA Bootstrap UCL	6.808		
90% Chebyshev(Mean, Sd) UCL	8.2	95% Chebyshev(Mean, Sd) UCL	9.44
97.5% Chebyshev(Mean, Sd) UCL	11.16	99% Chebyshev(Mean, Sd) UCL	14.54

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.61	Mean	3.927
Maximum	5.47	Median	3.74
SD	1.375	Std. Error of Mean	0.561
Coefficient of Variation	0.35	Skewness	0.163
Mean of logged Data	1.315	SD of logged Data	0.358

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.058	95% Adjusted-CLT UCL (Chen-1995)	4.89
		95% Modified-t UCL (Johnson-1978)	5.064

Nonparametric Distribution Free UCLs

95% CLT UCL	4.85	95% Jackknife UCL	5.058
95% Standard Bootstrap UCL	4.772	95% Bootstrap-t UCL	4.922
95% Hall's Bootstrap UCL	4.461	95% Percentile Bootstrap UCL	4.802
95% BCA Bootstrap UCL	4.787		
90% Chebyshev(Mean, Sd) UCL	5.61	95% Chebyshev(Mean, Sd) UCL	6.373
97.5% Chebyshev(Mean, Sd) UCL	7.432	99% Chebyshev(Mean, Sd) UCL	9.511

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.49	Mean	8.683

Maximum	12.4	Median	8.1
SD	3.2	Std. Error of Mean	1.306
Coefficient of Variation	0.369	Skewness	0.224
Mean of logged Data	2.103	SD of logged Data	0.376

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.32	95% Adjusted-CLT UCL (Chen-1995)	10.96
		95% Modified-t UCL (Johnson-1978)	11.34

Nonparametric Distribution Free UCLs

95% CLT UCL	10.83	95% Jackknife UCL	11.32
95% Standard Bootstrap UCL	10.64	95% Bootstrap-t UCL	12.59
95% Hall's Bootstrap UCL	9.939	95% Percentile Bootstrap UCL	10.77
95% BCA Bootstrap UCL	10.8		
90% Chebyshev(Mean, Sd) UCL	12.6	95% Chebyshev(Mean, Sd) UCL	14.38
97.5% Chebyshev(Mean, Sd) UCL	16.84	99% Chebyshev(Mean, Sd) UCL	21.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.2	Mean	17.73
Maximum	22.3	Median	17.05
SD	2.9	Std. Error of Mean	1.184
Coefficient of Variation	0.164	Skewness	0.733
Mean of logged Data	2.865	SD of logged Data	0.159

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.12	95% Adjusted-CLT UCL (Chen-1995)	20.06

		95% Modified-t UCL (Johnson-1978)	20.18

Nonparametric Distribution Free UCLs

95% CLT UCL	19.68	95% Jackknife UCL	20.12
95% Standard Bootstrap UCL	19.5	95% Bootstrap-t UCL	20.66
95% Hall's Bootstrap UCL	19.72	95% Percentile Bootstrap UCL	19.58
95% BCA Bootstrap UCL	19.67		
90% Chebyshev(Mean, Sd) UCL	21.29	95% Chebyshev(Mean, Sd) UCL	22.89
97.5% Chebyshev(Mean, Sd) UCL	25.13	99% Chebyshev(Mean, Sd) UCL	29.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	10.6	Mean	11.57
Maximum	12.7	Median	11.4
SD	0.792	Std. Error of Mean	0.323
Coefficient of Variation	0.0684	Skewness	0.457
Mean of logged Data	2.446	SD of logged Data	0.0679

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.22	95% Adjusted-CLT UCL (Chen-1995)	12.16
		95% Modified-t UCL (Johnson-1978)	12.23

Nonparametric Distribution Free UCLs

95% CLT UCL	12.1	95% Jackknife UCL	12.22
95% Standard Bootstrap UCL	12.05	95% Bootstrap-t UCL	12.62
95% Hall's Bootstrap UCL	13.4	95% Percentile Bootstrap UCL	12.07
95% BCA Bootstrap UCL	12.07		
90% Chebyshev(Mean, Sd) UCL	12.54	95% Chebyshev(Mean, Sd) UCL	12.98
97.5% Chebyshev(Mean, Sd) UCL	13.58	99% Chebyshev(Mean, Sd) UCL	14.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	45.7	Mean	48.65
Maximum	52	Median	48.1
SD	2.298	Std. Error of Mean	0.938
Coefficient of Variation	0.0472	Skewness	0.401
Mean of logged Data	3.884	SD of logged Data	0.047

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	50.54	95% Adjusted-CLT UCL (Chen-1995)	50.36
		95% Modified-t UCL (Johnson-1978)	50.57

Nonparametric Distribution Free UCLs

95% CLT UCL	50.19	95% Jackknife UCL	50.54
95% Standard Bootstrap UCL	50.05	95% Bootstrap-t UCL	51.71
95% Hall's Bootstrap UCL	53.05	95% Percentile Bootstrap UCL	50.07
95% BCA Bootstrap UCL	50.2		
90% Chebyshev(Mean, Sd) UCL	51.46	95% Chebyshev(Mean, Sd) UCL	52.74
97.5% Chebyshev(Mean, Sd) UCL	54.51	99% Chebyshev(Mean, Sd) UCL	57.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.16/12/2020 9:28:04 AM
From File	Table 1. Parcel Analytical Results APN32439031-HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Copper

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	14.93
Maximum	16.1	Median	14.95
SD	0.927	Std. Error of Mean	0.378
Coefficient of Variation	0.0621	Skewness	-0.426
Mean of logged Data	2.702	SD of logged Data	0.0628

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.7	95% Adjusted-CLT UCL (Chen-1995)	15.49
		95% Modified-t UCL (Johnson-1978)	15.68

Nonparametric Distribution Free UCLs

95% CLT UCL	15.56	95% Jackknife UCL	15.7
95% Standard Bootstrap UCL	15.51	95% Bootstrap-t UCL	15.63
95% Hall's Bootstrap UCL	15.48	95% Percentile Bootstrap UCL	15.47
95% BCA Bootstrap UCL	15.43		
90% Chebyshev(Mean, Sd) UCL	16.07	95% Chebyshev(Mean, Sd) UCL	16.58
97.5% Chebyshev(Mean, Sd) UCL	17.3	99% Chebyshev(Mean, Sd) UCL	18.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Lead

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	13.5	Mean	19.13
Maximum	42.4	Median	14.65
SD	11.42	Std. Error of Mean	4.66
Coefficient of Variation	0.597	Skewness	2.433
Mean of logged Data	2.851	SD of logged Data	0.441

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.52	95% Adjusted-CLT UCL (Chen-1995)	31.74
		95% Modified-t UCL (Johnson-1978)	29.3

Nonparametric Distribution Free UCLs

95% CLT UCL	26.8	95% Jackknife UCL	28.52
95% Standard Bootstrap UCL	26.15	95% Bootstrap-t UCL	143.1
95% Hall's Bootstrap UCL	101.5	95% Percentile Bootstrap UCL	28.32
95% BCA Bootstrap UCL	28.67		
90% Chebyshev(Mean, Sd) UCL	33.11	95% Chebyshev(Mean, Sd) UCL	39.45
97.5% Chebyshev(Mean, Sd) UCL	48.24	99% Chebyshev(Mean, Sd) UCL	65.5

Suggested UCL to Use

95% Student's-t UCL	28.52	or 95% Modified-t UCL	29.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.3	Mean	48.13
Maximum	51.4	Median	47.95
SD	2.42	Std. Error of Mean	0.988
Coefficient of Variation	0.0503	Skewness	-0.351
Mean of logged Data	3.873	SD of logged Data	0.0507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.12	95% Adjusted-CLT UCL (Chen-1995)	49.61
		95% Modified-t UCL (Johnson-1978)	50.1

Nonparametric Distribution Free UCLs

95% CLT UCL	49.76	95% Jackknife UCL	50.12
95% Standard Bootstrap UCL	49.64	95% Bootstrap-t UCL	50.2
95% Hall's Bootstrap UCL	50.46	95% Percentile Bootstrap UCL	49.62
95% BCA Bootstrap UCL	49.43		
90% Chebyshev(Mean, Sd) UCL	51.1	95% Chebyshev(Mean, Sd) UCL	52.44
97.5% Chebyshev(Mean, Sd) UCL	54.3	99% Chebyshev(Mean, Sd) UCL	57.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

2-Methylnaphthalene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.4	Mean	39.17
Maximum	74.1	Median	33.85
SD	22.7	Std. Error of Mean	9.267
Coefficient of Variation	0.58	Skewness	0.637
Mean of logged Data	3.518	SD of logged Data	0.614

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	57.84	95% Adjusted-CLT UCL (Chen-1995)	56.98
		95% Modified-t UCL (Johnson-1978)	58.24

Nonparametric Distribution Free UCLs

95% CLT UCL	54.41	95% Jackknife UCL	57.84
95% Standard Bootstrap UCL	52.94	95% Bootstrap-t UCL	71.42
95% Hall's Bootstrap UCL	57.11	95% Percentile Bootstrap UCL	54.25
95% BCA Bootstrap UCL	54.43		
90% Chebyshev(Mean, Sd) UCL	66.97	95% Chebyshev(Mean, Sd) UCL	79.56

97.5% Chebyshev(Mean, Sd) UCL	97.04	99% Chebyshev(Mean, Sd) UCL	131.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Acenaphthene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.8	Mean	115.2
Maximum	216	Median	105.1
SD	71.09	Std. Error of Mean	29.02
Coefficient of Variation	0.617	Skewness	0.384
Mean of logged Data	4.567	SD of logged Data	0.675

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	173.7	95% Adjusted-CLT UCL (Chen-1995)	167.8
		95% Modified-t UCL (Johnson-1978)	174.4

Nonparametric Distribution Free UCLs

95% CLT UCL	162.9	95% Jackknife UCL	173.7
95% Standard Bootstrap UCL	159	95% Bootstrap-t UCL	180.7
95% Hall's Bootstrap UCL	147.5	95% Percentile Bootstrap UCL	159.2
95% BCA Bootstrap UCL	162.7		
90% Chebyshev(Mean, Sd) UCL	202.3	95% Chebyshev(Mean, Sd) UCL	241.7
97.5% Chebyshev(Mean, Sd) UCL	296.4	99% Chebyshev(Mean, Sd) UCL	404

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Anthracene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	128	Mean	317.2
Maximum	595	Median	259.5
SD	212.8	Std. Error of Mean	86.89
Coefficient of Variation	0.671	Skewness	0.41
Mean of logged Data	5.548	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	492.3	95% Adjusted-CLT UCL (Chen-1995)	475.6
		95% Modified-t UCL (Johnson-1978)	494.7

Nonparametric Distribution Free UCLs

95% CLT UCL	460.1	95% Jackknife UCL	492.3
95% Standard Bootstrap UCL	448.4	95% Bootstrap-t UCL	497.2
95% Hall's Bootstrap UCL	435	95% Percentile Bootstrap UCL	446
95% BCA Bootstrap UCL	459		
90% Chebyshev(Mean, Sd) UCL	577.8	95% Chebyshev(Mean, Sd) UCL	695.9
97.5% Chebyshev(Mean, Sd) UCL	859.8	99% Chebyshev(Mean, Sd) UCL	1182

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(a)anthracene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	730	Mean	1816
Maximum	3150	Median	1612
SD	1118	Std. Error of Mean	456.4
Coefficient of Variation	0.616	Skewness	0.218
Mean of logged Data	7.323	SD of logged Data	0.677

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2736	95% Adjusted-CLT UCL (Chen-1995)	2610
		95% Modified-t UCL (Johnson-1978)	2743

Nonparametric Distribution Free UCLs

95% CLT UCL	2567	95% Jackknife UCL	2736
95% Standard Bootstrap UCL	2523	95% Bootstrap-t UCL	3154
95% Hall's Bootstrap UCL	2240	95% Percentile Bootstrap UCL	2526
95% BCA Bootstrap UCL	2467		
90% Chebyshev(Mean, Sd) UCL	3185	95% Chebyshev(Mean, Sd) UCL	3806
97.5% Chebyshev(Mean, Sd) UCL	4666	99% Chebyshev(Mean, Sd) UCL	6357

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(a)pyrene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	969	Mean	2358
Maximum	4100	Median	2015
SD	1513	Std. Error of Mean	617.8
Coefficient of Variation	0.642	Skewness	0.251
Mean of logged Data	7.568	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3603	95% Adjusted-CLT UCL (Chen-1995)	3442
		95% Modified-t UCL (Johnson-1978)	3614

Nonparametric Distribution Free UCLs

95% CLT UCL	3374	95% Jackknife UCL	3603
95% Standard Bootstrap UCL	3269	95% Bootstrap-t UCL	3414
95% Hall's Bootstrap UCL	2907	95% Percentile Bootstrap UCL	3358
95% BCA Bootstrap UCL	3360		
90% Chebyshev(Mean, Sd) UCL	4212	95% Chebyshev(Mean, Sd) UCL	5051
97.5% Chebyshev(Mean, Sd) UCL	6217	99% Chebyshev(Mean, Sd) UCL	8506

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(b)fluoranthene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1210	Mean	3035
Maximum	5560	Median	2460
SD	2035	Std. Error of Mean	830.8
Coefficient of Variation	0.671	Skewness	0.372
Mean of logged Data	7.805	SD of logged Data	0.73

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4709	95% Adjusted-CLT UCL (Chen-1995)	4536
		95% Modified-t UCL (Johnson-1978)	4730

Nonparametric Distribution Free UCLs

95% CLT UCL	4402	95% Jackknife UCL	4709
95% Standard Bootstrap UCL	4321	95% Bootstrap-t UCL	4712
95% Hall's Bootstrap UCL	4083	95% Percentile Bootstrap UCL	4357
95% BCA Bootstrap UCL	4142		
90% Chebyshev(Mean, Sd) UCL	5527	95% Chebyshev(Mean, Sd) UCL	6656
97.5% Chebyshev(Mean, Sd) UCL	8223	99% Chebyshev(Mean, Sd) UCL	11301

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(g,h,i)perylene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	639	Mean	1594
Maximum	2950	Median	1294
SD	1082	Std. Error of Mean	441.7
Coefficient of Variation	0.679	Skewness	0.375

Mean of logged Data	7.155	SD of logged Data	0.741

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2484	95% Adjusted-CLT UCL (Chen-1995)	2393
		95% Modified-t UCL (Johnson-1978)	2495

Nonparametric Distribution Free UCLs

95% CLT UCL	2320	95% Jackknife UCL	2484
95% Standard Bootstrap UCL	2246	95% Bootstrap-t UCL	2487
95% Hall's Bootstrap UCL	1998	95% Percentile Bootstrap UCL	2283
95% BCA Bootstrap UCL	2350		
90% Chebyshev(Mean, Sd) UCL	2919	95% Chebyshev(Mean, Sd) UCL	3519
97.5% Chebyshev(Mean, Sd) UCL	4352	99% Chebyshev(Mean, Sd) UCL	5989

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(k)fluoranthene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	521	Mean	1248
Maximum	2180	Median	1098
SD	779.5	Std. Error of Mean	318.2
Coefficient of Variation	0.624	Skewness	0.227
Mean of logged Data	6.943	SD of logged Data	0.686

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1889	95% Adjusted-CLT UCL (Chen-1995)	1803
		95% Modified-t UCL (Johnson-1978)	1894

Nonparametric Distribution Free UCLs

95% CLT UCL	1772	95% Jackknife UCL	1889
95% Standard Bootstrap UCL	1732	95% Bootstrap-t UCL	1828
95% Hall's Bootstrap UCL	1532	95% Percentile Bootstrap UCL	1749
95% BCA Bootstrap UCL	1735		
90% Chebyshev(Mean, Sd) UCL	2203	95% Chebyshev(Mean, Sd) UCL	2635
97.5% Chebyshev(Mean, Sd) UCL	3235	99% Chebyshev(Mean, Sd) UCL	4414

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Chrysene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1120	Mean	2578
Maximum	4380	Median	2335
SD	1538	Std. Error of Mean	628
Coefficient of Variation	0.597	Skewness	0.166
Mean of logged Data	7.685	SD of logged Data	0.654

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3844	95% Adjusted-CLT UCL (Chen-1995)	3657
		95% Modified-t UCL (Johnson-1978)	3851

Nonparametric Distribution Free UCLs

95% CLT UCL	3611	95% Jackknife UCL	3844
95% Standard Bootstrap UCL	3526	95% Bootstrap-t UCL	3753
95% Hall's Bootstrap UCL	3128	95% Percentile Bootstrap UCL	3573
95% BCA Bootstrap UCL	3532		
90% Chebyshev(Mean, Sd) UCL	4462	95% Chebyshev(Mean, Sd) UCL	5316
97.5% Chebyshev(Mean, Sd) UCL	6500	99% Chebyshev(Mean, Sd) UCL	8827

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Dibenz(a,h)anthracene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	180	Mean	387.7
Maximum	658	Median	337.5
SD	222.5	Std. Error of Mean	90.84
Coefficient of Variation	0.574	Skewness	0.306
Mean of logged Data	5.809	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	570.7	95% Adjusted-CLT UCL (Chen-1995)	549.2
		95% Modified-t UCL (Johnson-1978)	572.6

Nonparametric Distribution Free UCLs

95% CLT UCL	537.1	95% Jackknife UCL	570.7
95% Standard Bootstrap UCL	524.6	95% Bootstrap-t UCL	560.4
95% Hall's Bootstrap UCL	486.5	95% Percentile Bootstrap UCL	534.2
95% BCA Bootstrap UCL	528.7		
90% Chebyshev(Mean, Sd) UCL	660.2	95% Chebyshev(Mean, Sd) UCL	783.6
97.5% Chebyshev(Mean, Sd) UCL	955	99% Chebyshev(Mean, Sd) UCL	1292

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Fluoranthene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1350	Mean	3207
Maximum	5610	Median	2705
SD	2003	Std. Error of Mean	817.5
Coefficient of Variation	0.625	Skewness	0.322
Mean of logged Data	7.891	SD of logged Data	0.674

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4854	95% Adjusted-CLT UCL (Chen-1995)	4666
		95% Modified-t UCL (Johnson-1978)	4872

Nonparametric Distribution Free UCLs

95% CLT UCL	4551	95% Jackknife UCL	4854
95% Standard Bootstrap UCL	4410	95% Bootstrap-t UCL	4777
95% Hall's Bootstrap UCL	3964	95% Percentile Bootstrap UCL	4532
95% BCA Bootstrap UCL	4347		
90% Chebyshev(Mean, Sd) UCL	5659	95% Chebyshev(Mean, Sd) UCL	6770
97.5% Chebyshev(Mean, Sd) UCL	8312	99% Chebyshev(Mean, Sd) UCL	11341

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Fluorene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	14.6	Mean	53.32
Maximum	88.6	Median	56.1
SD	35.7	Std. Error of Mean	14.58
Coefficient of Variation	0.67	Skewness	-0.0563
Mean of logged Data	3.728	SD of logged Data	0.82

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	82.69	95% Adjusted-CLT UCL (Chen-1995)	76.93
		95% Modified-t UCL (Johnson-1978)	82.63

Nonparametric Distribution Free UCLs

95% CLT UCL	77.29	95% Jackknife UCL	82.69
95% Standard Bootstrap UCL	75.02	95% Bootstrap-t UCL	82.87
95% Hall's Bootstrap UCL	66.01	95% Percentile Bootstrap UCL	75.12
95% BCA Bootstrap UCL	75.25		
90% Chebyshev(Mean, Sd) UCL	97.04	95% Chebyshev(Mean, Sd) UCL	116.8

97.5% Chebyshev(Mean, Sd) UCL	144.3	99% Chebyshev(Mean, Sd) UCL	198.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Indeno(1,2,3-c,d)pyrene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	652	Mean	1670
Maximum	2980	Median	1422
SD	1091	Std. Error of Mean	445.3
Coefficient of Variation	0.653	Skewness	0.268
Mean of logged Data	7.214	SD of logged Data	0.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2567	95% Adjusted-CLT UCL (Chen-1995)	2454
		95% Modified-t UCL (Johnson-1978)	2575

Nonparametric Distribution Free UCLs

95% CLT UCL	2402	95% Jackknife UCL	2567
95% Standard Bootstrap UCL	2338	95% Bootstrap-t UCL	3061
95% Hall's Bootstrap UCL	2070	95% Percentile Bootstrap UCL	2387
95% BCA Bootstrap UCL	2312		
90% Chebyshev(Mean, Sd) UCL	3005	95% Chebyshev(Mean, Sd) UCL	3611
97.5% Chebyshev(Mean, Sd) UCL	4450	99% Chebyshev(Mean, Sd) UCL	6100

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Naphthalene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	41.3	Mean	135.2
Maximum	262	Median	117
SD	82.76	Std. Error of Mean	33.79
Coefficient of Variation	0.612	Skewness	0.598
Mean of logged Data	4.73	SD of logged Data	0.678

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	203.3	95% Adjusted-CLT UCL (Chen-1995)	199.6
		95% Modified-t UCL (Johnson-1978)	204.6

Nonparametric Distribution Free UCLs

95% CLT UCL	190.7	95% Jackknife UCL	203.3
95% Standard Bootstrap UCL	185.5	95% Bootstrap-t UCL	247.7
95% Hall's Bootstrap UCL	215.3	95% Percentile Bootstrap UCL	184.7
95% BCA Bootstrap UCL	191		
90% Chebyshev(Mean, Sd) UCL	236.5	95% Chebyshev(Mean, Sd) UCL	282.4
97.5% Chebyshev(Mean, Sd) UCL	346.2	99% Chebyshev(Mean, Sd) UCL	471.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Phenanthrene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	574	Mean	1493
Maximum	2780	Median	1170
SD	1024	Std. Error of Mean	418.1
Coefficient of Variation	0.686	Skewness	0.458
Mean of logged Data	7.089	SD of logged Data	0.739

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2335	95% Adjusted-CLT UCL (Chen-1995)	2264
		95% Modified-t UCL (Johnson-1978)	2348

Nonparametric Distribution Free UCLs

95% CLT UCL	2180	95% Jackknife UCL	2335
95% Standard Bootstrap UCL	2110	95% Bootstrap-t UCL	2488
95% Hall's Bootstrap UCL	2268	95% Percentile Bootstrap UCL	2058
95% BCA Bootstrap UCL	2162		
90% Chebyshev(Mean, Sd) UCL	2747	95% Chebyshev(Mean, Sd) UCL	3315
97.5% Chebyshev(Mean, Sd) UCL	4104	99% Chebyshev(Mean, Sd) UCL	5653

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Pyrene

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1430	Mean	3260
Maximum	5320	Median	2965
SD	1911	Std. Error of Mean	780
Coefficient of Variation	0.586	Skewness	0.147
Mean of logged Data	7.926	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4832	95% Adjusted-CLT UCL (Chen-1995)	4593
		95% Modified-t UCL (Johnson-1978)	4840

Nonparametric Distribution Free UCLs

95% CLT UCL	4543	95% Jackknife UCL	4832
95% Standard Bootstrap UCL	4409	95% Bootstrap-t UCL	4647
95% Hall's Bootstrap UCL	3944	95% Percentile Bootstrap UCL	4358
95% BCA Bootstrap UCL	4495		
90% Chebyshev(Mean, Sd) UCL	5600	95% Chebyshev(Mean, Sd) UCL	6660
97.5% Chebyshev(Mean, Sd) UCL	8131	99% Chebyshev(Mean, Sd) UCL	11021

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:55:24 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32439036) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	2.16	Mean	4.352
Maximum	7.94	Median	3.5
SD	2.414	Std. Error of Mean	0.986
Coefficient of Variation	0.555	Skewness	0.783
Mean of logged Data	1.345	SD of logged Data	0.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.338	95% Adjusted-CLT UCL (Chen-1995)	6.309
		95% Modified-t UCL (Johnson-1978)	6.39

Nonparametric Distribution Free UCLs

95% CLT UCL	5.973	95% Jackknife UCL	6.338
95% Standard Bootstrap UCL	5.837	95% Bootstrap-t UCL	8.029
95% Hall's Bootstrap UCL	7.514	95% Percentile Bootstrap UCL	5.91
95% BCA Bootstrap UCL	6.013		
90% Chebyshev(Mean, Sd) UCL	7.309	95% Chebyshev(Mean, Sd) UCL	8.648
97.5% Chebyshev(Mean, Sd) UCL	10.51	99% Chebyshev(Mean, Sd) UCL	14.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	3.11	Mean	12.5
Maximum	26	Median	10.35
SD	9.314	Std. Error of Mean	3.802
Coefficient of Variation	0.745	Skewness	0.574
Mean of logged Data	2.248	SD of logged Data	0.857

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.16	95% Adjusted-CLT UCL (Chen-1995)	19.71
		95% Modified-t UCL (Johnson-1978)	20.31

Nonparametric Distribution Free UCLs

95% CLT UCL	18.76	95% Jackknife UCL	20.16
95% Standard Bootstrap UCL	18.17	95% Bootstrap-t UCL	22.54
95% Hall's Bootstrap UCL	20.72	95% Percentile Bootstrap UCL	18.35
95% BCA Bootstrap UCL	19.08		
90% Chebyshev(Mean, Sd) UCL	23.91	95% Chebyshev(Mean, Sd) UCL	29.08
97.5% Chebyshev(Mean, Sd) UCL	36.25	99% Chebyshev(Mean, Sd) UCL	50.33

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.57	Mean	45.43
Maximum	159	Median	27.25
SD	56.71	Std. Error of Mean	23.15
Coefficient of Variation	1.248	Skewness	2.246
Mean of logged Data	3.331	SD of logged Data	1.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	92.08	95% Adjusted-CLT UCL (Chen-1995)	106.2
		95% Modified-t UCL (Johnson-1978)	95.62

Nonparametric Distribution Free UCLs

95% CLT UCL	83.51	95% Jackknife UCL	92.08
95% Standard Bootstrap UCL	80.41	95% Bootstrap-t UCL	212.6
95% Hall's Bootstrap UCL	268.3	95% Percentile Bootstrap UCL	84.8
95% BCA Bootstrap UCL	94.98		
90% Chebyshev(Mean, Sd) UCL	114.9	95% Chebyshev(Mean, Sd) UCL	146.4
97.5% Chebyshev(Mean, Sd) UCL	190	99% Chebyshev(Mean, Sd) UCL	275.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	81.7	Mean	273.3
Maximum	738	Median	203
SD	243.1	Std. Error of Mean	99.25
Coefficient of Variation	0.889	Skewness	1.821
Mean of logged Data	5.328	SD of logged Data	0.804

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	473.3	95% Adjusted-CLT UCL (Chen-1995)	515.4
		95% Modified-t UCL (Johnson-1978)	485.6

Nonparametric Distribution Free UCLs

95% CLT UCL	436.6	95% Jackknife UCL	473.3
95% Standard Bootstrap UCL	420.1	95% Bootstrap-t UCL	770.1
95% Hall's Bootstrap UCL	1235	95% Percentile Bootstrap UCL	450.3
95% BCA Bootstrap UCL	471.7		
90% Chebyshev(Mean, Sd) UCL	571.1	95% Chebyshev(Mean, Sd) UCL	706
97.5% Chebyshev(Mean, Sd) UCL	893.2	99% Chebyshev(Mean, Sd) UCL	1261

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	82.6	Mean	307.4
Maximum	820	Median	200.5
SD	279.7	Std. Error of Mean	114.2
Coefficient of Variation	0.91	Skewness	1.574
Mean of logged Data	5.414	SD of logged Data	0.855

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	537.5	95% Adjusted-CLT UCL (Chen-1995)	573.7
		95% Modified-t UCL (Johnson-1978)	549.8

Nonparametric Distribution Free UCLs

95% CLT UCL	495.3	95% Jackknife UCL	537.5
95% Standard Bootstrap UCL	477.2	95% Bootstrap-t UCL	1062
95% Hall's Bootstrap UCL	1589	95% Percentile Bootstrap UCL	507
95% BCA Bootstrap UCL	530.3		
90% Chebyshev(Mean, Sd) UCL	650	95% Chebyshev(Mean, Sd) UCL	805.2
97.5% Chebyshev(Mean, Sd) UCL	1021	99% Chebyshev(Mean, Sd) UCL	1444

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	114	Mean	392.7
Maximum	1050	Median	266
SD	351.8	Std. Error of Mean	143.6
Coefficient of Variation	0.896	Skewness	1.685
Mean of logged Data	5.679	SD of logged Data	0.82

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	682.1	95% Adjusted-CLT UCL (Chen-1995)	734.5
		95% Modified-t UCL (Johnson-1978)	698.6

Nonparametric Distribution Free UCLs

95% CLT UCL	628.9	95% Jackknife UCL	682.1
95% Standard Bootstrap UCL	611.7	95% Bootstrap-t UCL	1297
95% Hall's Bootstrap UCL	1946	95% Percentile Bootstrap UCL	648.5
95% BCA Bootstrap UCL	699.5		
90% Chebyshev(Mean, Sd) UCL	823.6	95% Chebyshev(Mean, Sd) UCL	1019
97.5% Chebyshev(Mean, Sd) UCL	1290	99% Chebyshev(Mean, Sd) UCL	1822

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	54.4	Mean	204.7
Maximum	568	Median	122.5
SD	195.2	Std. Error of Mean	79.68
Coefficient of Variation	0.954	Skewness	1.689
Mean of logged Data	4.991	SD of logged Data	0.863

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	365.2	95% Adjusted-CLT UCL (Chen-1995)	394.4
		95% Modified-t UCL (Johnson-1978)	374.4

Nonparametric Distribution Free UCLs

95% CLT UCL	335.7	95% Jackknife UCL	365.2

95% Standard Bootstrap UCL	322	95% Bootstrap-t UCL	885.9
95% Hall's Bootstrap UCL	1132	95% Percentile Bootstrap UCL	331.3
95% BCA Bootstrap UCL	387.4		
90% Chebyshev(Mean, Sd) UCL	443.7	95% Chebyshev(Mean, Sd) UCL	552
97.5% Chebyshev(Mean, Sd) UCL	702.3	99% Chebyshev(Mean, Sd) UCL	997.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.1	Mean	157
Maximum	408	Median	108
SD	136.9	Std. Error of Mean	55.87
Coefficient of Variation	0.872	Skewness	1.565
Mean of logged Data	4.767	SD of logged Data	0.822

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	269.6	95% Adjusted-CLT UCL (Chen-1995)	287
		95% Modified-t UCL (Johnson-1978)	275.5

Nonparametric Distribution Free UCLs

95% CLT UCL	248.9	95% Jackknife UCL	269.6
95% Standard Bootstrap UCL	241.1	95% Bootstrap-t UCL	498.6
95% Hall's Bootstrap UCL	796.3	95% Percentile Bootstrap UCL	252.1
95% BCA Bootstrap UCL	275.8		
90% Chebyshev(Mean, Sd) UCL	324.6	95% Chebyshev(Mean, Sd) UCL	400.5
97.5% Chebyshev(Mean, Sd) UCL	505.9	99% Chebyshev(Mean, Sd) UCL	712.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	108	Mean	359.7
Maximum	870	Median	280
SD	284.5	Std. Error of Mean	116.1
Coefficient of Variation	0.791	Skewness	1.383
Mean of logged Data	5.633	SD of logged Data	0.782

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	593.7	95% Adjusted-CLT UCL (Chen-1995)	620.8
		95% Modified-t UCL (Johnson-1978)	604.6

Nonparametric Distribution Free UCLs

95% CLT UCL	550.7	95% Jackknife UCL	593.7
95% Standard Bootstrap UCL	534	95% Bootstrap-t UCL	878.7
95% Hall's Bootstrap UCL	1633	95% Percentile Bootstrap UCL	546.3
95% BCA Bootstrap UCL	580.7		
90% Chebyshev(Mean, Sd) UCL	708.1	95% Chebyshev(Mean, Sd) UCL	865.9
97.5% Chebyshev(Mean, Sd) UCL	1085	99% Chebyshev(Mean, Sd) UCL	1515

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	15.1	Mean	46.83
Maximum	103	Median	34.15
SD	34.49	Std. Error of Mean	14.08
Coefficient of Variation	0.736	Skewness	1.046
Mean of logged Data	3.621	SD of logged Data	0.737

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	75.21	95% Adjusted-CLT UCL (Chen-1995)	76.42
		95% Modified-t UCL (Johnson-1978)	76.21

Nonparametric Distribution Free UCLs

95% CLT UCL	69.99	95% Jackknife UCL	75.21
95% Standard Bootstrap UCL	68.17	95% Bootstrap-t UCL	129.5
95% Hall's Bootstrap UCL	260.5	95% Percentile Bootstrap UCL	68.45
95% BCA Bootstrap UCL	71.82		
90% Chebyshev(Mean, Sd) UCL	89.07	95% Chebyshev(Mean, Sd) UCL	108.2
97.5% Chebyshev(Mean, Sd) UCL	134.8	99% Chebyshev(Mean, Sd) UCL	186.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	116	Mean	486.2
Maximum	1590	Median	308.5
SD	555.3	Std. Error of Mean	226.7
Coefficient of Variation	1.142	Skewness	2.173
Mean of logged Data	5.772	SD of logged Data	0.944

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	943	95% Adjusted-CLT UCL (Chen-1995)	1074
		95% Modified-t UCL (Johnson-1978)	976.5

Nonparametric Distribution Free UCLs

95% CLT UCL	859	95% Jackknife UCL	943
95% Standard Bootstrap UCL	830.7	95% Bootstrap-t UCL	1984
95% Hall's Bootstrap UCL	2637	95% Percentile Bootstrap UCL	894.3
95% BCA Bootstrap UCL	974		
90% Chebyshev(Mean, Sd) UCL	1166	95% Chebyshev(Mean, Sd) UCL	1474
97.5% Chebyshev(Mean, Sd) UCL	1902	99% Chebyshev(Mean, Sd) UCL	2742

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.77	Mean	6.458
Maximum	14.9	Median	5.105
SD	5.17	Std. Error of Mean	2.111
Coefficient of Variation	0.8	Skewness	0.928
Mean of logged Data	1.567	SD of logged Data	0.874

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.71	95% Adjusted-CLT UCL (Chen-1995)	10.78
		95% Modified-t UCL (Johnson-1978)	10.84

Nonparametric Distribution Free UCLs

95% CLT UCL	9.93	95% Jackknife UCL	10.71
95% Standard Bootstrap UCL	9.6	95% Bootstrap-t UCL	13.16
95% Hall's Bootstrap UCL	15.35	95% Percentile Bootstrap UCL	9.745
95% BCA Bootstrap UCL	10.27		
90% Chebyshev(Mean, Sd) UCL	12.79	95% Chebyshev(Mean, Sd) UCL	15.66
97.5% Chebyshev(Mean, Sd) UCL	19.64	99% Chebyshev(Mean, Sd) UCL	27.46

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	54.2	Mean	214.1
Maximum	626	Median	126.5
SD	215.7	Std. Error of Mean	88.05
Coefficient of Variation	1.008	Skewness	1.859
Mean of logged Data	5.013	SD of logged Data	0.886

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	391.5	95% Adjusted-CLT UCL (Chen-1995)	430.3
		95% Modified-t UCL (Johnson-1978)	402.6

Nonparametric Distribution Free UCLs

95% CLT UCL	358.9	95% Jackknife UCL	391.5
95% Standard Bootstrap UCL	345.8	95% Bootstrap-t UCL	989.7
95% Hall's Bootstrap UCL	1237	95% Percentile Bootstrap UCL	369.7
95% BCA Bootstrap UCL	417		
90% Chebyshev(Mean, Sd) UCL	478.2	95% Chebyshev(Mean, Sd) UCL	597.9
97.5% Chebyshev(Mean, Sd) UCL	763.9	99% Chebyshev(Mean, Sd) UCL	1090

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.99	Mean	8.427
Maximum	24.6	Median	5.31
SD	8.388	Std. Error of Mean	3.424
Coefficient of Variation	0.995	Skewness	1.885
Mean of logged Data	1.724	SD of logged Data	1.052

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	15.33	95% Adjusted-CLT UCL (Chen-1995)	16.87
		95% Modified-t UCL (Johnson-1978)	15.77

Nonparametric Distribution Free UCLs

95% CLT UCL	14.06	95% Jackknife UCL	15.33
95% Standard Bootstrap UCL	13.55	95% Bootstrap-t UCL	27.69
95% Hall's Bootstrap UCL	46.81	95% Percentile Bootstrap UCL	14.09
95% BCA Bootstrap UCL	15.68		
90% Chebyshev(Mean, Sd) UCL	18.7	95% Chebyshev(Mean, Sd) UCL	23.35
97.5% Chebyshev(Mean, Sd) UCL	29.81	99% Chebyshev(Mean, Sd) UCL	42.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	52.7	Mean	235.6
Maximum	802	Median	142.5
SD	283.2	Std. Error of Mean	115.6
Coefficient of Variation	1.202	Skewness	2.234
Mean of logged Data	5.018	SD of logged Data	0.966

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	468.6	95% Adjusted-CLT UCL (Chen-1995)	538.4
		95% Modified-t UCL (Johnson-1978)	486.1

Nonparametric Distribution Free UCLs

95% CLT UCL	425.8	95% Jackknife UCL	468.6
95% Standard Bootstrap UCL	405.2	95% Bootstrap-t UCL	1078
95% Hall's Bootstrap UCL	1308	95% Percentile Bootstrap UCL	443.5
95% BCA Bootstrap UCL	483		
90% Chebyshev(Mean, Sd) UCL	582.4	95% Chebyshev(Mean, Sd) UCL	739.5
97.5% Chebyshev(Mean, Sd) UCL	957.6	99% Chebyshev(Mean, Sd) UCL	1386

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	113	Mean	461.3
Maximum	1380	Median	297
SD	476.5	Std. Error of Mean	194.5
Coefficient of Variation	1.033	Skewness	1.91
Mean of logged Data	5.756	SD of logged Data	0.928

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	853.4	95% Adjusted-CLT UCL (Chen-1995)	943.5
		95% Modified-t UCL (Johnson-1978)	878.6

Nonparametric Distribution Free UCLs

95% CLT UCL	781.3	95% Jackknife UCL	853.4
95% Standard Bootstrap UCL	745.1	95% Bootstrap-t UCL	1708
95% Hall's Bootstrap UCL	2430	95% Percentile Bootstrap UCL	783.7
95% BCA Bootstrap UCL	879.8		
90% Chebyshev(Mean, Sd) UCL	1045	95% Chebyshev(Mean, Sd) UCL	1309
97.5% Chebyshev(Mean, Sd) UCL	1676	99% Chebyshev(Mean, Sd) UCL	2397

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.3	Mean	33.38
Maximum	57.9	Median	31.85
SD	22.08	Std. Error of Mean	9.015
Coefficient of Variation	0.661	Skewness	0.0642
Mean of logged Data	3.282	SD of logged Data	0.766

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.55	95% Adjusted-CLT UCL (Chen-1995)	48.46
		95% Modified-t UCL (Johnson-1978)	51.59

Nonparametric Distribution Free UCLs

95% CLT UCL	48.21	95% Jackknife UCL	51.55
95% Standard Bootstrap UCL	46.78	95% Bootstrap-t UCL	51.21
95% Hall's Bootstrap UCL	41.25	95% Percentile Bootstrap UCL	47.17
95% BCA Bootstrap UCL	47.17		
90% Chebyshev(Mean, Sd) UCL	60.43	95% Chebyshev(Mean, Sd) UCL	72.68
97.5% Chebyshev(Mean, Sd) UCL	89.68	99% Chebyshev(Mean, Sd) UCL	123.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.9	Mean	8.572
Maximum	10.1	Median	8.535
SD	1.052	Std. Error of Mean	0.429
Coefficient of Variation	0.123	Skewness	-0.256
Mean of logged Data	2.142	SD of logged Data	0.126

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.437	95% Adjusted-CLT UCL (Chen-1995)	9.23
		95% Modified-t UCL (Johnson-1978)	9.429

Nonparametric Distribution Free UCLs

95% CLT UCL	9.278	95% Jackknife UCL	9.437

95% Standard Bootstrap UCL	9.204	95% Bootstrap-t UCL	9.356
95% Hall's Bootstrap UCL	9.454	95% Percentile Bootstrap UCL	9.172
95% BCA Bootstrap UCL	9.175		
90% Chebyshev(Mean, Sd) UCL	9.86	95% Chebyshev(Mean, Sd) UCL	10.44
97.5% Chebyshev(Mean, Sd) UCL	11.25	99% Chebyshev(Mean, Sd) UCL	12.84

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	26	Mean	33.9
Maximum	42.1	Median	33.05
SD	5.449	Std. Error of Mean	2.225
Coefficient of Variation	0.161	Skewness	0.155
Mean of logged Data	3.512	SD of logged Data	0.163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	38.38	95% Adjusted-CLT UCL (Chen-1995)	37.71
		95% Modified-t UCL (Johnson-1978)	38.41

Nonparametric Distribution Free UCLs

95% CLT UCL	37.56	95% Jackknife UCL	38.38
95% Standard Bootstrap UCL	37.26	95% Bootstrap-t UCL	38.93
95% Hall's Bootstrap UCL	40.88	95% Percentile Bootstrap UCL	37.38
95% BCA Bootstrap UCL	37.27		
90% Chebyshev(Mean, Sd) UCL	40.57	95% Chebyshev(Mean, Sd) UCL	43.6
97.5% Chebyshev(Mean, Sd) UCL	47.79	99% Chebyshev(Mean, Sd) UCL	56.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:57:10 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32439037) - HRA.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.67	Mean	10.85
Maximum	50.7	Median	2.928
SD	19.56	Std. Error of Mean	7.987
Coefficient of Variation	1.803	Skewness	2.426
Mean of logged Data	1.459	SD of logged Data	1.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.94	95% Adjusted-CLT UCL (Chen-1995)	32.44
		95% Modified-t UCL (Johnson-1978)	28.26

Nonparametric Distribution Free UCLs

95% CLT UCL	23.99	95% Jackknife UCL	26.94
95% Standard Bootstrap UCL	22.94	95% Bootstrap-t UCL	192.2
95% Hall's Bootstrap UCL	140.1	95% Percentile Bootstrap UCL	26.34
95% BCA Bootstrap UCL	27.29		
90% Chebyshev(Mean, Sd) UCL	34.81	95% Chebyshev(Mean, Sd) UCL	45.66
97.5% Chebyshev(Mean, Sd) UCL	60.73	99% Chebyshev(Mean, Sd) UCL	90.32

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0

Minimum	1.98	Mean	31.01
Maximum	157	Median	2.54
SD	62.13	Std. Error of Mean	25.36
Coefficient of Variation	2.004	Skewness	2.381
Mean of logged Data	1.877	SD of logged Data	1.793

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	82.12	95% Adjusted-CLT UCL (Chen-1995)	99.08
		95% Modified-t UCL (Johnson-1978)	86.23

Nonparametric Distribution Free UCLs

95% CLT UCL	72.73	95% Jackknife UCL	82.12
95% Standard Bootstrap UCL	69.99	95% Bootstrap-t UCL	3811
95% Hall's Bootstrap UCL	2264	95% Percentile Bootstrap UCL	79.52
95% BCA Bootstrap UCL	82.68		
90% Chebyshev(Mean, Sd) UCL	107.1	95% Chebyshev(Mean, Sd) UCL	141.6
97.5% Chebyshev(Mean, Sd) UCL	189.4	99% Chebyshev(Mean, Sd) UCL	283.4

Suggested UCL to Use

95% Hall's Bootstrap UCL	2264

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.65	Mean	74.6
Maximum	235	Median	7.41
SD	106.4	Std. Error of Mean	43.44
Coefficient of Variation	1.426	Skewness	1.059
Mean of logged Data	3.037	SD of logged Data	1.791

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	162.1	95% Adjusted-CLT UCL (Chen-1995)	166.1
		95% Modified-t UCL (Johnson-1978)	165.3

Nonparametric Distribution Free UCLs

95% CLT UCL	146	95% Jackknife UCL	162.1
95% Standard Bootstrap UCL	140.5	95% Bootstrap-t UCL	8028
95% Hall's Bootstrap UCL	5129	95% Percentile Bootstrap UCL	142.8
95% BCA Bootstrap UCL	150.9		
90% Chebyshev(Mean, Sd) UCL	204.9	95% Chebyshev(Mean, Sd) UCL	264
97.5% Chebyshev(Mean, Sd) UCL	345.9	99% Chebyshev(Mean, Sd) UCL	506.8

Suggested UCL to Use

95% Hall's Bootstrap UCL 5129

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	44.7	Mean	425.9
Maximum	1690	Median	66.6
SD	662.2	Std. Error of Mean	270.4
Coefficient of Variation	1.555	Skewness	1.887
Mean of logged Data	4.985	SD of logged Data	1.562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	970.7	95% Adjusted-CLT UCL (Chen-1995)	1093
		95% Modified-t UCL (Johnson-1978)	1005

Nonparametric Distribution Free UCLs

95% CLT UCL	870.6	95% Jackknife UCL	970.7
95% Standard Bootstrap UCL	822	95% Bootstrap-t UCL	21760
95% Hall's Bootstrap UCL	11883	95% Percentile Bootstrap UCL	872.1

95% BCA Bootstrap UCL	1066		
90% Chebyshev(Mean, Sd) UCL	1237	95% Chebyshev(Mean, Sd) UCL	1604
97.5% Chebyshev(Mean, Sd) UCL	2114	99% Chebyshev(Mean, Sd) UCL	3116

Suggested UCL to Use

95% Hall's Bootstrap UCL 11883

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	59.1	Mean	515.4
Maximum	2140	Median	96.25
SD	827.3	Std. Error of Mean	337.7
Coefficient of Variation	1.605	Skewness	2.095
Mean of logged Data	5.237	SD of logged Data	1.485

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1196	95% Adjusted-CLT UCL (Chen-1995)	1379
		95% Modified-t UCL (Johnson-1978)	1244

Nonparametric Distribution Free UCLs

95% CLT UCL	1071	95% Jackknife UCL	1196
95% Standard Bootstrap UCL	1016	95% Bootstrap-t UCL	16318
95% Hall's Bootstrap UCL	9418	95% Percentile Bootstrap UCL	1107
95% BCA Bootstrap UCL	1297		
90% Chebyshev(Mean, Sd) UCL	1529	95% Chebyshev(Mean, Sd) UCL	1987
97.5% Chebyshev(Mean, Sd) UCL	2624	99% Chebyshev(Mean, Sd) UCL	3876

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	75.4	Mean	635.8
Maximum	2560	Median	121.6
SD	990	Std. Error of Mean	404.2
Coefficient of Variation	1.557	Skewness	2.014
Mean of logged Data	5.482	SD of logged Data	1.467

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1450	95% Adjusted-CLT UCL (Chen-1995)	1656
		95% Modified-t UCL (Johnson-1978)	1506

Nonparametric Distribution Free UCLs

95% CLT UCL	1301	95% Jackknife UCL	1450
95% Standard Bootstrap UCL	1247	95% Bootstrap-t UCL	19626
95% Hall's Bootstrap UCL	15841	95% Percentile Bootstrap UCL	1326
95% BCA Bootstrap UCL	1577		
90% Chebyshev(Mean, Sd) UCL	1848	95% Chebyshev(Mean, Sd) UCL	2398
97.5% Chebyshev(Mean, Sd) UCL	3160	99% Chebyshev(Mean, Sd) UCL	4657

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	42.5	Mean	327.2
Maximum	1280	Median	75.35
SD	491.5	Std. Error of Mean	200.6
Coefficient of Variation	1.502	Skewness	1.994
Mean of logged Data	4.905	SD of logged Data	1.4

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	731.5	95% Adjusted-CLT UCL (Chen-1995)	831.7
		95% Modified-t UCL (Johnson-1978)	758.7

Nonparametric Distribution Free UCLs

95% CLT UCL	657.2	95% Jackknife UCL	731.5
95% Standard Bootstrap UCL	617.2	95% Bootstrap-t UCL	5657
95% Hall's Bootstrap UCL	3214	95% Percentile Bootstrap UCL	665.4
95% BCA Bootstrap UCL	738.8		
90% Chebyshev(Mean, Sd) UCL	929.1	95% Chebyshev(Mean, Sd) UCL	1202
97.5% Chebyshev(Mean, Sd) UCL	1580	99% Chebyshev(Mean, Sd) UCL	2324

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	32.3	Mean	272.7
Maximum	1140	Median	47.55
SD	441.2	Std. Error of Mean	180.1
Coefficient of Variation	1.618	Skewness	2.103
Mean of logged Data	4.583	SD of logged Data	1.496

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	635.6	95% Adjusted-CLT UCL (Chen-1995)	734.2
		95% Modified-t UCL (Johnson-1978)	661.4

Nonparametric Distribution Free UCLs

95% CLT UCL	569	95% Jackknife UCL	635.6
95% Standard Bootstrap UCL	546.6	95% Bootstrap-t UCL	9159
95% Hall's Bootstrap UCL	4671	95% Percentile Bootstrap UCL	587.8
95% BCA Bootstrap UCL	688.2		

90% Chebyshev(Mean, Sd) UCL	813	95% Chebyshev(Mean, Sd) UCL	1058
97.5% Chebyshev(Mean, Sd) UCL	1397	99% Chebyshev(Mean, Sd) UCL	2065

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	59.9	Mean	565.2
Maximum	2420	Median	89.15
SD	939.6	Std. Error of Mean	383.6
Coefficient of Variation	1.663	Skewness	2.137
Mean of logged Data	5.247	SD of logged Data	1.54

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1338	95% Adjusted-CLT UCL (Chen-1995)	1554
		95% Modified-t UCL (Johnson-1978)	1394

Nonparametric Distribution Free UCLs

95% CLT UCL	1196	95% Jackknife UCL	1338
95% Standard Bootstrap UCL	1138	95% Bootstrap-t UCL	30902
95% Hall's Bootstrap UCL	15257	95% Percentile Bootstrap UCL	1244
95% BCA Bootstrap UCL	1450		
90% Chebyshev(Mean, Sd) UCL	1716	95% Chebyshev(Mean, Sd) UCL	2237
97.5% Chebyshev(Mean, Sd) UCL	2961	99% Chebyshev(Mean, Sd) UCL	4382

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	10.9	Mean	104.4
Maximum	457	Median	18.55
SD	177	Std. Error of Mean	72.24
Coefficient of Variation	1.696	Skewness	2.217
Mean of logged Data	3.57	SD of logged Data	1.519

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	249.9	95% Adjusted-CLT UCL (Chen-1995)	293.1
		95% Modified-t UCL (Johnson-1978)	260.8

Nonparametric Distribution Free UCLs

95% CLT UCL	223.2	95% Jackknife UCL	249.9
95% Standard Bootstrap UCL	208.2	95% Bootstrap-t UCL	3165
95% Hall's Bootstrap UCL	1399	95% Percentile Bootstrap UCL	235.9
95% BCA Bootstrap UCL	267.6		
90% Chebyshev(Mean, Sd) UCL	321.1	95% Chebyshev(Mean, Sd) UCL	419.3
97.5% Chebyshev(Mean, Sd) UCL	555.5	99% Chebyshev(Mean, Sd) UCL	823.2

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	60.7	Mean	675.2
Maximum	2350	Median	88.4
SD	974.1	Std. Error of Mean	397.7
Coefficient of Variation	1.443	Skewness	1.366
Mean of logged Data	5.395	SD of logged Data	1.645

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1477	95% Adjusted-CLT UCL (Chen-1995)	1566
		95% Modified-t UCL (Johnson-1978)	1513

Nonparametric Distribution Free UCLs

95% CLT UCL	1329	95% Jackknife UCL	1477
95% Standard Bootstrap UCL	1281	95% Bootstrap-t UCL	46888
95% Hall's Bootstrap UCL	26362	95% Percentile Bootstrap UCL	1274
95% BCA Bootstrap UCL	1435		
90% Chebyshev(Mean, Sd) UCL	1868	95% Chebyshev(Mean, Sd) UCL	2409
97.5% Chebyshev(Mean, Sd) UCL	3159	99% Chebyshev(Mean, Sd) UCL	4632

Suggested UCL to Use

95% Hall's Bootstrap UCL 26362

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	1.06	Mean	15.18
Maximum	64.2	Median	3.128
SD	24.91	Std. Error of Mean	10.17
Coefficient of Variation	1.642	Skewness	2.106
Mean of logged Data	1.533	SD of logged Data	1.695

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.67	95% Adjusted-CLT UCL (Chen-1995)	41.25
		95% Modified-t UCL (Johnson-1978)	37.13

Nonparametric Distribution Free UCLs

95% CLT UCL	31.91	95% Jackknife UCL	35.67
95% Standard Bootstrap UCL	30.16	95% Bootstrap-t UCL	178
95% Hall's Bootstrap UCL	181.1	95% Percentile Bootstrap UCL	32.73
95% BCA Bootstrap UCL	39.03		
90% Chebyshev(Mean, Sd) UCL	45.69	95% Chebyshev(Mean, Sd) UCL	59.51

97.5% Chebyshev(Mean, Sd) UCL	78.7	99% Chebyshev(Mean, Sd) UCL	116.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	48.7	Mean	376.9
Maximum	1490	Median	81.35
SD	573.3	Std. Error of Mean	234
Coefficient of Variation	1.521	Skewness	2.005
Mean of logged Data	5.02	SD of logged Data	1.421

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	848.5	95% Adjusted-CLT UCL (Chen-1995)	966.6
		95% Modified-t UCL (Johnson-1978)	880.5

Nonparametric Distribution Free UCLs

95% CLT UCL	761.9	95% Jackknife UCL	848.5
95% Standard Bootstrap UCL	730.9	95% Bootstrap-t UCL	7155
95% Hall's Bootstrap UCL	4054	95% Percentile Bootstrap UCL	770.9
95% BCA Bootstrap UCL	923.3		
90% Chebyshev(Mean, Sd) UCL	1079	95% Chebyshev(Mean, Sd) UCL	1397
97.5% Chebyshev(Mean, Sd) UCL	1839	99% Chebyshev(Mean, Sd) UCL	2706

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6

		Number of Missing Observations	0
Minimum	3.93	Mean	29.09
Maximum	146	Median	4.255
SD	57.36	Std. Error of Mean	23.42
Coefficient of Variation	1.972	Skewness	2.433
Mean of logged Data	2.189	SD of logged Data	1.434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.27	95% Adjusted-CLT UCL (Chen-1995)	92.46
		95% Modified-t UCL (Johnson-1978)	80.15

Nonparametric Distribution Free UCLs

95% CLT UCL	67.6	95% Jackknife UCL	76.27
95% Standard Bootstrap UCL	64.29	95% Bootstrap-t UCL	10269
95% Hall's Bootstrap UCL	3411	95% Percentile Bootstrap UCL	75.05
95% BCA Bootstrap UCL	77.71		
90% Chebyshev(Mean, Sd) UCL	99.34	95% Chebyshev(Mean, Sd) UCL	131.2
97.5% Chebyshev(Mean, Sd) UCL	175.3	99% Chebyshev(Mean, Sd) UCL	262.1

Suggested UCL to Use

95% Hall's Bootstrap UCL 3411

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24.4	Mean	315.6
Maximum	967	Median	35.25
SD	442.8	Std. Error of Mean	180.8
Coefficient of Variation	1.403	Skewness	1.03
Mean of logged Data	4.559	SD of logged Data	1.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	679.8	95% Adjusted-CLT UCL (Chen-1995)	694.1
		95% Modified-t UCL (Johnson-1978)	692.5

Nonparametric Distribution Free UCLs

95% CLT UCL	612.9	95% Jackknife UCL	679.8
95% Standard Bootstrap UCL	586	95% Bootstrap-t UCL	25944
95% Hall's Bootstrap UCL	28881	95% Percentile Bootstrap UCL	600.2
95% BCA Bootstrap UCL	626.1		
90% Chebyshev(Mean, Sd) UCL	857.8	95% Chebyshev(Mean, Sd) UCL	1103
97.5% Chebyshev(Mean, Sd) UCL	1444	99% Chebyshev(Mean, Sd) UCL	2114

Suggested UCL to Use

95% Hall's Bootstrap UCL 28881

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	66.8	Mean	700.9
Maximum	2770	Median	96
SD	1092	Std. Error of Mean	445.9
Coefficient of Variation	1.558	Skewness	1.838
Mean of logged Data	5.433	SD of logged Data	1.607

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1599	95% Adjusted-CLT UCL (Chen-1995)	1792
		95% Modified-t UCL (Johnson-1978)	1655

Nonparametric Distribution Free UCLs

95% CLT UCL	1434	95% Jackknife UCL	1599
95% Standard Bootstrap UCL	1375	95% Bootstrap-t UCL	52960

95% Hall's Bootstrap UCL	27357	95% Percentile Bootstrap UCL	1430
95% BCA Bootstrap UCL	1763		
90% Chebyshev(Mean, Sd) UCL	2039	95% Chebyshev(Mean, Sd) UCL	2644
97.5% Chebyshev(Mean, Sd) UCL	3485	99% Chebyshev(Mean, Sd) UCL	5137

Suggested UCL to Use

95% Hall's Bootstrap UCL 27357

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	9.95	Mean	20.24
Maximum	34.2	Median	17.15
SD	11.5	Std. Error of Mean	4.693
Coefficient of Variation	0.568	Skewness	0.374
Mean of logged Data	2.863	SD of logged Data	0.595

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.7	95% Adjusted-CLT UCL (Chen-1995)	28.73
		95% Modified-t UCL (Johnson-1978)	29.82

Nonparametric Distribution Free UCLs

95% CLT UCL	27.96	95% Jackknife UCL	29.7
95% Standard Bootstrap UCL	27.33	95% Bootstrap-t UCL	29.98
95% Hall's Bootstrap UCL	26.27	95% Percentile Bootstrap UCL	27.73
95% BCA Bootstrap UCL	27.73		
90% Chebyshev(Mean, Sd) UCL	34.32	95% Chebyshev(Mean, Sd) UCL	40.7
97.5% Chebyshev(Mean, Sd) UCL	49.55	99% Chebyshev(Mean, Sd) UCL	66.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	6.61	Mean	7.303
Maximum	7.89	Median	7.38
SD	0.488	Std. Error of Mean	0.199
Coefficient of Variation	0.0668	Skewness	-0.374
Mean of logged Data	1.986	SD of logged Data	0.0676

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.705	95% Adjusted-CLT UCL (Chen-1995)	7.599
		95% Modified-t UCL (Johnson-1978)	7.7

Nonparametric Distribution Free UCLs

95% CLT UCL	7.631	95% Jackknife UCL	7.705
95% Standard Bootstrap UCL	7.601	95% Bootstrap-t UCL	7.662
95% Hall's Bootstrap UCL	7.552	95% Percentile Bootstrap UCL	7.613
95% BCA Bootstrap UCL	7.587		
90% Chebyshev(Mean, Sd) UCL	7.901	95% Chebyshev(Mean, Sd) UCL	8.172
97.5% Chebyshev(Mean, Sd) UCL	8.548	99% Chebyshev(Mean, Sd) UCL	9.286

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	26.6	Mean	29.07
Maximum	32.6	Median	28.35
SD	2.598	Std. Error of Mean	1.061
Coefficient of Variation	0.0894	Skewness	0.616

Mean of logged Data	3.366	SD of logged Data	0.0881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.2	95% Adjusted-CLT UCL (Chen-1995)	31.1
		95% Modified-t UCL (Johnson-1978)	31.25

Nonparametric Distribution Free UCLs

95% CLT UCL	30.81	95% Jackknife UCL	31.2
95% Standard Bootstrap UCL	30.66	95% Bootstrap-t UCL	33.17
95% Hall's Bootstrap UCL	37.33	95% Percentile Bootstrap UCL	30.68
95% BCA Bootstrap UCL	30.95		
90% Chebyshev(Mean, Sd) UCL	32.25	95% Chebyshev(Mean, Sd) UCL	33.69
97.5% Chebyshev(Mean, Sd) UCL	35.69	99% Chebyshev(Mean, Sd) UCL	39.62

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Exhibit 3 ProUCL Output for All Soil Depths

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:59:40 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 31021063) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.733	Mean	0.989
Maximum	1.46	Median	0.922
SD	0.2	Std. Error of Mean	0.0668
Coefficient of Variation	0.203	Skewness	1.713
Mean of logged Data	-0.0275	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.113	95% Adjusted-CLT UCL (Chen-1995)	1.139
		95% Modified-t UCL (Johnson-1978)	1.119

Nonparametric Distribution Free UCLs

95% CLT UCL	1.099	95% Jackknife UCL	1.113
95% Standard Bootstrap UCL	1.091	95% Bootstrap-t UCL	1.185
95% Hall's Bootstrap UCL	1.674	95% Percentile Bootstrap UCL	1.103
95% BCA Bootstrap UCL	1.139		
90% Chebyshev(Mean, Sd) UCL	1.189	95% Chebyshev(Mean, Sd) UCL	1.28
97.5% Chebyshev(Mean, Sd) UCL	1.406	99% Chebyshev(Mean, Sd) UCL	1.653

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.472	Mean	0.638
Maximum	1.61	Median	0.505
SD	0.367	Std. Error of Mean	0.122
Coefficient of Variation	0.576	Skewness	2.925
Mean of logged Data	-0.538	SD of logged Data	0.388

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.865	95% Adjusted-CLT UCL (Chen-1995)	0.966
		95% Modified-t UCL (Johnson-1978)	0.885

Nonparametric Distribution Free UCLs

95% CLT UCL	0.839	95% Jackknife UCL	0.865
95% Standard Bootstrap UCL	0.828	95% Bootstrap-t UCL	2.704
95% Hall's Bootstrap UCL	1.929	95% Percentile Bootstrap UCL	0.878
95% BCA Bootstrap UCL	1.003		
90% Chebyshev(Mean, Sd) UCL	1.005	95% Chebyshev(Mean, Sd) UCL	1.171
97.5% Chebyshev(Mean, Sd) UCL	1.402	99% Chebyshev(Mean, Sd) UCL	1.855

Suggested UCL to Use

95% Student's-t UCL	0.865	or 95% Modified-t UCL	0.885

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.73	Mean	2.453
Maximum	4.48	Median	2.06
SD	0.951	Std. Error of Mean	0.317
Coefficient of Variation	0.388	Skewness	1.74
Mean of logged Data	0.844	SD of logged Data	0.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3.043	95% Adjusted-CLT UCL (Chen-1995)	3.171
		95% Modified-t UCL (Johnson-1978)	3.073

Nonparametric Distribution Free UCLs

95% CLT UCL	2.975	95% Jackknife UCL	3.043
95% Standard Bootstrap UCL	2.958	95% Bootstrap-t UCL	6.089
95% Hall's Bootstrap UCL	8.448	95% Percentile Bootstrap UCL	3.022
95% BCA Bootstrap UCL	3.111		
90% Chebyshev(Mean, Sd) UCL	3.404	95% Chebyshev(Mean, Sd) UCL	3.835
97.5% Chebyshev(Mean, Sd) UCL	4.432	99% Chebyshev(Mean, Sd) UCL	5.607

Suggested UCL to Use

95% Student's-t UCL	3.043	or 95% Modified-t UCL	3.073

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	12.59
Maximum	29.2	Median	7.85
SD	9.558	Std. Error of Mean	3.186
Coefficient of Variation	0.759	Skewness	0.528
Mean of logged Data	2.194	SD of logged Data	0.95

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.51	95% Adjusted-CLT UCL (Chen-1995)	18.43
		95% Modified-t UCL (Johnson-1978)	18.6

Nonparametric Distribution Free UCLs

95% CLT UCL	17.83	95% Jackknife UCL	18.51
95% Standard Bootstrap UCL	17.54	95% Bootstrap-t UCL	19.15
95% Hall's Bootstrap UCL	17.59	95% Percentile Bootstrap UCL	17.85
95% BCA Bootstrap UCL	17.83		
90% Chebyshev(Mean, Sd) UCL	22.14	95% Chebyshev(Mean, Sd) UCL	26.47
97.5% Chebyshev(Mean, Sd) UCL	32.48	99% Chebyshev(Mean, Sd) UCL	44.29

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.5	Mean	15.89
Maximum	37.4	Median	11.6
SD	12.08	Std. Error of Mean	4.028
Coefficient of Variation	0.761	Skewness	0.661
Mean of logged Data	2.405	SD of logged Data	1.025

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.38	95% Adjusted-CLT UCL (Chen-1995)	23.46
		95% Modified-t UCL (Johnson-1978)	23.53

Nonparametric Distribution Free UCLs

95% CLT UCL	22.51	95% Jackknife UCL	23.38
95% Standard Bootstrap UCL	22.09	95% Bootstrap-t UCL	25.64
95% Hall's Bootstrap UCL	22.88	95% Percentile Bootstrap UCL	22.21
95% BCA Bootstrap UCL	22.61		
90% Chebyshev(Mean, Sd) UCL	27.97	95% Chebyshev(Mean, Sd) UCL	33.45
97.5% Chebyshev(Mean, Sd) UCL	41.04	99% Chebyshev(Mean, Sd) UCL	55.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	20.91
Maximum	48.5	Median	14
SD	15.76	Std. Error of Mean	5.255
Coefficient of Variation	0.754	Skewness	0.626
Mean of logged Data	2.715	SD of logged Data	0.932

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.68	95% Adjusted-CLT UCL (Chen-1995)	30.73
		95% Modified-t UCL (Johnson-1978)	30.87

Nonparametric Distribution Free UCLs

95% CLT UCL	29.55	95% Jackknife UCL	30.68
95% Standard Bootstrap UCL	29.01	95% Bootstrap-t UCL	32.4
95% Hall's Bootstrap UCL	29.31	95% Percentile Bootstrap UCL	29.78
95% BCA Bootstrap UCL	30.38		
90% Chebyshev(Mean, Sd) UCL	36.68	95% Chebyshev(Mean, Sd) UCL	43.82
97.5% Chebyshev(Mean, Sd) UCL	53.73	99% Chebyshev(Mean, Sd) UCL	73.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	11.8
Maximum	27.8	Median	8.32
SD	8.583	Std. Error of Mean	2.861
Coefficient of Variation	0.727	Skewness	0.886
Mean of logged Data	2.216	SD of logged Data	0.777

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.12	95% Adjusted-CLT UCL (Chen-1995)	17.41
		95% Modified-t UCL (Johnson-1978)	17.26

Nonparametric Distribution Free UCLs

95% CLT UCL	16.51	95% Jackknife UCL	17.12

95% Standard Bootstrap UCL	16.26	95% Bootstrap-t UCL	19.14
95% Hall's Bootstrap UCL	17.13	95% Percentile Bootstrap UCL	16.25
95% BCA Bootstrap UCL	17.07		
90% Chebyshev(Mean, Sd) UCL	20.39	95% Chebyshev(Mean, Sd) UCL	24.27
97.5% Chebyshev(Mean, Sd) UCL	29.67	99% Chebyshev(Mean, Sd) UCL	40.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	8.031
Maximum	18.7	Median	5.76
SD	5.788	Std. Error of Mean	1.929
Coefficient of Variation	0.721	Skewness	0.791
Mean of logged Data	1.821	SD of logged Data	0.804

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.62	95% Adjusted-CLT UCL (Chen-1995)	11.75
		95% Modified-t UCL (Johnson-1978)	11.7

Nonparametric Distribution Free UCLs

95% CLT UCL	11.2	95% Jackknife UCL	11.62
95% Standard Bootstrap UCL	11.09	95% Bootstrap-t UCL	12.7
95% Hall's Bootstrap UCL	11.42	95% Percentile Bootstrap UCL	11.08
95% BCA Bootstrap UCL	11.35		
90% Chebyshev(Mean, Sd) UCL	13.82	95% Chebyshev(Mean, Sd) UCL	16.44
97.5% Chebyshev(Mean, Sd) UCL	20.08	99% Chebyshev(Mean, Sd) UCL	27.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.84	Mean	16.56
Maximum	38	Median	11
SD	12.67	Std. Error of Mean	4.224
Coefficient of Variation	0.765	Skewness	0.524
Mean of logged Data	2.44	SD of logged Data	1.018

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.42	95% Adjusted-CLT UCL (Chen-1995)	24.3
		95% Modified-t UCL (Johnson-1978)	24.54

Nonparametric Distribution Free UCLs

95% CLT UCL	23.51	95% Jackknife UCL	24.42
95% Standard Bootstrap UCL	23.26	95% Bootstrap-t UCL	25.53
95% Hall's Bootstrap UCL	23.25	95% Percentile Bootstrap UCL	23.14
95% BCA Bootstrap UCL	23.98		
90% Chebyshev(Mean, Sd) UCL	29.23	95% Chebyshev(Mean, Sd) UCL	34.97
97.5% Chebyshev(Mean, Sd) UCL	42.94	99% Chebyshev(Mean, Sd) UCL	58.59

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.46	Mean	3.848
Maximum	7.16	Median	3.165
SD	1.482	Std. Error of Mean	0.494
Coefficient of Variation	0.385	Skewness	1.635
Mean of logged Data	1.293	SD of logged Data	0.335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.767	95% Adjusted-CLT UCL (Chen-1995)	4.948
		95% Modified-t UCL (Johnson-1978)	4.812

Nonparametric Distribution Free UCLs

95% CLT UCL	4.661	95% Jackknife UCL	4.767
95% Standard Bootstrap UCL	4.643	95% Bootstrap-t UCL	5.522
95% Hall's Bootstrap UCL	5.176	95% Percentile Bootstrap UCL	4.66
95% BCA Bootstrap UCL	4.851		
90% Chebyshev(Mean, Sd) UCL	5.33	95% Chebyshev(Mean, Sd) UCL	6.001
97.5% Chebyshev(Mean, Sd) UCL	6.933	99% Chebyshev(Mean, Sd) UCL	8.763

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.32	Mean	22.5
Maximum	53.3	Median	13.7
SD	18.24	Std. Error of Mean	6.081
Coefficient of Variation	0.811	Skewness	0.481
Mean of logged Data	2.686	SD of logged Data	1.099

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.81	95% Adjusted-CLT UCL (Chen-1995)	33.54
		95% Modified-t UCL (Johnson-1978)	33.97

Nonparametric Distribution Free UCLs

95% CLT UCL	32.5	95% Jackknife UCL	33.81
95% Standard Bootstrap UCL	32.01	95% Bootstrap-t UCL	34.78
95% Hall's Bootstrap UCL	31.64	95% Percentile Bootstrap UCL	32.08
95% BCA Bootstrap UCL	33.35		
90% Chebyshev(Mean, Sd) UCL	40.74	95% Chebyshev(Mean, Sd) UCL	49
97.5% Chebyshev(Mean, Sd) UCL	60.47	99% Chebyshev(Mean, Sd) UCL	83

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.18	Mean	1.228
Maximum	1.27	Median	1.225
SD	0.0287	Std. Error of Mean	0.00957
Coefficient of Variation	0.0234	Skewness	-0.0684
Mean of logged Data	0.205	SD of logged Data	0.0234

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.246	95% Adjusted-CLT UCL (Chen-1995)	1.244
		95% Modified-t UCL (Johnson-1978)	1.246

Nonparametric Distribution Free UCLs

95% CLT UCL	1.244	95% Jackknife UCL	1.246
95% Standard Bootstrap UCL	1.243	95% Bootstrap-t UCL	1.246
95% Hall's Bootstrap UCL	1.247	95% Percentile Bootstrap UCL	1.243
95% BCA Bootstrap UCL	1.243		
90% Chebyshev(Mean, Sd) UCL	1.257	95% Chebyshev(Mean, Sd) UCL	1.27
97.5% Chebyshev(Mean, Sd) UCL	1.288	99% Chebyshev(Mean, Sd) UCL	1.324

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	12.78
Maximum	32.3	Median	8.91
SD	9.719	Std. Error of Mean	3.24
Coefficient of Variation	0.76	Skewness	1.082
Mean of logged Data	2.277	SD of logged Data	0.805

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.81	95% Adjusted-CLT UCL (Chen-1995)	19.36
		95% Modified-t UCL (Johnson-1978)	19

Nonparametric Distribution Free UCLs			
95% CLT UCL	18.11	95% Jackknife UCL	18.81
95% Standard Bootstrap UCL	17.66	95% Bootstrap-t UCL	21.87
95% Hall's Bootstrap UCL	19.84	95% Percentile Bootstrap UCL	18.16
95% BCA Bootstrap UCL	18.8		
90% Chebyshev(Mean, Sd) UCL	22.5	95% Chebyshev(Mean, Sd) UCL	26.9
97.5% Chebyshev(Mean, Sd) UCL	33.01	99% Chebyshev(Mean, Sd) UCL	45.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.4	Mean	1.669
Maximum	2.05	Median	1.59
SD	0.234	Std. Error of Mean	0.078
Coefficient of Variation	0.14	Skewness	0.639
Mean of logged Data	0.504	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.814	95% Adjusted-CLT UCL (Chen-1995)	1.815
		95% Modified-t UCL (Johnson-1978)	1.817

Nonparametric Distribution Free UCLs

95% CLT UCL	1.797	95% Jackknife UCL	1.814
95% Standard Bootstrap UCL	1.791	95% Bootstrap-t UCL	1.845
95% Hall's Bootstrap UCL	1.84	95% Percentile Bootstrap UCL	1.796
95% BCA Bootstrap UCL	1.797		
90% Chebyshev(Mean, Sd) UCL	1.903	95% Chebyshev(Mean, Sd) UCL	2.009
97.5% Chebyshev(Mean, Sd) UCL	2.156	99% Chebyshev(Mean, Sd) UCL	2.445

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	11.06
Maximum	26.6	Median	6.31
SD	9.295	Std. Error of Mean	3.098
Coefficient of Variation	0.84	Skewness	0.932
Mean of logged Data	2.072	SD of logged Data	0.873

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.82	95% Adjusted-CLT UCL (Chen-1995)	17.19
		95% Modified-t UCL (Johnson-1978)	16.98

Nonparametric Distribution Free UCLs

95% CLT UCL	16.16	95% Jackknife UCL	16.82
95% Standard Bootstrap UCL	15.95	95% Bootstrap-t UCL	19.85
95% Hall's Bootstrap UCL	18.31	95% Percentile Bootstrap UCL	15.99
95% BCA Bootstrap UCL	16.9		
90% Chebyshev(Mean, Sd) UCL	20.36	95% Chebyshev(Mean, Sd) UCL	24.57
97.5% Chebyshev(Mean, Sd) UCL	30.41	99% Chebyshev(Mean, Sd) UCL	41.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.18	Mean	20.51
Maximum	48	Median	13.2
SD	16.16	Std. Error of Mean	5.387
Coefficient of Variation	0.788	Skewness	0.46
Mean of logged Data	2.614	SD of logged Data	1.078

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.53	95% Adjusted-CLT UCL (Chen-1995)	30.26
		95% Modified-t UCL (Johnson-1978)	30.67

Nonparametric Distribution Free UCLs

95% CLT UCL	29.37	95% Jackknife UCL	30.53
95% Standard Bootstrap UCL	28.83	95% Bootstrap-t UCL	31.56
95% Hall's Bootstrap UCL	28.83	95% Percentile Bootstrap UCL	28.84
95% BCA Bootstrap UCL	29.38		
90% Chebyshev(Mean, Sd) UCL	36.67	95% Chebyshev(Mean, Sd) UCL	43.99
97.5% Chebyshev(Mean, Sd) UCL	54.15	99% Chebyshev(Mean, Sd) UCL	74.11

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.4	Mean	14.08
Maximum	15.8	Median	14.3

SD	1.142	Std. Error of Mean	0.381
Coefficient of Variation	0.0811	Skewness	0.0244
Mean of logged Data	2.642	SD of logged Data	0.0814

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.79	95% Adjusted-CLT UCL (Chen-1995)	14.71
		95% Modified-t UCL (Johnson-1978)	14.79

Nonparametric Distribution Free UCLs

95% CLT UCL	14.7	95% Jackknife UCL	14.79
95% Standard Bootstrap UCL	14.67	95% Bootstrap-t UCL	14.81
95% Hall's Bootstrap UCL	14.71	95% Percentile Bootstrap UCL	14.63
95% BCA Bootstrap UCL	14.67		
90% Chebyshev(Mean, Sd) UCL	15.22	95% Chebyshev(Mean, Sd) UCL	15.74
97.5% Chebyshev(Mean, Sd) UCL	16.46	99% Chebyshev(Mean, Sd) UCL	17.87

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.9	Mean	20.41
Maximum	63.4	Median	15.1
SD	16.63	Std. Error of Mean	5.542
Coefficient of Variation	0.815	Skewness	2.681
Mean of logged Data	2.842	SD of logged Data	0.55

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.72	95% Adjusted-CLT UCL (Chen-1995)	34.82
		95% Modified-t UCL (Johnson-1978)	31.54

Nonparametric Distribution Free UCLs

95% CLT UCL	29.53	95% Jackknife UCL	30.72
95% Standard Bootstrap UCL	28.97	95% Bootstrap-t UCL	66.93
95% Hall's Bootstrap UCL	73.57	95% Percentile Bootstrap UCL	31.02
95% BCA Bootstrap UCL	36.38		
90% Chebyshev(Mean, Sd) UCL	37.04	95% Chebyshev(Mean, Sd) UCL	44.57
97.5% Chebyshev(Mean, Sd) UCL	55.02	99% Chebyshev(Mean, Sd) UCL	75.56

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 44.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	44.6	Mean	49.92
Maximum	56.4	Median	47.2
SD	4.768	Std. Error of Mean	1.589
Coefficient of Variation	0.0955	Skewness	0.235
Mean of logged Data	3.906	SD of logged Data	0.095

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.88	95% Adjusted-CLT UCL (Chen-1995)	52.67
		95% Modified-t UCL (Johnson-1978)	52.9

Nonparametric Distribution Free UCLs

95% CLT UCL	52.54	95% Jackknife UCL	52.88
95% Standard Bootstrap UCL	52.43	95% Bootstrap-t UCL	53.36
95% Hall's Bootstrap UCL	51.91	95% Percentile Bootstrap UCL	52.48
95% BCA Bootstrap UCL	52.46		
90% Chebyshev(Mean, Sd) UCL	54.69	95% Chebyshev(Mean, Sd) UCL	56.85
97.5% Chebyshev(Mean, Sd) UCL	59.85	99% Chebyshev(Mean, Sd) UCL	65.74

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:01:50 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 31021078) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.843	Mean	1.333
Maximum	4.04	Median	0.975
SD	1.02	Std. Error of Mean	0.34
Coefficient of Variation	0.765	Skewness	2.942
Mean of logged Data	0.146	SD of logged Data	0.479

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.966	95% Adjusted-CLT UCL (Chen-1995)	2.249
		95% Modified-t UCL (Johnson-1978)	2.021

Nonparametric Distribution Free UCLs

95% CLT UCL	1.893	95% Jackknife UCL	1.966
95% Standard Bootstrap UCL	1.871	95% Bootstrap-t UCL	9.199
95% Hall's Bootstrap UCL	10.32	95% Percentile Bootstrap UCL	2.001
95% BCA Bootstrap UCL	2.323		
90% Chebyshev(Mean, Sd) UCL	2.353	95% Chebyshev(Mean, Sd) UCL	2.816
97.5% Chebyshev(Mean, Sd) UCL	3.457	99% Chebyshev(Mean, Sd) UCL	4.717

Suggested UCL to Use

95% Student's-t UCL	1.966	or 95% Modified-t UCL	2.021

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0

Minimum	0.462	Mean	0.659
Maximum	1.13	Median	0.53
SD	0.234	Std. Error of Mean	0.0782
Coefficient of Variation	0.356	Skewness	1.283
Mean of logged Data	-0.465	SD of logged Data	0.319

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.805	95% Adjusted-CLT UCL (Chen-1995)	0.824
		95% Modified-t UCL (Johnson-1978)	0.81

Nonparametric Distribution Free UCLs

95% CLT UCL	0.788	95% Jackknife UCL	0.805
95% Standard Bootstrap UCL	0.775	95% Bootstrap-t UCL	0.904
95% Hall's Bootstrap UCL	0.769	95% Percentile Bootstrap UCL	0.795
95% BCA Bootstrap UCL	0.819		
90% Chebyshev(Mean, Sd) UCL	0.894	95% Chebyshev(Mean, Sd) UCL	1
97.5% Chebyshev(Mean, Sd) UCL	1.147	99% Chebyshev(Mean, Sd) UCL	1.437

Suggested UCL to Use

95% Student's-t UCL	0.805	or 95% Modified-t UCL	0.81

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.02	Mean	2.209
Maximum	2.81	Median	2.11
SD	0.242	Std. Error of Mean	0.0806
Coefficient of Variation	0.109	Skewness	2.353
Mean of logged Data	0.788	SD of logged Data	0.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.359	95% Adjusted-CLT UCL (Chen-1995)	2.409
		95% Modified-t UCL (Johnson-1978)	2.369

Nonparametric Distribution Free UCLs

95% CLT UCL	2.341	95% Jackknife UCL	2.359
95% Standard Bootstrap UCL	2.335	95% Bootstrap-t UCL	2.812
95% Hall's Bootstrap UCL	3.117	95% Percentile Bootstrap UCL	2.351
95% BCA Bootstrap UCL	2.421		
90% Chebyshev(Mean, Sd) UCL	2.451	95% Chebyshev(Mean, Sd) UCL	2.56
97.5% Chebyshev(Mean, Sd) UCL	2.712	99% Chebyshev(Mean, Sd) UCL	3.011

Suggested UCL to Use

95% Student's-t UCL	2.359	or 95% Modified-t UCL	2.369

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	10.92
Maximum	23.5	Median	8.35
SD	9.097	Std. Error of Mean	3.032
Coefficient of Variation	0.833	Skewness	0.355
Mean of logged Data	1.959	SD of logged Data	1.063

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.56	95% Adjusted-CLT UCL (Chen-1995)	16.29
		95% Modified-t UCL (Johnson-1978)	16.62

Nonparametric Distribution Free UCLs

95% CLT UCL	15.91	95% Jackknife UCL	16.56
95% Standard Bootstrap UCL	15.74	95% Bootstrap-t UCL	17.21
95% Hall's Bootstrap UCL	14.85	95% Percentile Bootstrap UCL	15.78
95% BCA Bootstrap UCL	15.87		
90% Chebyshev(Mean, Sd) UCL	20.02	95% Chebyshev(Mean, Sd) UCL	24.14
97.5% Chebyshev(Mean, Sd) UCL	29.86	99% Chebyshev(Mean, Sd) UCL	41.09

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	12.61
Maximum	28	Median	9.59
SD	10.71	Std. Error of Mean	3.571
Coefficient of Variation	0.85	Skewness	0.318
Mean of logged Data	2.058	SD of logged Data	1.131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.25	95% Adjusted-CLT UCL (Chen-1995)	18.89
		95% Modified-t UCL (Johnson-1978)	19.31

Nonparametric Distribution Free UCLs

95% CLT UCL	18.48	95% Jackknife UCL	19.25
95% Standard Bootstrap UCL	17.98	95% Bootstrap-t UCL	19.95
95% Hall's Bootstrap UCL	17.09	95% Percentile Bootstrap UCL	18.1
95% BCA Bootstrap UCL	18.29		
90% Chebyshev(Mean, Sd) UCL	23.32	95% Chebyshev(Mean, Sd) UCL	28.18
97.5% Chebyshev(Mean, Sd) UCL	34.91	99% Chebyshev(Mean, Sd) UCL	48.14

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.245	Mean	18.43
Maximum	39	Median	13.8
SD	15.32	Std. Error of Mean	5.108
Coefficient of Variation	0.831	Skewness	0.283
Mean of logged Data	2.463	SD of logged Data	1.098

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.93	95% Adjusted-CLT UCL (Chen-1995)	27.34
		95% Modified-t UCL (Johnson-1978)	28.01

Nonparametric Distribution Free UCLs

95% CLT UCL	26.83	95% Jackknife UCL	27.93
95% Standard Bootstrap UCL	26.66	95% Bootstrap-t UCL	28.66
95% Hall's Bootstrap UCL	24.78	95% Percentile Bootstrap UCL	26.61
95% BCA Bootstrap UCL	26.7		
90% Chebyshev(Mean, Sd) UCL	33.75	95% Chebyshev(Mean, Sd) UCL	40.69
97.5% Chebyshev(Mean, Sd) UCL	50.32	99% Chebyshev(Mean, Sd) UCL	69.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.245	Mean	9.93
Maximum	20	Median	6.78
SD	7.262	Std. Error of Mean	2.421
Coefficient of Variation	0.731	Skewness	0.347
Mean of logged Data	2.01	SD of logged Data	0.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.43	95% Adjusted-CLT UCL (Chen-1995)	14.21
		95% Modified-t UCL (Johnson-1978)	14.48

Nonparametric Distribution Free UCLs

95% CLT UCL	13.91	95% Jackknife UCL	14.43

95% Standard Bootstrap UCL	13.67	95% Bootstrap-t UCL	14.56
95% Hall's Bootstrap UCL	12.97	95% Percentile Bootstrap UCL	13.68
95% BCA Bootstrap UCL	13.73		
90% Chebyshev(Mean, Sd) UCL	17.19	95% Chebyshev(Mean, Sd) UCL	20.48
97.5% Chebyshev(Mean, Sd) UCL	25.05	99% Chebyshev(Mean, Sd) UCL	34.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	7.398
Maximum	15	Median	5.27
SD	5.671	Std. Error of Mean	1.89
Coefficient of Variation	0.767	Skewness	0.345
Mean of logged Data	1.674	SD of logged Data	0.895

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.91	95% Adjusted-CLT UCL (Chen-1995)	10.74
		95% Modified-t UCL (Johnson-1978)	10.95

Nonparametric Distribution Free UCLs

95% CLT UCL	10.51	95% Jackknife UCL	10.91
95% Standard Bootstrap UCL	10.32	95% Bootstrap-t UCL	11.45
95% Hall's Bootstrap UCL	9.682	95% Percentile Bootstrap UCL	10.4
95% BCA Bootstrap UCL	10.49		
90% Chebyshev(Mean, Sd) UCL	13.07	95% Chebyshev(Mean, Sd) UCL	15.64
97.5% Chebyshev(Mean, Sd) UCL	19.2	99% Chebyshev(Mean, Sd) UCL	26.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	15.24
Maximum	33.8	Median	11.7
SD	13.25	Std. Error of Mean	4.416
Coefficient of Variation	0.869	Skewness	0.347
Mean of logged Data	2.2	SD of logged Data	1.209

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.45	95% Adjusted-CLT UCL (Chen-1995)	23.04
		95% Modified-t UCL (Johnson-1978)	23.53

Nonparametric Distribution Free UCLs

95% CLT UCL	22.5	95% Jackknife UCL	23.45
95% Standard Bootstrap UCL	21.91	95% Bootstrap-t UCL	23.98
95% Hall's Bootstrap UCL	20.96	95% Percentile Bootstrap UCL	22.45
95% BCA Bootstrap UCL	23.06		
90% Chebyshev(Mean, Sd) UCL	28.48	95% Chebyshev(Mean, Sd) UCL	34.48
97.5% Chebyshev(Mean, Sd) UCL	42.81	99% Chebyshev(Mean, Sd) UCL	59.17

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.74	Mean	3.554
Maximum	4.64	Median	3.31
SD	0.607	Std. Error of Mean	0.202
Coefficient of Variation	0.171	Skewness	0.758
Mean of logged Data	1.256	SD of logged Data	0.166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.931	95% Adjusted-CLT UCL (Chen-1995)	3.942
		95% Modified-t UCL (Johnson-1978)	3.939

Nonparametric Distribution Free UCLs

95% CLT UCL	3.887	95% Jackknife UCL	3.931
95% Standard Bootstrap UCL	3.881	95% Bootstrap-t UCL	4.038
95% Hall's Bootstrap UCL	4.017	95% Percentile Bootstrap UCL	3.882
95% BCA Bootstrap UCL	3.913		
90% Chebyshev(Mean, Sd) UCL	4.162	95% Chebyshev(Mean, Sd) UCL	4.437
97.5% Chebyshev(Mean, Sd) UCL	4.819	99% Chebyshev(Mean, Sd) UCL	5.569

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	16.09
Maximum	35.7	Median	14
SD	14.01	Std. Error of Mean	4.67
Coefficient of Variation	0.87	Skewness	0.371
Mean of logged Data	2.243	SD of logged Data	1.232

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.78	95% Adjusted-CLT UCL (Chen-1995)	24.39
		95% Modified-t UCL (Johnson-1978)	24.87

Nonparametric Distribution Free UCLs

95% CLT UCL	23.78	95% Jackknife UCL	24.78
95% Standard Bootstrap UCL	23.31	95% Bootstrap-t UCL	25.01
95% Hall's Bootstrap UCL	22.63	95% Percentile Bootstrap UCL	23.58
95% BCA Bootstrap UCL	23.95		
90% Chebyshev(Mean, Sd) UCL	30.1	95% Chebyshev(Mean, Sd) UCL	36.45
97.5% Chebyshev(Mean, Sd) UCL	45.26	99% Chebyshev(Mean, Sd) UCL	62.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.245	Mean	10.59
Maximum	22.9	Median	6.76
SD	8.078	Std. Error of Mean	2.693
Coefficient of Variation	0.763	Skewness	0.444
Mean of logged Data	2.051	SD of logged Data	0.86

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.59	95% Adjusted-CLT UCL (Chen-1995)	15.44
		95% Modified-t UCL (Johnson-1978)	15.66

Nonparametric Distribution Free UCLs

95% CLT UCL	15.02	95% Jackknife UCL	15.59
95% Standard Bootstrap UCL	14.72	95% Bootstrap-t UCL	16.37
95% Hall's Bootstrap UCL	14.04	95% Percentile Bootstrap UCL	14.88
95% BCA Bootstrap UCL	15.03		
90% Chebyshev(Mean, Sd) UCL	18.67	95% Chebyshev(Mean, Sd) UCL	22.32
97.5% Chebyshev(Mean, Sd) UCL	27.4	99% Chebyshev(Mean, Sd) UCL	37.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.975	Mean	1.876
Maximum	4.35	Median	1.66
SD	0.982	Std. Error of Mean	0.327
Coefficient of Variation	0.524	Skewness	2.384
Mean of logged Data	0.542	SD of logged Data	0.413

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.485	95% Adjusted-CLT UCL (Chen-1995)	2.693
		95% Modified-t UCL (Johnson-1978)	2.528

Nonparametric Distribution Free UCLs

95% CLT UCL	2.415	95% Jackknife UCL	2.485
95% Standard Bootstrap UCL	2.382	95% Bootstrap-t UCL	3.257
95% Hall's Bootstrap UCL	4.838	95% Percentile Bootstrap UCL	2.469
95% BCA Bootstrap UCL	2.79		
90% Chebyshev(Mean, Sd) UCL	2.858	95% Chebyshev(Mean, Sd) UCL	3.303
97.5% Chebyshev(Mean, Sd) UCL	3.921	99% Chebyshev(Mean, Sd) UCL	5.134

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.21	Mean	8.934
Maximum	20	Median	6.63
SD	7.006	Std. Error of Mean	2.335
Coefficient of Variation	0.784	Skewness	0.833
Mean of logged Data	1.912	SD of logged Data	0.787

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	13.47
		95% Modified-t UCL (Johnson-1978)	13.39

Nonparametric Distribution Free UCLs

95% CLT UCL	12.78	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	12.56	95% Bootstrap-t UCL	14.71
95% Hall's Bootstrap UCL	12.28	95% Percentile Bootstrap UCL	12.65
95% BCA Bootstrap UCL	13.29		
90% Chebyshev(Mean, Sd) UCL	15.94	95% Chebyshev(Mean, Sd) UCL	19.11
97.5% Chebyshev(Mean, Sd) UCL	23.52	99% Chebyshev(Mean, Sd) UCL	32.17

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.245	Mean	15.16
Maximum	33.1	Median	12.9
SD	12.18	Std. Error of Mean	4.06
Coefficient of Variation	0.804	Skewness	0.406
Mean of logged Data	2.333	SD of logged Data	0.998

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.71	95% Adjusted-CLT UCL (Chen-1995)	22.42
		95% Modified-t UCL (Johnson-1978)	22.8

Nonparametric Distribution Free UCLs

95% CLT UCL	21.84	95% Jackknife UCL	22.71
95% Standard Bootstrap UCL	21.46	95% Bootstrap-t UCL	24.18
95% Hall's Bootstrap UCL	20.58	95% Percentile Bootstrap UCL	21.66
95% BCA Bootstrap UCL	21.57		
90% Chebyshev(Mean, Sd) UCL	27.34	95% Chebyshev(Mean, Sd) UCL	32.86
97.5% Chebyshev(Mean, Sd) UCL	40.51	99% Chebyshev(Mean, Sd) UCL	55.56

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	14.4	Mean	33.2
Maximum	71.7	Median	35.7
SD	18.39	Std. Error of Mean	6.132
Coefficient of Variation	0.554	Skewness	1.023
Mean of logged Data	3.365	SD of logged Data	0.564

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.6	95% Adjusted-CLT UCL (Chen-1995)	45.52
		95% Modified-t UCL (Johnson-1978)	44.95

Nonparametric Distribution Free UCLs

95% CLT UCL	43.29	95% Jackknife UCL	44.6
95% Standard Bootstrap UCL	42.74	95% Bootstrap-t UCL	47.41
95% Hall's Bootstrap UCL	49.89	95% Percentile Bootstrap UCL	43.32
95% BCA Bootstrap UCL	45.37		
90% Chebyshev(Mean, Sd) UCL	51.59	95% Chebyshev(Mean, Sd) UCL	59.93
97.5% Chebyshev(Mean, Sd) UCL	71.49	99% Chebyshev(Mean, Sd) UCL	94.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	62.9	Mean	66.61
Maximum	72.3	Median	64.7
SD	3.971	Std. Error of Mean	1.324
Coefficient of Variation	0.0596	Skewness	0.571
Mean of logged Data	4.197	SD of logged Data	0.0589

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	69.07	95% Adjusted-CLT UCL (Chen-1995)	69.06
		95% Modified-t UCL (Johnson-1978)	69.11

Nonparametric Distribution Free UCLs

95% CLT UCL	68.79	95% Jackknife UCL	69.07
95% Standard Bootstrap UCL	68.69	95% Bootstrap-t UCL	69.62
95% Hall's Bootstrap UCL	68.33	95% Percentile Bootstrap UCL	68.84
95% BCA Bootstrap UCL	68.96		
90% Chebyshev(Mean, Sd) UCL	70.58	95% Chebyshev(Mean, Sd) UCL	72.38
97.5% Chebyshev(Mean, Sd) UCL	74.88	99% Chebyshev(Mean, Sd) UCL	79.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:03:47 AM
From File	Table 1. Parcel Analytical Results (APN31021080) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.75	Mean	1.989
Maximum	2.15	Median	1.97
SD	0.123	Std. Error of Mean	0.0411
Coefficient of Variation	0.062	Skewness	-0.529
Mean of logged Data	0.686	SD of logged Data	0.063

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.066	95% Adjusted-CLT UCL (Chen-1995)	2.049
		95% Modified-t UCL (Johnson-1978)	2.065

Nonparametric Distribution Free UCLs

95% CLT UCL	2.057	95% Jackknife UCL	2.066
95% Standard Bootstrap UCL	2.054	95% Bootstrap-t UCL	2.061
95% Hall's Bootstrap UCL	2.053	95% Percentile Bootstrap UCL	2.052
95% BCA Bootstrap UCL	2.049		
90% Chebyshev(Mean, Sd) UCL	2.113	95% Chebyshev(Mean, Sd) UCL	2.169
97.5% Chebyshev(Mean, Sd) UCL	2.246	99% Chebyshev(Mean, Sd) UCL	2.398

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.83	Mean	1.966
Maximum	2.125	Median	1.96
SD	0.0973	Std. Error of Mean	0.0324
Coefficient of Variation	0.0495	Skewness	0.456
Mean of logged Data	0.675	SD of logged Data	0.0491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.026	95% Adjusted-CLT UCL (Chen-1995)	2.025
		95% Modified-t UCL (Johnson-1978)	2.027

Nonparametric Distribution Free UCLs

95% CLT UCL	2.019	95% Jackknife UCL	2.026
95% Standard Bootstrap UCL	2.017	95% Bootstrap-t UCL	2.043
95% Hall's Bootstrap UCL	2.071	95% Percentile Bootstrap UCL	2.019
95% BCA Bootstrap UCL	2.019		
90% Chebyshev(Mean, Sd) UCL	2.063	95% Chebyshev(Mean, Sd) UCL	2.107
97.5% Chebyshev(Mean, Sd) UCL	2.169	99% Chebyshev(Mean, Sd) UCL	2.289

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.63	Mean	3.046
Maximum	4.06	Median	2.98
SD	0.402	Std. Error of Mean	0.134
Coefficient of Variation	0.132	Skewness	2.355
Mean of logged Data	1.107	SD of logged Data	0.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.295	95% Adjusted-CLT UCL (Chen-1995)	3.379
		95% Modified-t UCL (Johnson-1978)	3.313

Nonparametric Distribution Free UCLs

95% CLT UCL	3.267	95% Jackknife UCL	3.295
95% Standard Bootstrap UCL	3.253	95% Bootstrap-t UCL	3.56
95% Hall's Bootstrap UCL	4.313	95% Percentile Bootstrap UCL	3.281
95% BCA Bootstrap UCL	3.338		
90% Chebyshev(Mean, Sd) UCL	3.448	95% Chebyshev(Mean, Sd) UCL	3.63
97.5% Chebyshev(Mean, Sd) UCL	3.883	99% Chebyshev(Mean, Sd) UCL	4.38

Suggested UCL to Use

95% Student's-t UCL	3.295	or 95% Modified-t UCL	3.313

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.45	Mean	3.034
Maximum	3.31	Median	3.03
SD	0.255	Std. Error of Mean	0.085
Coefficient of Variation	0.0841	Skewness	-1.529
Mean of logged Data	1.106	SD of logged Data	0.0892

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.192	95% Adjusted-CLT UCL (Chen-1995)	3.127
		95% Modified-t UCL (Johnson-1978)	3.185

Nonparametric Distribution Free UCLs

95% CLT UCL	3.174	95% Jackknife UCL	3.192
95% Standard Bootstrap UCL	3.168	95% Bootstrap-t UCL	3.154
95% Hall's Bootstrap UCL	3.147	95% Percentile Bootstrap UCL	3.156
95% BCA Bootstrap UCL	3.133		
90% Chebyshev(Mean, Sd) UCL	3.289	95% Chebyshev(Mean, Sd) UCL	3.404
97.5% Chebyshev(Mean, Sd) UCL	3.565	99% Chebyshev(Mean, Sd) UCL	3.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.925	Mean	2.235
Maximum	3.18	Median	2.1
SD	0.409	Std. Error of Mean	0.136
Coefficient of Variation	0.183	Skewness	1.806
Mean of logged Data	0.791	SD of logged Data	0.166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.488	95% Adjusted-CLT UCL (Chen-1995)	2.547
		95% Modified-t UCL (Johnson-1978)	2.502

Nonparametric Distribution Free UCLs

95% CLT UCL	2.459	95% Jackknife UCL	2.488
95% Standard Bootstrap UCL	2.442	95% Bootstrap-t UCL	2.717
95% Hall's Bootstrap UCL	2.718	95% Percentile Bootstrap UCL	2.464
95% BCA Bootstrap UCL	2.553		
90% Chebyshev(Mean, Sd) UCL	2.644	95% Chebyshev(Mean, Sd) UCL	2.829
97.5% Chebyshev(Mean, Sd) UCL	3.086	99% Chebyshev(Mean, Sd) UCL	3.591

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	1.9	Mean	2.407
Maximum	3.78	Median	1.985
SD	0.7	Std. Error of Mean	0.233
Coefficient of Variation	0.291	Skewness	1.254
Mean of logged Data	0.845	SD of logged Data	0.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.841	95% Adjusted-CLT UCL (Chen-1995)	2.895
		95% Modified-t UCL (Johnson-1978)	2.857

Nonparametric Distribution Free UCLs

95% CLT UCL	2.791	95% Jackknife UCL	2.841
95% Standard Bootstrap UCL	2.772	95% Bootstrap-t UCL	3.183
95% Hall's Bootstrap UCL	2.774	95% Percentile Bootstrap UCL	2.804
95% BCA Bootstrap UCL	2.849		
90% Chebyshev(Mean, Sd) UCL	3.107	95% Chebyshev(Mean, Sd) UCL	3.424
97.5% Chebyshev(Mean, Sd) UCL	3.864	99% Chebyshev(Mean, Sd) UCL	4.729

Suggested UCL to Use

95% Student's-t UCL	2.841	or 95% Modified-t UCL	2.857

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.16	Mean	3.002
Maximum	3.31	Median	3.03
SD	0.342	Std. Error of Mean	0.114
Coefficient of Variation	0.114	Skewness	-2.158
Mean of logged Data	1.092	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.213	95% Adjusted-CLT UCL (Chen-1995)	3.101
		95% Modified-t UCL (Johnson-1978)	3.2

Nonparametric Distribution Free UCLs

95% CLT UCL	3.189	95% Jackknife UCL	3.213
95% Standard Bootstrap UCL	3.177	95% Bootstrap-t UCL	3.146
95% Hall's Bootstrap UCL	3.13	95% Percentile Bootstrap UCL	3.156
95% BCA Bootstrap UCL	3.127		
90% Chebyshev(Mean, Sd) UCL	3.343	95% Chebyshev(Mean, Sd) UCL	3.498
97.5% Chebyshev(Mean, Sd) UCL	3.713	99% Chebyshev(Mean, Sd) UCL	4.135

Suggested UCL to Use

95% Student's-t UCL	3.213	or 95% Modified-t UCL	3.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.35	Mean	2.963
Maximum	3.29	Median	3.02
SD	0.277	Std. Error of Mean	0.0925
Coefficient of Variation	0.0936	Skewness	-1.387
Mean of logged Data	1.082	SD of logged Data	0.0996

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.135	95% Adjusted-CLT UCL (Chen-1995)	3.069
		95% Modified-t UCL (Johnson-1978)	3.128

Nonparametric Distribution Free UCLs

95% CLT UCL	3.115	95% Jackknife UCL	3.135
95% Standard Bootstrap UCL	3.103	95% Bootstrap-t UCL	3.097
95% Hall's Bootstrap UCL	3.084	95% Percentile Bootstrap UCL	3.099
95% BCA Bootstrap UCL	3.077		
90% Chebyshev(Mean, Sd) UCL	3.24	95% Chebyshev(Mean, Sd) UCL	3.366
97.5% Chebyshev(Mean, Sd) UCL	3.54	99% Chebyshev(Mean, Sd) UCL	3.883

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.545	Mean	7.85
Maximum	10.5	Median	9.53
SD	3.036	Std. Error of Mean	1.012
Coefficient of Variation	0.387	Skewness	-0.823
Mean of logged Data	1.972	SD of logged Data	0.476

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.732	95% Adjusted-CLT UCL (Chen-1995)	9.218
		95% Modified-t UCL (Johnson-1978)	9.686

Nonparametric Distribution Free UCLs

95% CLT UCL	9.515	95% Jackknife UCL	9.732
95% Standard Bootstrap UCL	9.391	95% Bootstrap-t UCL	9.309
95% Hall's Bootstrap UCL	9.04	95% Percentile Bootstrap UCL	9.292
95% BCA Bootstrap UCL	9.231		
90% Chebyshev(Mean, Sd) UCL	10.89	95% Chebyshev(Mean, Sd) UCL	12.26
97.5% Chebyshev(Mean, Sd) UCL	14.17	99% Chebyshev(Mean, Sd) UCL	17.92

Suggested UCL to Use

95% Student's-t UCL	9.732	or 95% Modified-t UCL	9.686

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.99	Mean	8.76
Maximum	15.5	Median	7.87
SD	2.645	Std. Error of Mean	0.882
Coefficient of Variation	0.302	Skewness	2.534
Mean of logged Data	2.14	SD of logged Data	0.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.4	95% Adjusted-CLT UCL (Chen-1995)	11.01
		95% Modified-t UCL (Johnson-1978)	10.52

Nonparametric Distribution Free UCLs

95% CLT UCL	10.21	95% Jackknife UCL	10.4
95% Standard Bootstrap UCL	10.11	95% Bootstrap-t UCL	14.01
95% Hall's Bootstrap UCL	16.27	95% Percentile Bootstrap UCL	10.36
95% BCA Bootstrap UCL	10.8		
90% Chebyshev(Mean, Sd) UCL	11.41	95% Chebyshev(Mean, Sd) UCL	12.6
97.5% Chebyshev(Mean, Sd) UCL	14.27	99% Chebyshev(Mean, Sd) UCL	17.53

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	26.1	Mean	31.38
Maximum	35.2	Median	32.9
SD	3.613	Std. Error of Mean	1.204
Coefficient of Variation	0.115	Skewness	-0.748
Mean of logged Data	3.44	SD of logged Data	0.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.62	95% Adjusted-CLT UCL (Chen-1995)	33.04
		95% Modified-t UCL (Johnson-1978)	33.57

Nonparametric Distribution Free UCLs

95% CLT UCL	33.36	95% Jackknife UCL	33.62
95% Standard Bootstrap UCL	33.24	95% Bootstrap-t UCL	33.3
95% Hall's Bootstrap UCL	32.93	95% Percentile Bootstrap UCL	33.12
95% BCA Bootstrap UCL	33.07		
90% Chebyshev(Mean, Sd) UCL	34.99	95% Chebyshev(Mean, Sd) UCL	36.63
97.5% Chebyshev(Mean, Sd) UCL	38.9	99% Chebyshev(Mean, Sd) UCL	43.36

Suggested UCL to Use

95% Student's-t UCL	33.62	or 95% Modified-t UCL	33.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:07:39 AM
From File	Table 1. Parcel Analytical Results (APN31021080A) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.66	Mean	0.957
Maximum	1.43	Median	0.861
SD	0.293	Std. Error of Mean	0.12
Coefficient of Variation	0.307	Skewness	0.899
Mean of logged Data	-0.0812	SD of logged Data	0.294

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.198	95% Adjusted-CLT UCL (Chen-1995)	1.201
		95% Modified-t UCL (Johnson-1978)	1.205

Nonparametric Distribution Free UCLs

95% CLT UCL	1.154	95% Jackknife UCL	1.198
95% Standard Bootstrap UCL	1.138	95% Bootstrap-t UCL	1.334
95% Hall's Bootstrap UCL	1.378	95% Percentile Bootstrap UCL	1.146
95% BCA Bootstrap UCL	1.154		
90% Chebyshev(Mean, Sd) UCL	1.316	95% Chebyshev(Mean, Sd) UCL	1.479
97.5% Chebyshev(Mean, Sd) UCL	1.705	99% Chebyshev(Mean, Sd) UCL	2.149

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0

Minimum	0.442	Mean	0.635
Maximum	0.967	Median	0.497
SD	0.289	Std. Error of Mean	0.167
Coefficient of Variation	0.454	Skewness	1.662
Mean of logged Data	-0.516	SD of logged Data	0.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.122	95% Adjusted-CLT UCL (Chen-1995)	1.08
		95% Modified-t UCL (Johnson-1978)	1.148

Nonparametric Distribution Free UCLs

95% CLT UCL	0.909	95% Jackknife UCL	1.122
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	1.135	95% Chebyshev(Mean, Sd) UCL	1.361
97.5% Chebyshev(Mean, Sd) UCL	1.676	99% Chebyshev(Mean, Sd) UCL	2.293

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	2.27	Mean	3.125
Maximum	3.98	Median	3.125

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable ANTHRACENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.96	Mean	21.96
Maximum	69.4	Median	14.65
SD	22.81	Std. Error of Mean	8.065
Coefficient of Variation	1.039	Skewness	1.51
Mean of logged Data	2.524	SD of logged Data	1.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.24	95% Adjusted-CLT UCL (Chen-1995)	39.82
		95% Modified-t UCL (Johnson-1978)	37.96

Nonparametric Distribution Free UCLs

95% CLT UCL	35.22	95% Jackknife UCL	37.24
95% Standard Bootstrap UCL	34.19	95% Bootstrap-t UCL	54.67
95% Hall's Bootstrap UCL	107.3	95% Percentile Bootstrap UCL	35.31
95% BCA Bootstrap UCL	38.57		
90% Chebyshev(Mean, Sd) UCL	46.15	95% Chebyshev(Mean, Sd) UCL	57.11
97.5% Chebyshev(Mean, Sd) UCL	72.32	99% Chebyshev(Mean, Sd) UCL	102.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.97	Mean	42.97
Maximum	172	Median	26.1
SD	55.51	Std. Error of Mean	18.5
Coefficient of Variation	1.292	Skewness	1.919
Mean of logged Data	2.907	SD of logged Data	1.544

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	77.38	95% Adjusted-CLT UCL (Chen-1995)	86.05
		95% Modified-t UCL (Johnson-1978)	79.35

Nonparametric Distribution Free UCLs

95% CLT UCL	73.4	95% Jackknife UCL	77.38
95% Standard Bootstrap UCL	72.13	95% Bootstrap-t UCL	143.5
95% Hall's Bootstrap UCL	240	95% Percentile Bootstrap UCL	74.74
95% BCA Bootstrap UCL	84.69		
90% Chebyshev(Mean, Sd) UCL	98.48	95% Chebyshev(Mean, Sd) UCL	123.6
97.5% Chebyshev(Mean, Sd) UCL	158.5	99% Chebyshev(Mean, Sd) UCL	227.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.04	Mean	62.69
Maximum	237	Median	40.3
SD	75.77	Std. Error of Mean	25.26
Coefficient of Variation	1.209	Skewness	1.828
Mean of logged Data	3.406	SD of logged Data	1.406

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	109.7	95% Adjusted-CLT UCL (Chen-1995)	120.7
		95% Modified-t UCL (Johnson-1978)	112.2

Nonparametric Distribution Free UCLs

95% CLT UCL	104.2	95% Jackknife UCL	109.7
95% Standard Bootstrap UCL	102.3	95% Bootstrap-t UCL	174.6
95% Hall's Bootstrap UCL	318.5	95% Percentile Bootstrap UCL	105.2
95% BCA Bootstrap UCL	122.1		
90% Chebyshev(Mean, Sd) UCL	138.5	95% Chebyshev(Mean, Sd) UCL	172.8
97.5% Chebyshev(Mean, Sd) UCL	220.4	99% Chebyshev(Mean, Sd) UCL	314

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.46	Mean	51.24
Maximum	193	Median	29.7
SD	62.46	Std. Error of Mean	20.82
Coefficient of Variation	1.219	Skewness	1.759
Mean of logged Data	3.104	SD of logged Data	1.554

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	89.96	95% Adjusted-CLT UCL (Chen-1995)	98.53
		95% Modified-t UCL (Johnson-1978)	91.99

Nonparametric Distribution Free UCLs

95% CLT UCL	85.49	95% Jackknife UCL	89.96
95% Standard Bootstrap UCL	83.26	95% Bootstrap-t UCL	146.7
95% Hall's Bootstrap UCL	272.1	95% Percentile Bootstrap UCL	86.35
95% BCA Bootstrap UCL	94.32		
90% Chebyshev(Mean, Sd) UCL	113.7	95% Chebyshev(Mean, Sd) UCL	142
97.5% Chebyshev(Mean, Sd) UCL	181.3	99% Chebyshev(Mean, Sd) UCL	258.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	1
Minimum	2.21	Mean	25.39
Maximum	87.2	Median	16.85
SD	27.9	Std. Error of Mean	9.863

Coefficient of Variation	1.099	Skewness	1.866
Mean of logged Data	2.675	SD of logged Data	1.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.07	95% Adjusted-CLT UCL (Chen-1995)	48.56
		95% Modified-t UCL (Johnson-1978)	45.16

Nonparametric Distribution Free UCLs

95% CLT UCL	41.61	95% Jackknife UCL	44.07
95% Standard Bootstrap UCL	40.82	95% Bootstrap-t UCL	72.2
95% Hall's Bootstrap UCL	126.5	95% Percentile Bootstrap UCL	42.07
95% BCA Bootstrap UCL	46.83		
90% Chebyshev(Mean, Sd) UCL	54.97	95% Chebyshev(Mean, Sd) UCL	68.38
97.5% Chebyshev(Mean, Sd) UCL	86.98	99% Chebyshev(Mean, Sd) UCL	123.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	27.31
Maximum	95.9	Median	19.6
SD	30.57	Std. Error of Mean	10.19
Coefficient of Variation	1.119	Skewness	1.665
Mean of logged Data	2.672	SD of logged Data	1.297

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.26	95% Adjusted-CLT UCL (Chen-1995)	50.12
		95% Modified-t UCL (Johnson-1978)	47.2

Nonparametric Distribution Free UCLs

95% CLT UCL	44.07	95% Jackknife UCL	46.26
95% Standard Bootstrap UCL	43.26	95% Bootstrap-t UCL	64.96
95% Hall's Bootstrap UCL	128.6	95% Percentile Bootstrap UCL	43.22
95% BCA Bootstrap UCL	49.14		
90% Chebyshev(Mean, Sd) UCL	57.88	95% Chebyshev(Mean, Sd) UCL	71.73
97.5% Chebyshev(Mean, Sd) UCL	90.95	99% Chebyshev(Mean, Sd) UCL	128.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	5.27	Mean	16.92
Maximum	42.7	Median	11.15
SD	14.3	Std. Error of Mean	5.84
Coefficient of Variation	0.845	Skewness	1.489
Mean of logged Data	2.56	SD of logged Data	0.785

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.69	95% Adjusted-CLT UCL (Chen-1995)	30.32
		95% Modified-t UCL (Johnson-1978)	29.28

Nonparametric Distribution Free UCLs

95% CLT UCL	26.53	95% Jackknife UCL	28.69
95% Standard Bootstrap UCL	25.82	95% Bootstrap-t UCL	59.8
95% Hall's Bootstrap UCL	85.8	95% Percentile Bootstrap UCL	25.95
95% BCA Bootstrap UCL	28.33		
90% Chebyshev(Mean, Sd) UCL	34.44	95% Chebyshev(Mean, Sd) UCL	42.38
97.5% Chebyshev(Mean, Sd) UCL	53.39	99% Chebyshev(Mean, Sd) UCL	75.03

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.82	Mean	18.23
Maximum	59.2	Median	12.2
SD	18.95	Std. Error of Mean	6.318
Coefficient of Variation	1.039	Skewness	1.534
Mean of logged Data	2.409	SD of logged Data	1.091

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.98	95% Adjusted-CLT UCL (Chen-1995)	32.08
		95% Modified-t UCL (Johnson-1978)	30.52

Nonparametric Distribution Free UCLs

95% CLT UCL	28.63	95% Jackknife UCL	29.98
95% Standard Bootstrap UCL	28.01	95% Bootstrap-t UCL	41.96
95% Hall's Bootstrap UCL	82.99	95% Percentile Bootstrap UCL	28.62
95% BCA Bootstrap UCL	31.42		
90% Chebyshev(Mean, Sd) UCL	37.19	95% Chebyshev(Mean, Sd) UCL	45.77
97.5% Chebyshev(Mean, Sd) UCL	57.69	99% Chebyshev(Mean, Sd) UCL	81.09

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.55	Mean	49.83
Maximum	188	Median	29.8
SD	60.87	Std. Error of Mean	20.29
Coefficient of Variation	1.222	Skewness	1.77
Mean of logged Data	3.088	SD of logged Data	1.535

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	87.56	95% Adjusted-CLT UCL (Chen-1995)	95.99
		95% Modified-t UCL (Johnson-1978)	89.55

Nonparametric Distribution Free UCLs

95% CLT UCL	83.2	95% Jackknife UCL	87.56
95% Standard Bootstrap UCL	81.36	95% Bootstrap-t UCL	143.4
95% Hall's Bootstrap UCL	271.5	95% Percentile Bootstrap UCL	84
95% BCA Bootstrap UCL	94.64		
90% Chebyshev(Mean, Sd) UCL	110.7	95% Chebyshev(Mean, Sd) UCL	138.3
97.5% Chebyshev(Mean, Sd) UCL	176.5	99% Chebyshev(Mean, Sd) UCL	251.7

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.652	Mean	1.897
Maximum	4.46	Median	1.67
SD	1.267	Std. Error of Mean	0.422
Coefficient of Variation	0.668	Skewness	1.202
Mean of logged Data	0.456	SD of logged Data	0.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.683	95% Adjusted-CLT UCL (Chen-1995)	2.773
		95% Modified-t UCL (Johnson-1978)	2.711

Nonparametric Distribution Free UCLs

95% CLT UCL	2.592	95% Jackknife UCL	2.683
95% Standard Bootstrap UCL	2.549	95% Bootstrap-t UCL	3.193
95% Hall's Bootstrap UCL	3.446	95% Percentile Bootstrap UCL	2.611
95% BCA Bootstrap UCL	2.741		

90% Chebyshev(Mean, Sd) UCL	3.164	95% Chebyshev(Mean, Sd) UCL	3.738
97.5% Chebyshev(Mean, Sd) UCL	4.535	99% Chebyshev(Mean, Sd) UCL	6.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3.5	Mean	8.355
Maximum	19.3	Median	5.7
SD	5.944	Std. Error of Mean	2.427
Coefficient of Variation	0.711	Skewness	1.62
Mean of logged Data	1.947	SD of logged Data	0.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.24	95% Adjusted-CLT UCL (Chen-1995)	14.06
		95% Modified-t UCL (Johnson-1978)	13.51

Nonparametric Distribution Free UCLs

95% CLT UCL	12.35	95% Jackknife UCL	13.24
95% Standard Bootstrap UCL	11.98	95% Bootstrap-t UCL	28.48
95% Hall's Bootstrap UCL	39.47	95% Percentile Bootstrap UCL	12.13
95% BCA Bootstrap UCL	13.22		
90% Chebyshev(Mean, Sd) UCL	15.63	95% Chebyshev(Mean, Sd) UCL	18.93
97.5% Chebyshev(Mean, Sd) UCL	23.51	99% Chebyshev(Mean, Sd) UCL	32.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.59	Mean	17.64
Maximum	57.7	Median	10.9
SD	18.49	Std. Error of Mean	6.163
Coefficient of Variation	1.048	Skewness	1.551
Mean of logged Data	2.373	SD of logged Data	1.089

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.1	95% Adjusted-CLT UCL (Chen-1995)	31.18
		95% Modified-t UCL (Johnson-1978)	29.63

Nonparametric Distribution Free UCLs

95% CLT UCL	27.78	95% Jackknife UCL	29.1
95% Standard Bootstrap UCL	27.22	95% Bootstrap-t UCL	42.41
95% Hall's Bootstrap UCL	80.45	95% Percentile Bootstrap UCL	27.96
95% BCA Bootstrap UCL	29.91		
90% Chebyshev(Mean, Sd) UCL	36.13	95% Chebyshev(Mean, Sd) UCL	44.5
97.5% Chebyshev(Mean, Sd) UCL	56.12	99% Chebyshev(Mean, Sd) UCL	78.96

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.7	Mean	98.88
Maximum	238	Median	72.2
SD	86.37	Std. Error of Mean	28.79
Coefficient of Variation	0.873	Skewness	0.514
Mean of logged Data	4.107	SD of logged Data	1.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	152.4	95% Adjusted-CLT UCL (Chen-1995)	151.5
		95% Modified-t UCL (Johnson-1978)	153.2

Nonparametric Distribution Free UCLs

95% CLT UCL	146.2	95% Jackknife UCL	152.4
95% Standard Bootstrap UCL	142.9	95% Bootstrap-t UCL	159.7
95% Hall's Bootstrap UCL	140.5	95% Percentile Bootstrap UCL	142.8
95% BCA Bootstrap UCL	146.5		
90% Chebyshev(Mean, Sd) UCL	185.2	95% Chebyshev(Mean, Sd) UCL	224.4
97.5% Chebyshev(Mean, Sd) UCL	278.7	99% Chebyshev(Mean, Sd) UCL	385.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.3	Mean	73.61
Maximum	157	Median	74
SD	47.92	Std. Error of Mean	15.97
Coefficient of Variation	0.651	Skewness	0.436
Mean of logged Data	4.039	SD of logged Data	0.853

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	103.3	95% Adjusted-CLT UCL (Chen-1995)	102.4
		95% Modified-t UCL (Johnson-1978)	103.7

Nonparametric Distribution Free UCLs

95% CLT UCL	99.88	95% Jackknife UCL	103.3
95% Standard Bootstrap UCL	98.05	95% Bootstrap-t UCL	109.5
95% Hall's Bootstrap UCL	107.8	95% Percentile Bootstrap UCL	99.04
95% BCA Bootstrap UCL	99.47		
90% Chebyshev(Mean, Sd) UCL	121.5	95% Chebyshev(Mean, Sd) UCL	143.2
97.5% Chebyshev(Mean, Sd) UCL	173.4	99% Chebyshev(Mean, Sd) UCL	232.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.7	Mean	132.3
Maximum	283	Median	110
SD	91.87	Std. Error of Mean	30.62
Coefficient of Variation	0.694	Skewness	0.72
Mean of logged Data	4.658	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	189.3	95% Adjusted-CLT UCL (Chen-1995)	190.6
		95% Modified-t UCL (Johnson-1978)	190.5

Nonparametric Distribution Free UCLs

95% CLT UCL	182.7	95% Jackknife UCL	189.3
95% Standard Bootstrap UCL	179.9	95% Bootstrap-t UCL	208.7
95% Hall's Bootstrap UCL	178.8	95% Percentile Bootstrap UCL	180.9
95% BCA Bootstrap UCL	187.1		
90% Chebyshev(Mean, Sd) UCL	224.2	95% Chebyshev(Mean, Sd) UCL	265.8
97.5% Chebyshev(Mean, Sd) UCL	323.6	99% Chebyshev(Mean, Sd) UCL	437

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:05:42 AM
From File	Table 1. Parcel Analytical Results (Kingman APN31021080B) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.11	Mean	4.377
Maximum	6.53	Median	4.49
SD	2.212	Std. Error of Mean	1.277
Coefficient of Variation	0.505	Skewness	-0.23
Mean of logged Data	1.375	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.106	95% Adjusted-CLT UCL (Chen-1995)	6.296
		95% Modified-t UCL (Johnson-1978)	8.078

Nonparametric Distribution Free UCLs

95% CLT UCL	6.477	95% Jackknife UCL	8.106
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	8.208	95% Chebyshev(Mean, Sd) UCL	9.944
97.5% Chebyshev(Mean, Sd) UCL	12.35	99% Chebyshev(Mean, Sd) UCL	17.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	1.64	Mean	12.19
Maximum	44.8	Median	4.7
SD	18.39	Std. Error of Mean	8.223
Coefficient of Variation	1.509	Skewness	2.143
Mean of logged Data	1.728	SD of logged Data	1.313

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.72	95% Adjusted-CLT UCL (Chen-1995)	34.14
		95% Modified-t UCL (Johnson-1978)	31.03

Nonparametric Distribution Free UCLs

95% CLT UCL	25.71	95% Jackknife UCL	29.72
95% Standard Bootstrap UCL	24.35	95% Bootstrap-t UCL	123.3
95% Hall's Bootstrap UCL	114.4	95% Percentile Bootstrap UCL	27.63
95% BCA Bootstrap UCL	28.84		
90% Chebyshev(Mean, Sd) UCL	36.86	95% Chebyshev(Mean, Sd) UCL	48.03
97.5% Chebyshev(Mean, Sd) UCL	63.54	99% Chebyshev(Mean, Sd) UCL	94.01

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3.28	Mean	16.06
Maximum	56.4	Median	6.61
SD	22.75	Std. Error of Mean	10.18
Coefficient of Variation	1.417	Skewness	2.139
Mean of logged Data	2.136	SD of logged Data	1.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.76	95% Adjusted-CLT UCL (Chen-1995)	43.2
		95% Modified-t UCL (Johnson-1978)	39.38

Nonparametric Distribution Free UCLs

95% CLT UCL	32.8	95% Jackknife UCL	37.76
95% Standard Bootstrap UCL	30.98	95% Bootstrap-t UCL	159.9
95% Hall's Bootstrap UCL	125.1	95% Percentile Bootstrap UCL	35.16
95% BCA Bootstrap UCL	37.3		
90% Chebyshev(Mean, Sd) UCL	46.59	95% Chebyshev(Mean, Sd) UCL	60.42
97.5% Chebyshev(Mean, Sd) UCL	79.61	99% Chebyshev(Mean, Sd) UCL	117.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.3	Mean	30.94
Maximum	110	Median	5.725
SD	52.73	Std. Error of Mean	26.37
Coefficient of Variation	1.705	Skewness	1.994
Mean of logged Data	2.256	SD of logged Data	1.686

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	92.99	95% Adjusted-CLT UCL (Chen-1995)	102.4
		95% Modified-t UCL (Johnson-1978)	97.37

Nonparametric Distribution Free UCLs

95% CLT UCL	74.31	95% Jackknife UCL	92.99
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	110	95% Chebyshev(Mean, Sd) UCL	145.9
97.5% Chebyshev(Mean, Sd) UCL	195.6	99% Chebyshev(Mean, Sd) UCL	293.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	3.96	Mean	11.18
Maximum	18.4	Median	11.18

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable BENZO(K)FLUORANTHENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

CHRYSENE

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	2.9	Mean	6.18
Maximum	8.25	Median	7.39
SD	2.873	Std. Error of Mean	1.659
Coefficient of Variation	0.465	Skewness	-1.559
Mean of logged Data	1.725	SD of logged Data	0.574

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.02	95% Adjusted-CLT UCL (Chen-1995)	7.313
		95% Modified-t UCL (Johnson-1978)	10.77

Nonparametric Distribution Free UCLs

95% CLT UCL	8.908	95% Jackknife UCL	11.02
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	11.16	95% Chebyshev(Mean, Sd) UCL	13.41
97.5% Chebyshev(Mean, Sd) UCL	16.54	99% Chebyshev(Mean, Sd) UCL	22.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	19.4	Mean	19.4
Maximum	19.4	Median	19.4

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable DIBENZ(A,H)ANTHRACENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

FLUORANTHENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.09	Mean	5.065
Maximum	12.3	Median	2.935
SD	4.847	Std. Error of Mean	2.423
Coefficient of Variation	0.957	Skewness	1.943
Mean of logged Data	1.347	SD of logged Data	0.796

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.77	95% Adjusted-CLT UCL (Chen-1995)	11.57
		95% Modified-t UCL (Johnson-1978)	11.16

Nonparametric Distribution Free UCLs

95% CLT UCL	9.051	95% Jackknife UCL	10.77

95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	12.33	95% Chebyshev(Mean, Sd) UCL	15.63
97.5% Chebyshev(Mean, Sd) UCL	20.2	99% Chebyshev(Mean, Sd) UCL	29.18

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	2.3	Mean	28.12
Maximum	99.5	Median	5.345
SD	47.61	Std. Error of Mean	23.8
Coefficient of Variation	1.693	Skewness	1.994
Mean of logged Data	2.194	SD of logged Data	1.653

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	84.14	95% Adjusted-CLT UCL (Chen-1995)	92.64
		95% Modified-t UCL (Johnson-1978)	88.1

Nonparametric Distribution Free UCLs

95% CLT UCL	67.28	95% Jackknife UCL	84.14
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	99.53	95% Chebyshev(Mean, Sd) UCL	131.9
97.5% Chebyshev(Mean, Sd) UCL	176.8	99% Chebyshev(Mean, Sd) UCL	265

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	1	Number of Distinct Observations	1
		Number of Missing Observations	0
Minimum	6.75	Mean	6.75
Maximum	6.75	Median	6.75

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable PHENANTHRENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

PYRENE

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	2.86	Mean	6.48
Maximum	10.1	Median	6.48

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable PYRENE was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	7.8	Mean	14.26
Maximum	35.2	Median	11.7
SD	8.546	Std. Error of Mean	2.849
Coefficient of Variation	0.599	Skewness	2.194
Mean of logged Data	2.543	SD of logged Data	0.473

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.56	95% Adjusted-CLT UCL (Chen-1995)	21.17

		95% Modified-t UCL (Johnson-1978)	19.91

Nonparametric Distribution Free UCLs

95% CLT UCL	18.95	95% Jackknife UCL	19.56
95% Standard Bootstrap UCL	18.77	95% Bootstrap-t UCL	26.34
95% Hall's Bootstrap UCL	37.72	95% Percentile Bootstrap UCL	19.28
95% BCA Bootstrap UCL	20.73		
90% Chebyshev(Mean, Sd) UCL	22.81	95% Chebyshev(Mean, Sd) UCL	26.68
97.5% Chebyshev(Mean, Sd) UCL	32.05	99% Chebyshev(Mean, Sd) UCL	42.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.78	Mean	12.39
Maximum	26.9	Median	9.77
SD	6.789	Std. Error of Mean	2.263
Coefficient of Variation	0.548	Skewness	1.552
Mean of logged Data	2.409	SD of logged Data	0.47

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.6	95% Adjusted-CLT UCL (Chen-1995)	17.37
		95% Modified-t UCL (Johnson-1978)	16.8

Nonparametric Distribution Free UCLs

95% CLT UCL	16.11	95% Jackknife UCL	16.6
95% Standard Bootstrap UCL	15.88	95% Bootstrap-t UCL	23.59
95% Hall's Bootstrap UCL	36.23	95% Percentile Bootstrap UCL	16.18
95% BCA Bootstrap UCL	17.39		
90% Chebyshev(Mean, Sd) UCL	19.18	95% Chebyshev(Mean, Sd) UCL	22.26
97.5% Chebyshev(Mean, Sd) UCL	26.53	99% Chebyshev(Mean, Sd) UCL	34.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	27.6	Mean	39.38
Maximum	47.9	Median	41.2
SD	6.968	Std. Error of Mean	2.323
Coefficient of Variation	0.177	Skewness	-0.439
Mean of logged Data	3.658	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.7	95% Adjusted-CLT UCL (Chen-1995)	42.84
		95% Modified-t UCL (Johnson-1978)	43.64

Nonparametric Distribution Free UCLs

95% CLT UCL	43.2	95% Jackknife UCL	43.7
95% Standard Bootstrap UCL	43.01	95% Bootstrap-t UCL	43.44
95% Hall's Bootstrap UCL	42.68	95% Percentile Bootstrap UCL	42.91
95% BCA Bootstrap UCL	42.58		
90% Chebyshev(Mean, Sd) UCL	46.35	95% Chebyshev(Mean, Sd) UCL	49.5
97.5% Chebyshev(Mean, Sd) UCL	53.88	99% Chebyshev(Mean, Sd) UCL	62.49

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:09:37 AM
From File	Table 1 APN31038002 - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.646	Mean	0.885
Maximum	1.05	Median	0.975
SD	0.144	Std. Error of Mean	0.048
Coefficient of Variation	0.163	Skewness	-0.543
Mean of logged Data	-0.135	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.974	95% Adjusted-CLT UCL (Chen-1995)	0.955
		95% Modified-t UCL (Johnson-1978)	0.973

Nonparametric Distribution Free UCLs

95% CLT UCL	0.964	95% Jackknife UCL	0.974
95% Standard Bootstrap UCL	0.96	95% Bootstrap-t UCL	0.964
95% Hall's Bootstrap UCL	0.947	95% Percentile Bootstrap UCL	0.957
95% BCA Bootstrap UCL	0.949		
90% Chebyshev(Mean, Sd) UCL	1.029	95% Chebyshev(Mean, Sd) UCL	1.094
97.5% Chebyshev(Mean, Sd) UCL	1.185	99% Chebyshev(Mean, Sd) UCL	1.362

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.505	Mean	0.528
Maximum	0.57	Median	0.525
SD	0.0175	Std. Error of Mean	0.00583
Coefficient of Variation	0.0331	Skewness	1.752
Mean of logged Data	-0.639	SD of logged Data	0.0324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.539	95% Adjusted-CLT UCL (Chen-1995)	0.542
		95% Modified-t UCL (Johnson-1978)	0.54

Nonparametric Distribution Free UCLs

95% CLT UCL	0.538	95% Jackknife UCL	0.539
95% Standard Bootstrap UCL	0.537	95% Bootstrap-t UCL	0.545
95% Hall's Bootstrap UCL	0.589	95% Percentile Bootstrap UCL	0.537
95% BCA Bootstrap UCL	0.542		
90% Chebyshev(Mean, Sd) UCL	0.546	95% Chebyshev(Mean, Sd) UCL	0.554
97.5% Chebyshev(Mean, Sd) UCL	0.565	99% Chebyshev(Mean, Sd) UCL	0.586

Suggested UCL to Use

95% Student's-t UCL	0.539	or 95% Modified-t UCL	0.54

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.045	Mean	2.214
Maximum	2.92	Median	2.135
SD	0.267	Std. Error of Mean	0.089
Coefficient of Variation	0.121	Skewness	2.894
Mean of logged Data	0.789	SD of logged Data	0.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.38	95% Adjusted-CLT UCL (Chen-1995)	2.453
		95% Modified-t UCL (Johnson-1978)	2.394

Nonparametric Distribution Free UCLs

95% CLT UCL	2.361	95% Jackknife UCL	2.38
95% Standard Bootstrap UCL	2.348	95% Bootstrap-t UCL	3.274
95% Hall's Bootstrap UCL	3.298	95% Percentile Bootstrap UCL	2.389
95% BCA Bootstrap UCL	2.466		
90% Chebyshev(Mean, Sd) UCL	2.481	95% Chebyshev(Mean, Sd) UCL	2.602
97.5% Chebyshev(Mean, Sd) UCL	2.77	99% Chebyshev(Mean, Sd) UCL	3.1

Suggested UCL to Use

95% Student's-t UCL	2.38	or 95% Modified-t UCL	2.394

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	5.754
Maximum	23.6	Median	3.28
SD	6.921	Std. Error of Mean	2.307
Coefficient of Variation	1.203	Skewness	2.661
Mean of logged Data	1.381	SD of logged Data	0.794

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.04	95% Adjusted-CLT UCL (Chen-1995)	11.74
		95% Modified-t UCL (Johnson-1978)	10.39

Nonparametric Distribution Free UCLs

95% CLT UCL	9.549	95% Jackknife UCL	10.04
95% Standard Bootstrap UCL	9.34	95% Bootstrap-t UCL	26.29
95% Hall's Bootstrap UCL	26.75	95% Percentile Bootstrap UCL	9.846
95% BCA Bootstrap UCL	12.33		
90% Chebyshev(Mean, Sd) UCL	12.68	95% Chebyshev(Mean, Sd) UCL	15.81
97.5% Chebyshev(Mean, Sd) UCL	20.16	99% Chebyshev(Mean, Sd) UCL	28.71

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	7.62
Maximum	32.6	Median	3.36
SD	9.815	Std. Error of Mean	3.272
Coefficient of Variation	1.288	Skewness	2.54
Mean of logged Data	1.564	SD of logged Data	0.923

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.7	95% Adjusted-CLT UCL (Chen-1995)	15.96
		95% Modified-t UCL (Johnson-1978)	14.17

Nonparametric Distribution Free UCLs

95% CLT UCL	13	95% Jackknife UCL	13.7
95% Standard Bootstrap UCL	12.71	95% Bootstrap-t UCL	30.15
95% Hall's Bootstrap UCL	34.18	95% Percentile Bootstrap UCL	13.38
95% BCA Bootstrap UCL	16.31		
90% Chebyshev(Mean, Sd) UCL	17.44	95% Chebyshev(Mean, Sd) UCL	21.88
97.5% Chebyshev(Mean, Sd) UCL	28.05	99% Chebyshev(Mean, Sd) UCL	40.17

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.245	Mean	10.72
Maximum	44.1	Median	7.3

SD	13.02	Std. Error of Mean	4.339
Coefficient of Variation	1.215	Skewness	2.596
Mean of logged Data	1.963	SD of logged Data	0.867

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.78	95% Adjusted-CLT UCL (Chen-1995)	21.87
		95% Modified-t UCL (Johnson-1978)	19.41

Nonparametric Distribution Free UCLs

95% CLT UCL	17.85	95% Jackknife UCL	18.78
95% Standard Bootstrap UCL	17.34	95% Bootstrap-t UCL	36.89
95% Hall's Bootstrap UCL	47.83	95% Percentile Bootstrap UCL	18.49
95% BCA Bootstrap UCL	22.14		
90% Chebyshev(Mean, Sd) UCL	23.73	95% Chebyshev(Mean, Sd) UCL	29.63
97.5% Chebyshev(Mean, Sd) UCL	37.81	99% Chebyshev(Mean, Sd) UCL	53.89

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.31	Mean	6.643
Maximum	25.3	Median	3.91
SD	7.249	Std. Error of Mean	2.416
Coefficient of Variation	1.091	Skewness	2.647
Mean of logged Data	1.589	SD of logged Data	0.722

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.14	95% Adjusted-CLT UCL (Chen-1995)	12.9
		95% Modified-t UCL (Johnson-1978)	11.49

Nonparametric Distribution Free UCLs

95% CLT UCL	10.62	95% Jackknife UCL	11.14
95% Standard Bootstrap UCL	10.32	95% Bootstrap-t UCL	31.08
95% Hall's Bootstrap UCL	29.8	95% Percentile Bootstrap UCL	11.09
95% BCA Bootstrap UCL	13.42		
90% Chebyshev(Mean, Sd) UCL	13.89	95% Chebyshev(Mean, Sd) UCL	17.18
97.5% Chebyshev(Mean, Sd) UCL	21.73	99% Chebyshev(Mean, Sd) UCL	30.68

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	4.5
Maximum	16.6	Median	2.76
SD	4.672	Std. Error of Mean	1.557
Coefficient of Variation	1.038	Skewness	2.699
Mean of logged Data	1.233	SD of logged Data	0.677

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.396	95% Adjusted-CLT UCL (Chen-1995)	8.558
		95% Modified-t UCL (Johnson-1978)	7.629

Nonparametric Distribution Free UCLs

95% CLT UCL	7.061	95% Jackknife UCL	7.396
95% Standard Bootstrap UCL	6.822	95% Bootstrap-t UCL	18.81
95% Hall's Bootstrap UCL	17.65	95% Percentile Bootstrap UCL	7.341
95% BCA Bootstrap UCL	8.996		
90% Chebyshev(Mean, Sd) UCL	9.172	95% Chebyshev(Mean, Sd) UCL	11.29
97.5% Chebyshev(Mean, Sd) UCL	14.22	99% Chebyshev(Mean, Sd) UCL	19.99

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	8.079
Maximum	33.5	Median	5.77
SD	9.999	Std. Error of Mean	3.333
Coefficient of Variation	1.238	Skewness	2.518
Mean of logged Data	1.638	SD of logged Data	0.929

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.28	95% Adjusted-CLT UCL (Chen-1995)	16.55
		95% Modified-t UCL (Johnson-1978)	14.74

Nonparametric Distribution Free UCLs

95% CLT UCL	13.56	95% Jackknife UCL	14.28
95% Standard Bootstrap UCL	13.29	95% Bootstrap-t UCL	27.87
95% Hall's Bootstrap UCL	36.83	95% Percentile Bootstrap UCL	13.94
95% BCA Bootstrap UCL	17.49		
90% Chebyshev(Mean, Sd) UCL	18.08	95% Chebyshev(Mean, Sd) UCL	22.61
97.5% Chebyshev(Mean, Sd) UCL	28.89	99% Chebyshev(Mean, Sd) UCL	41.24

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.145	Mean	3.624
Maximum	6.44	Median	3.285
SD	1.057	Std. Error of Mean	0.352
Coefficient of Variation	0.292	Skewness	2.984
Mean of logged Data	1.26	SD of logged Data	0.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.279	95% Adjusted-CLT UCL (Chen-1995)	4.578
		95% Modified-t UCL (Johnson-1978)	4.338

Nonparametric Distribution Free UCLs

95% CLT UCL	4.204	95% Jackknife UCL	4.279
95% Standard Bootstrap UCL	4.182	95% Bootstrap-t UCL	16.52
95% Hall's Bootstrap UCL	11.39	95% Percentile Bootstrap UCL	4.323
95% BCA Bootstrap UCL	4.672		
90% Chebyshev(Mean, Sd) UCL	4.681	95% Chebyshev(Mean, Sd) UCL	5.16
97.5% Chebyshev(Mean, Sd) UCL	5.825	99% Chebyshev(Mean, Sd) UCL	7.131

Suggested UCL to Use

95% Student's-t UCL	4.279	or 95% Modified-t UCL	4.338

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	9.11
Maximum	39.1	Median	4.74
SD	11.77	Std. Error of Mean	3.923
Coefficient of Variation	1.292	Skewness	2.536
Mean of logged Data	1.712	SD of logged Data	0.981

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.41	95% Adjusted-CLT UCL (Chen-1995)	19.11
		95% Modified-t UCL (Johnson-1978)	16.96

Nonparametric Distribution Free UCLs

95% CLT UCL	15.56	95% Jackknife UCL	16.41
95% Standard Bootstrap UCL	15.18	95% Bootstrap-t UCL	32.5
95% Hall's Bootstrap UCL	40.71	95% Percentile Bootstrap UCL	16.32

95% BCA Bootstrap UCL	20.39		
90% Chebyshev(Mean, Sd) UCL	20.88	95% Chebyshev(Mean, Sd) UCL	26.21
97.5% Chebyshev(Mean, Sd) UCL	33.61	99% Chebyshev(Mean, Sd) UCL	48.15

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.69	Mean	7.13
Maximum	28.1	Median	4.27
SD	8.114	Std. Error of Mean	2.705
Coefficient of Variation	1.138	Skewness	2.686
Mean of logged Data	1.641	SD of logged Data	0.735

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.16	95% Adjusted-CLT UCL (Chen-1995)	14.17
		95% Modified-t UCL (Johnson-1978)	12.56

Nonparametric Distribution Free UCLs

95% CLT UCL	11.58	95% Jackknife UCL	12.16
95% Standard Bootstrap UCL	11.28	95% Bootstrap-t UCL	36.71
95% Hall's Bootstrap UCL	33.38	95% Percentile Bootstrap UCL	12
95% BCA Bootstrap UCL	14.92		
90% Chebyshev(Mean, Sd) UCL	15.24	95% Chebyshev(Mean, Sd) UCL	18.92
97.5% Chebyshev(Mean, Sd) UCL	24.02	99% Chebyshev(Mean, Sd) UCL	34.04

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.92

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.975	Mean	1.141
Maximum	1.57	Median	1
SD	0.208	Std. Error of Mean	0.0693
Coefficient of Variation	0.182	Skewness	1.236
Mean of logged Data	0.118	SD of logged Data	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.269	95% Adjusted-CLT UCL (Chen-1995)	1.285
		95% Modified-t UCL (Johnson-1978)	1.274

Nonparametric Distribution Free UCLs

95% CLT UCL	1.255	95% Jackknife UCL	1.269
95% Standard Bootstrap UCL	1.25	95% Bootstrap-t UCL	1.341
95% Hall's Bootstrap UCL	1.301	95% Percentile Bootstrap UCL	1.251
95% BCA Bootstrap UCL	1.281		
90% Chebyshev(Mean, Sd) UCL	1.349	95% Chebyshev(Mean, Sd) UCL	1.443
97.5% Chebyshev(Mean, Sd) UCL	1.574	99% Chebyshev(Mean, Sd) UCL	1.83

Suggested UCL to Use

95% Student's-t UCL	1.269	or 95% Modified-t UCL	1.274

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.12	Mean	4.943
Maximum	16.5	Median	3.26
SD	4.38	Std. Error of Mean	1.46
Coefficient of Variation	0.886	Skewness	2.888
Mean of logged Data	1.413	SD of logged Data	0.545

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.658	95% Adjusted-CLT UCL (Chen-1995)	8.846
		95% Modified-t UCL (Johnson-1978)	7.892

Nonparametric Distribution Free UCLs

95% CLT UCL	7.344	95% Jackknife UCL	7.658
95% Standard Bootstrap UCL	7.144	95% Bootstrap-t UCL	46.08
95% Hall's Bootstrap UCL	37.8	95% Percentile Bootstrap UCL	7.798
95% BCA Bootstrap UCL	9.168		
90% Chebyshev(Mean, Sd) UCL	9.323	95% Chebyshev(Mean, Sd) UCL	11.31
97.5% Chebyshev(Mean, Sd) UCL	14.06	99% Chebyshev(Mean, Sd) UCL	19.47

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.31

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.89	Mean	9.059
Maximum	37.5	Median	4.03
SD	11.11	Std. Error of Mean	3.703
Coefficient of Variation	1.226	Skewness	2.588
Mean of logged Data	1.797	SD of logged Data	0.85

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.95	95% Adjusted-CLT UCL (Chen-1995)	18.56
		95% Modified-t UCL (Johnson-1978)	16.48

Nonparametric Distribution Free UCLs

95% CLT UCL	15.15	95% Jackknife UCL	15.95
95% Standard Bootstrap UCL	14.86	95% Bootstrap-t UCL	33.31
95% Hall's Bootstrap UCL	37.57	95% Percentile Bootstrap UCL	16.05
95% BCA Bootstrap UCL	18.97		
90% Chebyshev(Mean, Sd) UCL	20.17	95% Chebyshev(Mean, Sd) UCL	25.2
97.5% Chebyshev(Mean, Sd) UCL	32.19	99% Chebyshev(Mean, Sd) UCL	45.91

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	11.4	Mean	12.68
Maximum	14.8	Median	12
SD	1.275	Std. Error of Mean	0.425
Coefficient of Variation	0.101	Skewness	0.865
Mean of logged Data	2.536	SD of logged Data	0.0976

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.47	95% Adjusted-CLT UCL (Chen-1995)	13.51
		95% Modified-t UCL (Johnson-1978)	13.49

Nonparametric Distribution Free UCLs

95% CLT UCL	13.38	95% Jackknife UCL	13.47
95% Standard Bootstrap UCL	13.35	95% Bootstrap-t UCL	13.68
95% Hall's Bootstrap UCL	13.18	95% Percentile Bootstrap UCL	13.32
95% BCA Bootstrap UCL	13.43		
90% Chebyshev(Mean, Sd) UCL	13.95	95% Chebyshev(Mean, Sd) UCL	14.53
97.5% Chebyshev(Mean, Sd) UCL	15.33	99% Chebyshev(Mean, Sd) UCL	16.9

Suggested UCL to Use

95% Student's-t UCL	13.47	or 95% Modified-t UCL	13.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.2	Mean	17.68
Maximum	49.2	Median	11.9

SD	13.3	Std. Error of Mean	4.434
Coefficient of Variation	0.752	Skewness	2.135
Mean of logged Data	2.704	SD of logged Data	0.553

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.92	95% Adjusted-CLT UCL (Chen-1995)	28.34
		95% Modified-t UCL (Johnson-1978)	26.45

Nonparametric Distribution Free UCLs

95% CLT UCL	24.97	95% Jackknife UCL	25.92
95% Standard Bootstrap UCL	24.58	95% Bootstrap-t UCL	103.7
95% Hall's Bootstrap UCL	84.47	95% Percentile Bootstrap UCL	25.74
95% BCA Bootstrap UCL	28.21		
90% Chebyshev(Mean, Sd) UCL	30.98	95% Chebyshev(Mean, Sd) UCL	37
97.5% Chebyshev(Mean, Sd) UCL	45.37	99% Chebyshev(Mean, Sd) UCL	61.79

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	37

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.6	Mean	45.3
Maximum	54.8	Median	42.7
SD	5.304	Std. Error of Mean	1.768
Coefficient of Variation	0.117	Skewness	1.02
Mean of logged Data	3.808	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.59	95% Adjusted-CLT UCL (Chen-1995)	48.85
		95% Modified-t UCL (Johnson-1978)	48.69

Nonparametric Distribution Free UCLs

95% CLT UCL	48.21	95% Jackknife UCL	48.59
95% Standard Bootstrap UCL	48.04	95% Bootstrap-t UCL	50.42
95% Hall's Bootstrap UCL	49.46	95% Percentile Bootstrap UCL	48.04
95% BCA Bootstrap UCL	48.48		
90% Chebyshev(Mean, Sd) UCL	50.6	95% Chebyshev(Mean, Sd) UCL	53.01
97.5% Chebyshev(Mean, Sd) UCL	56.34	99% Chebyshev(Mean, Sd) UCL	62.89

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.16/11/2020 10:17:10 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404206A) - HRA _b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.752	Mean	3.396
Maximum	19.8	Median	0.848
SD	6.246	Std. Error of Mean	2.082
Coefficient of Variation	1.839	Skewness	2.842

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.499	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.388	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.267	95% Adjusted-CLT UCL (Chen-1995)	8.927
		95% Modified-t UCL (Johnson-1978)	7.596

Gamma GOF Test

A-D Test Statistic	1.584	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.752	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.342	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.289	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.746	k star (bias corrected MLE)	0.572
Theta hat (MLE)	4.549	Theta star (bias corrected MLE)	5.939
nu hat (MLE)	13.44	nu star (bias corrected)	10.29
MLE Mean (bias corrected)	3.396	MLE Sd (bias corrected)	4.491
		Approximate Chi Square Value (0.05)	4.124
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	3.342

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	8.472	95% Adjusted Gamma UCL (use when n<50)	10.46

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.705	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.308	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.285	Mean of logged Data	0.42
Maximum of Logged Data	2.986	SD of logged Data	1.109

Assuming Lognormal Distribution

95% H-UCL	11.04	90% Chebyshev (MVUE) UCL	5.506
95% Chebyshev (MVUE) UCL	6.84	97.5% Chebyshev (MVUE) UCL	8.692
99% Chebyshev (MVUE) UCL	12.33		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	6.82	95% Jackknife UCL	7.267
95% Standard Bootstrap UCL	6.671	95% Bootstrap-t UCL	57.66
95% Hall's Bootstrap UCL	50.45	95% Percentile Bootstrap UCL	7.245
95% BCA Bootstrap UCL	9.706		
90% Chebyshev(Mean, Sd) UCL	9.641	95% Chebyshev(Mean, Sd) UCL	12.47
97.5% Chebyshev(Mean, Sd) UCL	16.4	99% Chebyshev(Mean, Sd) UCL	24.11

Suggested UCL to Use

95% Hall's Bootstrap UCL	50.45

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.479	Mean	0.834
Maximum	1.86	Median	0.52
SD	0.519	Std. Error of Mean	0.173
Coefficient of Variation	0.623	Skewness	1.309

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.733	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.358	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.156	95% Adjusted-CLT UCL (Chen-1995)	1.199
		95% Modified-t UCL (Johnson-1978)	1.169

Gamma GOF Test

A-D Test Statistic	1.163	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.726	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.355	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.281	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.638	k star (bias corrected MLE)	2.5
Theta hat (MLE)	0.229	Theta star (bias corrected MLE)	0.334
nu hat (MLE)	65.49	nu star (bias corrected)	44.99
MLE Mean (bias corrected)	0.834	MLE Sd (bias corrected)	0.528
		Approximate Chi Square Value (0.05)	30.61
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	28.13

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.226	95% Adjusted Gamma UCL (use when n<50)	1.334

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.756	Shapiro Wilk Lognormal GOF Test	
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.332	Lilliefors Lognormal GOF Test	
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.736	Mean of logged Data	-0.325
Maximum of Logged Data	0.621	SD of logged Data	0.54

Assuming Lognormal Distribution

95% H-UCL	1.295	90% Chebyshev (MVUE) UCL	1.271
95% Chebyshev (MVUE) UCL	1.475	97.5% Chebyshev (MVUE) UCL	1.758
99% Chebyshev (MVUE) UCL	2.314		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	1.119	95% Jackknife UCL	1.156
95% Standard Bootstrap UCL	1.103	95% Bootstrap-t UCL	1.475
95% Hall's Bootstrap UCL	1.156	95% Percentile Bootstrap UCL	1.119
95% BCA Bootstrap UCL	1.179		
90% Chebyshev(Mean, Sd) UCL	1.353	95% Chebyshev(Mean, Sd) UCL	1.589

97.5% Chebyshev(Mean, Sd) UCL	1.915	99% Chebyshev(Mean, Sd) UCL	2.557

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.589

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.95	Mean	2.988
Maximum	7.54	Median	2.11
SD	1.832	Std. Error of Mean	0.611
Coefficient of Variation	0.613	Skewness	2.346

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.637	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.349	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.124	95% Adjusted-CLT UCL (Chen-1995)	4.503
		95% Modified-t UCL (Johnson-1978)	4.203

Gamma GOF Test

A-D Test Statistic	1.255	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.724	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.37	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.28	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	4.57	k star (bias corrected MLE)	3.121
Theta hat (MLE)	0.654	Theta star (bias corrected MLE)	0.957
nu hat (MLE)	82.25	nu star (bias corrected)	56.17
MLE Mean (bias corrected)	2.988	MLE Sd (bias corrected)	1.691
		Approximate Chi Square Value (0.05)	39.94
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	37.08

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	4.201	95% Adjusted Gamma UCL (use when n<50)	4.526

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.726	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.358	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.668	Mean of logged Data	0.981
Maximum of Logged Data	2.02	SD of logged Data	0.459

Assuming Lognormal Distribution

95% H-UCL	4.229	90% Chebyshev (MVUE) UCL	4.285
95% Chebyshev (MVUE) UCL	4.901	97.5% Chebyshev (MVUE) UCL	5.755
99% Chebyshev (MVUE) UCL	7.433		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	3.992	95% Jackknife UCL	4.124
95% Standard Bootstrap UCL	3.925	95% Bootstrap-t UCL	6.517
95% Hall's Bootstrap UCL	7.137	95% Percentile Bootstrap UCL	4.077
95% BCA Bootstrap UCL	4.476		
90% Chebyshev(Mean, Sd) UCL	4.82	95% Chebyshev(Mean, Sd) UCL	5.65
97.5% Chebyshev(Mean, Sd) UCL	6.802	99% Chebyshev(Mean, Sd) UCL	9.065

Suggested UCL to Use

95% Student's-t UCL	4.124	or 95% Modified-t UCL	4.203

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	18.97
Maximum	57.8	Median	14.1
SD	19.55	Std. Error of Mean	6.516
Coefficient of Variation	1.031	Skewness	1.101

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.855	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level	

Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.08	95% Adjusted-CLT UCL (Chen-1995)	32.24
		95% Modified-t UCL (Johnson-1978)	31.48

Gamma GOF Test

A-D Test Statistic	0.391	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.21	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.288	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.907	k star (bias corrected MLE)	0.679
Theta hat (MLE)	20.92	Theta star (bias corrected MLE)	27.96
nu hat (MLE)	16.32	nu star (bias corrected)	12.21
MLE Mean (bias corrected)	18.97	MLE Sd (bias corrected)	23.03
		Approximate Chi Square Value (0.05)	5.368
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	4.449

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	43.16	95% Adjusted Gamma UCL (use when n<50)	52.07

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.884	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.211	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.688	Mean of logged Data	2.299
Maximum of Logged Data	4.057	SD of logged Data	1.332

Assuming Lognormal Distribution

95% H-UCL	160.3	90% Chebyshev (MVUE) UCL	49.47
95% Chebyshev (MVUE) UCL	62.47	97.5% Chebyshev (MVUE) UCL	80.51
99% Chebyshev (MVUE) UCL	116		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	29.69	95% Jackknife UCL	31.08
95% Standard Bootstrap UCL	28.8	95% Bootstrap-t UCL	36.19
95% Hall's Bootstrap UCL	32.02	95% Percentile Bootstrap UCL	29.68
95% BCA Bootstrap UCL	31.49		
90% Chebyshev(Mean, Sd) UCL	38.52	95% Chebyshev(Mean, Sd) UCL	47.37
97.5% Chebyshev(Mean, Sd) UCL	59.66	99% Chebyshev(Mean, Sd) UCL	83.8

Suggested UCL to Use

95% Student's-t UCL	31.08

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	25.95
Maximum	76.1	Median	18.9
SD	26.88	Std. Error of Mean	8.962
Coefficient of Variation	1.036	Skewness	0.948

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.855	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.257	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.61	95% Adjusted-CLT UCL (Chen-1995)	43.71
		95% Modified-t UCL (Johnson-1978)	43.09

Gamma GOF Test

A-D Test Statistic	0.433	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.218	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.289	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.81	k star (bias corrected MLE)	0.614
Theta hat (MLE)	32.05	Theta star (bias corrected MLE)	42.28
nu hat (MLE)	14.57	nu star (bias corrected)	11.05
MLE Mean (bias corrected)	25.95	MLE Sd (bias corrected)	33.12
		Approximate Chi Square Value (0.05)	4.607
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	3.77

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	62.23	95% Adjusted Gamma UCL (use when n<50)	76.05

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk Lognormal GOF Test**

5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.22	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.698	Mean of logged Data	2.524
Maximum of Logged Data	4.332	SD of logged Data	1.467

Assuming Lognormal Distribution

95% H-UCL	350.7	90% Chebyshev (MVUE) UCL	75.75
95% Chebyshev (MVUE) UCL	96.43	97.5% Chebyshev (MVUE) UCL	125.1
99% Chebyshev (MVUE) UCL	181.5		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	40.69	95% Jackknife UCL	42.61
95% Standard Bootstrap UCL	40.01	95% Bootstrap-t UCL	48.74
95% Hall's Bootstrap UCL	41.05	95% Percentile Bootstrap UCL	40.06
95% BCA Bootstrap UCL	42.4		
90% Chebyshev(Mean, Sd) UCL	52.83	95% Chebyshev(Mean, Sd) UCL	65.01
97.5% Chebyshev(Mean, Sd) UCL	81.91	99% Chebyshev(Mean, Sd) UCL	115.1

Suggested UCL to Use

95% Student's-t UCL	42.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	1
Minimum	3.1	Mean	37.96
Maximum	99.1	Median	25.4
SD	35.37	Std. Error of Mean	12.51
Coefficient of Variation	0.932	Skewness	0.771

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.888	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.283	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	61.65	95% Adjusted-CLT UCL (Chen-1995)	62.17
		95% Modified-t UCL (Johnson-1978)	62.22

Gamma GOF Test

A-D Test Statistic	0.309	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.736	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.176	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.302	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.987	k star (bias corrected MLE)	0.7
Theta hat (MLE)	38.44	Theta star (bias corrected MLE)	54.19
nu hat (MLE)	15.8	nu star (bias corrected)	11.21
MLE Mean (bias corrected)	37.96	MLE Sd (bias corrected)	45.35
		Approximate Chi Square Value (0.05)	4.71
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	3.703

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	90.32	95% Adjusted Gamma UCL (use when n<50)	114.9

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.17	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.283	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.131	Mean of logged Data	3.051
Maximum of Logged Data	4.596	SD of logged Data	1.334

Assuming Lognormal Distribution

95% H-UCL	447.6	90% Chebyshev (MVUE) UCL	105.9
95% Chebyshev (MVUE) UCL	134.2	97.5% Chebyshev (MVUE) UCL	173.5
99% Chebyshev (MVUE) UCL	250.6		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	58.53	95% Jackknife UCL	61.65
95% Standard Bootstrap UCL	57.34	95% Bootstrap-t UCL	69.48
95% Hall's Bootstrap UCL	59.27	95% Percentile Bootstrap UCL	58.94
95% BCA Bootstrap UCL	60.48		
90% Chebyshev(Mean, Sd) UCL	75.47	95% Chebyshev(Mean, Sd) UCL	92.46
97.5% Chebyshev(Mean, Sd) UCL	116.1	99% Chebyshev(Mean, Sd) UCL	162.4

Suggested UCL to Use

95% Student's-t UCL	61.65

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	19.21
Maximum	57.1	Median	11.9
SD	19.49	Std. Error of Mean	6.496
Coefficient of Variation	1.014	Skewness	1.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.829	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.274	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	31.29	95% Adjusted-CLT UCL (Chen-1995)	32.47
		95% Modified-t UCL (Johnson-1978)	31.7

Gamma GOF Test

A-D Test Statistic	0.444	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.742	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.192	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.286	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.075	k star (bias corrected MLE)	0.791
Theta hat (MLE)	17.87	Theta star (bias corrected MLE)	24.29
nu hat (MLE)	19.36	nu star (bias corrected)	14.24
MLE Mean (bias corrected)	19.21	MLE Sd (bias corrected)	21.61
		Approximate Chi Square Value (0.05)	6.734
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	5.682

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	40.62	95% Adjusted Gamma UCL (use when n<50)	48.14

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.896	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.195	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.118	Mean of logged Data	2.423
Maximum of Logged Data	4.045	SD of logged Data	1.145

Assuming Lognormal Distribution

95% H-UCL	92.2	90% Chebyshev (MVUE) UCL	42.92
95% Chebyshev (MVUE) UCL	53.48	97.5% Chebyshev (MVUE) UCL	68.13
99% Chebyshev (MVUE) UCL	96.92		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	29.9	95% Jackknife UCL	31.29
95% Standard Bootstrap UCL	29.19	95% Bootstrap-t UCL	36.92
95% Hall's Bootstrap UCL	29.87	95% Percentile Bootstrap UCL	30.71
95% BCA Bootstrap UCL	31.4		
90% Chebyshev(Mean, Sd) UCL	38.7	95% Chebyshev(Mean, Sd) UCL	47.53
97.5% Chebyshev(Mean, Sd) UCL	59.78	99% Chebyshev(Mean, Sd) UCL	83.85

Suggested UCL to Use

95% Student's-t UCL	31.29

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	13.57
Maximum	42.4	Median	9.53
SD	14	Std. Error of Mean	4.668
Coefficient of Variation	1.032	Skewness	1.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.832	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.267	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.25	95% Adjusted-CLT UCL (Chen-1995)	23.33
		95% Modified-t UCL (Johnson-1978)	22.58

Gamma GOF Test

A-D Test Statistic	0.407	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.287	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.038	k star (bias corrected MLE)	0.766
Theta hat (MLE)	13.08	Theta star (bias corrected MLE)	17.72
nu hat (MLE)	18.68	nu star (bias corrected)	13.78
MLE Mean (bias corrected)	13.57	MLE Sd (bias corrected)	15.51
		Approximate Chi Square Value (0.05)	6.424
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	5.401

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	29.12	95% Adjusted Gamma UCL (use when n<50)	34.63

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.199	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.688	Mean of logged Data	2.054
Maximum of Logged Data	3.747	SD of logged Data	1.18

Assuming Lognormal Distribution

95% H-UCL	71.72	90% Chebyshev (MVUE) UCL	31.14
95% Chebyshev (MVUE) UCL	38.91	97.5% Chebyshev (MVUE) UCL	49.69
99% Chebyshev (MVUE) UCL	70.87		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	21.25	95% Jackknife UCL	22.25
95% Standard Bootstrap UCL	20.98	95% Bootstrap-t UCL	26.53
95% Hall's Bootstrap UCL	22.96	95% Percentile Bootstrap UCL	21.26
95% BCA Bootstrap UCL	22.61		
90% Chebyshev(Mean, Sd) UCL	27.57	95% Chebyshev(Mean, Sd) UCL	33.92
97.5% Chebyshev(Mean, Sd) UCL	42.72	99% Chebyshev(Mean, Sd) UCL	60.02

Suggested UCL to Use

95% Student's-t UCL	22.25

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	25.92
Maximum	76.2	Median	19.1
SD	26.86	Std. Error of Mean	8.954
Coefficient of Variation	1.036	Skewness	0.956

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.857	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.254	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.57	95% Adjusted-CLT UCL (Chen-1995)	43.7
		95% Modified-t UCL (Johnson-1978)	43.05

Gamma GOF Test

A-D Test Statistic	0.429	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.218	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.289	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.808	k star (bias corrected MLE)	0.613
Theta hat (MLE)	32.06	Theta star (bias corrected MLE)	42.28
nu hat (MLE)	14.55	nu star (bias corrected)	11.03
MLE Mean (bias corrected)	25.92	MLE Sd (bias corrected)	33.11
		Approximate Chi Square Value (0.05)	4.598
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	3.762

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	62.21	95% Adjusted Gamma UCL (use when n<50)	76.04

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.22	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.698	Mean of logged Data	2.522
Maximum of Logged Data	4.333	SD of logged Data	1.469

Assuming Lognormal Distribution

95% H-UCL	353.7	90% Chebyshev (MVUE) UCL	75.86
95% Chebyshev (MVUE) UCL	96.58	97.5% Chebyshev (MVUE) UCL	125.3
99% Chebyshev (MVUE) UCL	181.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	40.65	95% Jackknife UCL	42.57
95% Standard Bootstrap UCL	39.9	95% Bootstrap-t UCL	47.93
95% Hall's Bootstrap UCL	43.03	95% Percentile Bootstrap UCL	40.42
95% BCA Bootstrap UCL	43.61		
90% Chebyshev(Mean, Sd) UCL	52.78	95% Chebyshev(Mean, Sd) UCL	64.95
97.5% Chebyshev(Mean, Sd) UCL	81.84	99% Chebyshev(Mean, Sd) UCL	115

Suggested UCL to Use

95% Student's-t UCL	42.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3	Mean	6.411
Maximum	17.2	Median	3.62
SD	5.071	Std. Error of Mean	1.69
Coefficient of Variation	0.791	Skewness	1.501

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.737	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.349	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	9.554	95% Adjusted-CLT UCL (Chen-1995)	10.09
		95% Modified-t UCL (Johnson-1978)	9.695

Gamma GOF Test

A-D Test Statistic	1.035	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.729	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.338	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.282	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.362	k star (bias corrected MLE)	1.649
Theta hat (MLE)	2.715	Theta star (bias corrected MLE)	3.889
nu hat (MLE)	42.51	nu star (bias corrected)	29.67
MLE Mean (bias corrected)	6.411	MLE Sd (bias corrected)	4.993
		Approximate Chi Square Value (0.05)	18.24
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	16.37

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	10.43	95% Adjusted Gamma UCL (use when n<50)	11.62

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.785	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.308	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.099	Mean of logged Data	1.632
Maximum of Logged Data	2.845	SD of logged Data	0.673

Assuming Lognormal Distribution

95% H-UCL	11.83	90% Chebyshev (MVUE) UCL	10.52
95% Chebyshev (MVUE) UCL	12.46	97.5% Chebyshev (MVUE) UCL	15.15
99% Chebyshev (MVUE) UCL	20.45		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	9.191	95% Jackknife UCL	9.554
95% Standard Bootstrap UCL	9.086	95% Bootstrap-t UCL	12.75
95% Hall's Bootstrap UCL	9.695	95% Percentile Bootstrap UCL	9.224
95% BCA Bootstrap UCL	9.829		
90% Chebyshev(Mean, Sd) UCL	11.48	95% Chebyshev(Mean, Sd) UCL	13.78
97.5% Chebyshev(Mean, Sd) UCL	16.97	99% Chebyshev(Mean, Sd) UCL	23.23

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.78

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	30.4
Maximum	99.1	Median	17
SD	34.36	Std. Error of Mean	11.45
Coefficient of Variation	1.13	Skewness	1.194

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.831	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.269	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.7	95% Adjusted-CLT UCL (Chen-1995)	54.11
		95% Modified-t UCL (Johnson-1978)	52.46

Gamma GOF Test

A-D Test Statistic	0.391	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.21	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.29	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.731	k star (bias corrected MLE)	0.561
Theta hat (MLE)	41.6	Theta star (bias corrected MLE)	54.16
nu hat (MLE)	13.15	nu star (bias corrected)	10.1
MLE Mean (bias corrected)	30.4	MLE Sd (bias corrected)	40.58
		Approximate Chi Square Value (0.05)	4.006
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	3.237

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	76.66	95% Adjusted Gamma UCL (use when n<50)	94.87

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.214	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.698	Mean of logged Data	2.592
Maximum of Logged Data	4.596	SD of logged Data	1.541

Assuming Lognormal Distribution

95% H-UCL	521.3	90% Chebyshev (MVUE) UCL	90.73
95% Chebyshev (MVUE) UCL	116	97.5% Chebyshev (MVUE) UCL	151
99% Chebyshev (MVUE) UCL	219.7		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	49.24	95% Jackknife UCL	51.7
95% Standard Bootstrap UCL	47.72	95% Bootstrap-t UCL	65.96
95% Hall's Bootstrap UCL	52.25	95% Percentile Bootstrap UCL	49.19
95% BCA Bootstrap UCL	53.01		
90% Chebyshev(Mean, Sd) UCL	64.76	95% Chebyshev(Mean, Sd) UCL	80.33
97.5% Chebyshev(Mean, Sd) UCL	101.9	99% Chebyshev(Mean, Sd) UCL	144.4

Suggested UCL to Use

95% Student's-t UCL	51.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.02	Mean	1.227
Maximum	1.3	Median	1.24
SD	0.0885	Std. Error of Mean	0.0295
Coefficient of Variation	0.0721	Skewness	-1.787

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.802	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.281	95% Adjusted-CLT UCL (Chen-1995)	1.256
		95% Modified-t UCL (Johnson-1978)	1.279

Gamma GOF Test

A-D Test Statistic	0.753	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.72	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.232	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.279	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	200.8	k star (bias corrected MLE)	133.9
Theta hat (MLE)	0.00611	Theta star (bias corrected MLE)	0.00916
nu hat (MLE)	3614	nu star (bias corrected)	2410
MLE Mean (bias corrected)	1.227	MLE Sd (bias corrected)	0.106
		Approximate Chi Square Value (0.05)	2297
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	2274

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.287	95% Adjusted Gamma UCL (use when n<50)	1.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.777	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.246	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.0198	Mean of logged Data	0.202
Maximum of Logged Data	0.262	SD of logged Data	0.0763

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	1.32
95% Chebyshev (MVUE) UCL	1.363	97.5% Chebyshev (MVUE) UCL	1.422
99% Chebyshev (MVUE) UCL	1.538		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	1.275	95% Jackknife UCL	1.281
95% Standard Bootstrap UCL	1.271	95% Bootstrap-t UCL	1.267
95% Hall's Bootstrap UCL	1.261	95% Percentile Bootstrap UCL	1.268
95% BCA Bootstrap UCL	1.261		
90% Chebyshev(Mean, Sd) UCL	1.315	95% Chebyshev(Mean, Sd) UCL	1.355
97.5% Chebyshev(Mean, Sd) UCL	1.411	99% Chebyshev(Mean, Sd) UCL	1.52

Suggested UCL to Use

95% Student's-t UCL	1.281

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	21.27
Maximum	62.5	Median	14.2
SD	21.53	Std. Error of Mean	7.176
Coefficient of Variation	1.012	Skewness	1.058

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.836	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.274	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.61	95% Adjusted-CLT UCL (Chen-1995)	35.77
		95% Modified-t UCL (Johnson-1978)	35.03

Gamma GOF Test

A-D Test Statistic	0.434	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.198	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.287	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.033	k star (bias corrected MLE)	0.763
Theta hat (MLE)	20.59	Theta star (bias corrected MLE)	27.88
nu hat (MLE)	18.6	nu star (bias corrected)	13.73
MLE Mean (bias corrected)	21.27	MLE Sd (bias corrected)	24.35
		Approximate Chi Square Value (0.05)	6.387
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	5.368

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	45.72	95% Adjusted Gamma UCL (use when n<50)	54.4

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.892	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.118	Mean of logged Data	2.501
Maximum of Logged Data	4.135	SD of logged Data	1.189

Assuming Lognormal Distribution

95% H-UCL	115.6	90% Chebyshev (MVUE) UCL	49.29
95% Chebyshev (MVUE) UCL	61.63	97.5% Chebyshev (MVUE) UCL	78.75
99% Chebyshev (MVUE) UCL	112.4		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	33.07	95% Jackknife UCL	34.61
95% Standard Bootstrap UCL	32.57	95% Bootstrap-t UCL	40.99
95% Hall's Bootstrap UCL	32.85	95% Percentile Bootstrap UCL	32.06
95% BCA Bootstrap UCL	35.27		
90% Chebyshev(Mean, Sd) UCL	42.8	95% Chebyshev(Mean, Sd) UCL	52.55
97.5% Chebyshev(Mean, Sd) UCL	66.08	99% Chebyshev(Mean, Sd) UCL	92.67

Suggested UCL to Use

95% Student's-t UCL	34.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.98	Mean	3.102
Maximum	11.5	Median	1.78
SD	3.306	Std. Error of Mean	1.102
Coefficient of Variation	1.066	Skewness	2.517

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.639	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.31	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL

95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	5.151	95% Adjusted-CLT UCL (Chen-1995)	5.902
		95% Modified-t UCL (Johnson-1978)	5.305

Gamma GOF Test

A-D Test Statistic	0.84	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.732	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.3	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.283	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.738	k star (bias corrected MLE)	1.233
Theta hat (MLE)	1.785	Theta star (bias corrected MLE)	2.517
nu hat (MLE)	31.28	nu star (bias corrected)	22.19
MLE Mean (bias corrected)	3.102	MLE Sd (bias corrected)	2.794
		Approximate Chi Square Value (0.05)	12.48
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	10.97

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	5.516	95% Adjusted Gamma UCL (use when n<50)	6.272

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.87	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.262	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.0202	Mean of logged Data	0.818
Maximum of Logged Data	2.442	SD of logged Data	0.753

Assuming Lognormal Distribution

95% H-UCL	6.207	90% Chebyshev (MVUE) UCL	5.138
95% Chebyshev (MVUE) UCL	6.153	97.5% Chebyshev (MVUE) UCL	7.562
99% Chebyshev (MVUE) UCL	10.33		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	4.915	95% Jackknife UCL	5.151
95% Standard Bootstrap UCL	4.862	95% Bootstrap-t UCL	9.608
95% Hall's Bootstrap UCL	10.73	95% Percentile Bootstrap UCL	5.066
95% BCA Bootstrap UCL	5.687		
90% Chebyshev(Mean, Sd) UCL	6.408	95% Chebyshev(Mean, Sd) UCL	7.905
97.5% Chebyshev(Mean, Sd) UCL	9.983	99% Chebyshev(Mean, Sd) UCL	14.07

Suggested UCL to Use

95% H-UCL	6.207

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.

H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.

It is therefore recommended to avoid the use of H-statistic based 95% UCLs.

Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	12.67
Maximum	43.3	Median	4.8
SD	13.97	Std. Error of Mean	4.658
Coefficient of Variation	1.103	Skewness	1.606

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.756	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.33	95% Adjusted-CLT UCL (Chen-1995)	23
		95% Modified-t UCL (Johnson-1978)	21.75

Gamma GOF Test

A-D Test Statistic	0.715	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.74	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.272	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.286	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.166	k star (bias corrected MLE)	0.851
Theta hat (MLE)	10.87	Theta star (bias corrected MLE)	14.88
nu hat (MLE)	20.99	nu star (bias corrected)	15.32
MLE Mean (bias corrected)	12.67	MLE Sd (bias corrected)	13.73
		Approximate Chi Square Value (0.05)	7.488
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	6.368

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	25.93	95% Adjusted Gamma UCL (use when n<50)	30.49

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.857	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level

Lilliefors Test Statistic	0.239	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.118	Mean of logged Data	2.053
Maximum of Logged Data	3.768	SD of logged Data	1.013

Assuming Lognormal Distribution

95% H-UCL	41.94	90% Chebyshev (MVUE) UCL	24.72
95% Chebyshev (MVUE) UCL	30.45	97.5% Chebyshev (MVUE) UCL	38.41
99% Chebyshev (MVUE) UCL	54.04		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	20.33	95% Jackknife UCL	21.33
95% Standard Bootstrap UCL	19.85	95% Bootstrap-t UCL	30.21
95% Hall's Bootstrap UCL	25.17	95% Percentile Bootstrap UCL	20.46
95% BCA Bootstrap UCL	21.66		
90% Chebyshev(Mean, Sd) UCL	26.64	95% Chebyshev(Mean, Sd) UCL	32.97
97.5% Chebyshev(Mean, Sd) UCL	41.76	99% Chebyshev(Mean, Sd) UCL	59.02

Suggested UCL to Use

95% Adjusted Gamma UCL	30.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.34	Mean	30.32
Maximum	93.1	Median	17.1
SD	32.69	Std. Error of Mean	10.9
Coefficient of Variation	1.078	Skewness	1.081

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.838	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.264	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	50.59	95% Adjusted-CLT UCL (Chen-1995)	52.44
		95% Modified-t UCL (Johnson-1978)	51.24

Gamma GOF Test

A-D Test Statistic	0.359	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.749	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.197	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.288	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.833	k star (bias corrected MLE)	0.63
Theta hat (MLE)	36.38	Theta star (bias corrected MLE)	48.15
nu hat (MLE)	15	nu star (bias corrected)	11.33
MLE Mean (bias corrected)	30.32	MLE Sd (bias corrected)	38.21
		Approximate Chi Square Value (0.05)	4.792
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	3.934

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	71.72	95% Adjusted Gamma UCL (use when n<50)	87.35

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.909	Shapiro Wilk Lognormal GOF Test	
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.196	Lilliefors Lognormal GOF Test	
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.85	Mean of logged Data	2.704
Maximum of Logged Data	4.534	SD of logged Data	1.397

Assuming Lognormal Distribution

95% H-UCL	312.1	90% Chebyshev (MVUE) UCL	81.62
95% Chebyshev (MVUE) UCL	103.5	97.5% Chebyshev (MVUE) UCL	133.8
99% Chebyshev (MVUE) UCL	193.4		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	48.25	95% Jackknife UCL	50.59
95% Standard Bootstrap UCL	47.52	95% Bootstrap-t UCL	60.61
95% Hall's Bootstrap UCL	49.11	95% Percentile Bootstrap UCL	47.78
95% BCA Bootstrap UCL	50.47		
90% Chebyshev(Mean, Sd) UCL	63.01	95% Chebyshev(Mean, Sd) UCL	77.82
97.5% Chebyshev(Mean, Sd) UCL	98.38	99% Chebyshev(Mean, Sd) UCL	138.8

Suggested UCL to Use

95% Student's-t UCL	50.59

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	13.5	Mean	14.06
Maximum	15	Median	13.8
SD	0.59	Std. Error of Mean	0.197
Coefficient of Variation	0.042	Skewness	0.829

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.836	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.271	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.42	95% Adjusted-CLT UCL (Chen-1995)	14.44
		95% Modified-t UCL (Johnson-1978)	14.43

Gamma GOF Test

A-D Test Statistic	0.705	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.72	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.273	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.279	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	650	k star (bias corrected MLE)	433.4
Theta hat (MLE)	0.0216	Theta star (bias corrected MLE)	0.0324
nu hat (MLE)	11701	nu star (bias corrected)	7802
MLE Mean (bias corrected)	14.06	MLE Sd (bias corrected)	0.675
		Approximate Chi Square Value (0.05)	7598
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	7555

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	14.43	95% Adjusted Gamma UCL (use when n<50)	14.52

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.84	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.265	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.603	Mean of logged Data	2.642
Maximum of Logged Data	2.708	SD of logged Data	0.0414

Assuming Lognormal Distribution

95% H-UCL	N/A	90% Chebyshev (MVUE) UCL	14.64
95% Chebyshev (MVUE) UCL	14.9	97.5% Chebyshev (MVUE) UCL	15.27
99% Chebyshev (MVUE) UCL	15.99		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	14.38	95% Jackknife UCL	14.42
95% Standard Bootstrap UCL	14.36	95% Bootstrap-t UCL	14.57
95% Hall's Bootstrap UCL	14.38	95% Percentile Bootstrap UCL	14.38
95% BCA Bootstrap UCL	14.4		
90% Chebyshev(Mean, Sd) UCL	14.65	95% Chebyshev(Mean, Sd) UCL	14.91
97.5% Chebyshev(Mean, Sd) UCL	15.28	99% Chebyshev(Mean, Sd) UCL	16.01

Suggested UCL to Use

95% Student's-t UCL	14.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.1	Mean	46.63
Maximum	92.2	Median	44
SD	32.06	Std. Error of Mean	10.69
Coefficient of Variation	0.688	Skewness	0.171

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.896	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.186	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	66.51	95% Adjusted-CLT UCL (Chen-1995)	64.86

		95% Modified-t UCL (Johnson-1978)	66.61

Gamma GOF Test

A-D Test Statistic	0.499	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.731	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.214	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.283	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.86	k star (bias corrected MLE)	1.314
Theta hat (MLE)	25.07	Theta star (bias corrected MLE)	35.48
nu hat (MLE)	33.48	nu star (bias corrected)	23.66
MLE Mean (bias corrected)	46.63	MLE Sd (bias corrected)	40.68
		Approximate Chi Square Value (0.05)	13.59
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	12.01

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	81.19	95% Adjusted Gamma UCL (use when n<50)	91.87

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.868	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.209	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.313	Mean of logged Data	3.55
Maximum of Logged Data	4.524	SD of logged Data	0.881

Assuming Lognormal Distribution

95% H-UCL	130	90% Chebyshev (MVUE) UCL	92.85
95% Chebyshev (MVUE) UCL	112.9	97.5% Chebyshev (MVUE) UCL	140.7
99% Chebyshev (MVUE) UCL	195.3		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	64.21	95% Jackknife UCL	66.51
95% Standard Bootstrap UCL	62.73	95% Bootstrap-t UCL	68.18
95% Hall's Bootstrap UCL	62.52	95% Percentile Bootstrap UCL	62.77
95% BCA Bootstrap UCL	64.14		
90% Chebyshev(Mean, Sd) UCL	78.69	95% Chebyshev(Mean, Sd) UCL	93.22
97.5% Chebyshev(Mean, Sd) UCL	113.4	99% Chebyshev(Mean, Sd) UCL	153

Suggested UCL to Use

95% Student's-t UCL	66.51

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	45.9	Mean	57.8
Maximum	75.1	Median	51.5
SD	12.33	Std. Error of Mean	4.11
Coefficient of Variation	0.213	Skewness	0.742

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.772	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	65.44	95% Adjusted-CLT UCL (Chen-1995)	65.65
		95% Modified-t UCL (Johnson-1978)	65.61

Gamma GOF Test

A-D Test Statistic	0.989	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.721	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.298	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.279	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	26.33	k star (bias corrected MLE)	17.62
Theta hat (MLE)	2.196	Theta star (bias corrected MLE)	3.279
nu hat (MLE)	473.9	nu star (bias corrected)	317.2
MLE Mean (bias corrected)	57.8	MLE Sd (bias corrected)	13.77
		Approximate Chi Square Value (0.05)	277
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	269

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	66.2	95% Adjusted Gamma UCL (use when n<50)	68.16

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.796	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.282	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.826	Mean of logged Data	4.038

Maximum of Logged Data	4.319	SD of logged Data	0.204

Assuming Lognormal Distribution

95% H-UCL	66.47	90% Chebyshev (MVUE) UCL	69.59
95% Chebyshev (MVUE) UCL	74.95	97.5% Chebyshev (MVUE) UCL	82.39
99% Chebyshev (MVUE) UCL	97		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	64.56	95% Jackknife UCL	65.44
95% Standard Bootstrap UCL	63.89	95% Bootstrap-t UCL	66.56
95% Hall's Bootstrap UCL	62.46	95% Percentile Bootstrap UCL	63.79
95% BCA Bootstrap UCL	65.59		
90% Chebyshev(Mean, Sd) UCL	70.13	95% Chebyshev(Mean, Sd) UCL	75.72
97.5% Chebyshev(Mean, Sd) UCL	83.47	99% Chebyshev(Mean, Sd) UCL	98.7

Suggested UCL to Use

95% Student's-t UCL	65.44	or 95% Modified-t UCL	65.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 7:58:05 AM
From File	Table 1 APN32404208A - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.872	Mean	1.979
Maximum	3.75	Median	1.36
SD	1.107	Std. Error of Mean	0.369
Coefficient of Variation	0.559	Skewness	0.55
Mean of logged Data	0.54	SD of logged Data	0.569

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.665	95% Adjusted-CLT UCL (Chen-1995)	2.658
		95% Modified-t UCL (Johnson-1978)	2.677

Nonparametric Distribution Free UCLs

95% CLT UCL	2.586	95% Jackknife UCL	2.665
95% Standard Bootstrap UCL	2.55	95% Bootstrap-t UCL	2.804
95% Hall's Bootstrap UCL	2.478	95% Percentile Bootstrap UCL	2.552
95% BCA Bootstrap UCL	2.608		
90% Chebyshev(Mean, Sd) UCL	3.086	95% Chebyshev(Mean, Sd) UCL	3.587
97.5% Chebyshev(Mean, Sd) UCL	4.283	99% Chebyshev(Mean, Sd) UCL	5.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0

Minimum	0.411	Mean	2.1
Maximum	5.77	Median	0.52
SD	2.425	Std. Error of Mean	0.808
Coefficient of Variation	1.155	Skewness	0.914
Mean of logged Data	0.0852	SD of logged Data	1.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.602	95% Adjusted-CLT UCL (Chen-1995)	3.692
		95% Modified-t UCL (Johnson-1978)	3.643

Nonparametric Distribution Free UCLs

95% CLT UCL	3.429	95% Jackknife UCL	3.602
95% Standard Bootstrap UCL	3.384	95% Bootstrap-t UCL	4.104
95% Hall's Bootstrap UCL	2.887	95% Percentile Bootstrap UCL	3.354
95% BCA Bootstrap UCL	3.531		
90% Chebyshev(Mean, Sd) UCL	4.524	95% Chebyshev(Mean, Sd) UCL	5.622
97.5% Chebyshev(Mean, Sd) UCL	7.147	99% Chebyshev(Mean, Sd) UCL	10.14

Suggested UCL to Use

95% Hall's Bootstrap UCL	2.887

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.58	Mean	3.232
Maximum	7.83	Median	2.08
SD	2.321	Std. Error of Mean	0.774
Coefficient of Variation	0.718	Skewness	1.607
Mean of logged Data	1	SD of logged Data	0.575

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.67	95% Adjusted-CLT UCL (Chen-1995)	4.947
		95% Modified-t UCL (Johnson-1978)	4.74

Nonparametric Distribution Free UCLs

95% CLT UCL	4.504	95% Jackknife UCL	4.67
95% Standard Bootstrap UCL	4.436	95% Bootstrap-t UCL	11.55
95% Hall's Bootstrap UCL	12.08	95% Percentile Bootstrap UCL	4.446
95% BCA Bootstrap UCL	4.977		
90% Chebyshev(Mean, Sd) UCL	5.553	95% Chebyshev(Mean, Sd) UCL	6.604
97.5% Chebyshev(Mean, Sd) UCL	8.064	99% Chebyshev(Mean, Sd) UCL	10.93

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 6.604

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	17.86
Maximum	63.3	Median	13.1
SD	19.33	Std. Error of Mean	6.444
Coefficient of Variation	1.083	Skewness	1.834
Mean of logged Data	2.286	SD of logged Data	1.269

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.84	95% Adjusted-CLT UCL (Chen-1995)	32.67
		95% Modified-t UCL (Johnson-1978)	30.5

Nonparametric Distribution Free UCLs

95% CLT UCL	28.46	95% Jackknife UCL	29.84
95% Standard Bootstrap UCL	27.93	95% Bootstrap-t UCL	39.1
95% Hall's Bootstrap UCL	74.6	95% Percentile Bootstrap UCL	28.36
95% BCA Bootstrap UCL	31.86		
90% Chebyshev(Mean, Sd) UCL	37.19	95% Chebyshev(Mean, Sd) UCL	45.95
97.5% Chebyshev(Mean, Sd) UCL	58.1	99% Chebyshev(Mean, Sd) UCL	81.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	23.53
Maximum	82.1	Median	17.6
SD	25.62	Std. Error of Mean	8.541
Coefficient of Variation	1.089	Skewness	1.679
Mean of logged Data	2.477	SD of logged Data	1.403

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.42	95% Adjusted-CLT UCL (Chen-1995)	42.69
		95% Modified-t UCL (Johnson-1978)	40.21

Nonparametric Distribution Free UCLs

95% CLT UCL	37.58	95% Jackknife UCL	39.42
95% Standard Bootstrap UCL	36.91	95% Bootstrap-t UCL	51.35
95% Hall's Bootstrap UCL	107.8	95% Percentile Bootstrap UCL	37.69
95% BCA Bootstrap UCL	41.59		
90% Chebyshev(Mean, Sd) UCL	49.16	95% Chebyshev(Mean, Sd) UCL	60.76
97.5% Chebyshev(Mean, Sd) UCL	76.87	99% Chebyshev(Mean, Sd) UCL	108.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	29.66
Maximum	88.6	Median	24.5
SD	28.34	Std. Error of Mean	9.446

Coefficient of Variation	0.955	Skewness	1.162
Mean of logged Data	2.804	SD of logged Data	1.309

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	47.23	95% Adjusted-CLT UCL (Chen-1995)	49.11
		95% Modified-t UCL (Johnson-1978)	47.84

Nonparametric Distribution Free UCLs

95% CLT UCL	45.2	95% Jackknife UCL	47.23
95% Standard Bootstrap UCL	44.33	95% Bootstrap-t UCL	55.9
95% Hall's Bootstrap UCL	67.75	95% Percentile Bootstrap UCL	45.38
95% BCA Bootstrap UCL	47.63		
90% Chebyshev(Mean, Sd) UCL	58	95% Chebyshev(Mean, Sd) UCL	70.83
97.5% Chebyshev(Mean, Sd) UCL	88.65	99% Chebyshev(Mean, Sd) UCL	123.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.19	Mean	14.06
Maximum	33.6	Median	13.7
SD	10.35	Std. Error of Mean	3.451
Coefficient of Variation	0.736	Skewness	0.633
Mean of logged Data	2.322	SD of logged Data	0.926

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.48	95% Adjusted-CLT UCL (Chen-1995)	20.52
		95% Modified-t UCL (Johnson-1978)	20.6

Nonparametric Distribution Free UCLs

95% CLT UCL	19.74	95% Jackknife UCL	20.48
95% Standard Bootstrap UCL	19.39	95% Bootstrap-t UCL	21.32
95% Hall's Bootstrap UCL	21.83	95% Percentile Bootstrap UCL	19.59
95% BCA Bootstrap UCL	19.92		
90% Chebyshev(Mean, Sd) UCL	24.42	95% Chebyshev(Mean, Sd) UCL	29.11
97.5% Chebyshev(Mean, Sd) UCL	35.62	99% Chebyshev(Mean, Sd) UCL	48.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	12.07
Maximum	39.4	Median	9.08
SD	12.12	Std. Error of Mean	4.04
Coefficient of Variation	1.004	Skewness	1.638
Mean of logged Data	2.018	SD of logged Data	1.085

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.58	95% Adjusted-CLT UCL (Chen-1995)	21.07
		95% Modified-t UCL (Johnson-1978)	19.95

Nonparametric Distribution Free UCLs

95% CLT UCL	18.72	95% Jackknife UCL	19.58
95% Standard Bootstrap UCL	18.26	95% Bootstrap-t UCL	26.28
95% Hall's Bootstrap UCL	52.97	95% Percentile Bootstrap UCL	18.8
95% BCA Bootstrap UCL	20.78		
90% Chebyshev(Mean, Sd) UCL	24.19	95% Chebyshev(Mean, Sd) UCL	29.68
97.5% Chebyshev(Mean, Sd) UCL	37.3	99% Chebyshev(Mean, Sd) UCL	52.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	24.48
Maximum	88.4	Median	17.5
SD	27.24	Std. Error of Mean	9.081
Coefficient of Variation	1.113	Skewness	1.813
Mean of logged Data	2.499	SD of logged Data	1.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.37	95% Adjusted-CLT UCL (Chen-1995)	45.28
		95% Modified-t UCL (Johnson-1978)	42.28

Nonparametric Distribution Free UCLs

95% CLT UCL	39.42	95% Jackknife UCL	41.37
95% Standard Bootstrap UCL	38.96	95% Bootstrap-t UCL	53.57
95% Hall's Bootstrap UCL	103.9	95% Percentile Bootstrap UCL	40.19
95% BCA Bootstrap UCL	46.59		
90% Chebyshev(Mean, Sd) UCL	51.72	95% Chebyshev(Mean, Sd) UCL	64.06
97.5% Chebyshev(Mean, Sd) UCL	81.19	99% Chebyshev(Mean, Sd) UCL	114.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.165	Mean	5.417
Maximum	14.8	Median	3.26
SD	3.994	Std. Error of Mean	1.331
Coefficient of Variation	0.737	Skewness	2.033
Mean of logged Data	1.52	SD of logged Data	0.564

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.893	95% Adjusted-CLT UCL (Chen-1995)	8.571
		95% Modified-t UCL (Johnson-1978)	8.043

Nonparametric Distribution Free UCLs

95% CLT UCL	7.607	95% Jackknife UCL	7.893
95% Standard Bootstrap UCL	7.484	95% Bootstrap-t UCL	15.32
95% Hall's Bootstrap UCL	18.09	95% Percentile Bootstrap UCL	7.691
95% BCA Bootstrap UCL	8.616		
90% Chebyshev(Mean, Sd) UCL	9.411	95% Chebyshev(Mean, Sd) UCL	11.22
97.5% Chebyshev(Mean, Sd) UCL	13.73	99% Chebyshev(Mean, Sd) UCL	18.66

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.22

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	26.39
Maximum	84.8	Median	20
SD	26.85	Std. Error of Mean	8.951
Coefficient of Variation	1.018	Skewness	1.359
Mean of logged Data	2.578	SD of logged Data	1.461

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.04	95% Adjusted-CLT UCL (Chen-1995)	45.45
		95% Modified-t UCL (Johnson-1978)	43.71

Nonparametric Distribution Free UCLs

95% CLT UCL	41.11	95% Jackknife UCL	43.04
95% Standard Bootstrap UCL	40.29	95% Bootstrap-t UCL	51.26
95% Hall's Bootstrap UCL	100	95% Percentile Bootstrap UCL	41.03
95% BCA Bootstrap UCL	44.25		

90% Chebyshev(Mean, Sd) UCL	53.24	95% Chebyshev(Mean, Sd) UCL	65.41
97.5% Chebyshev(Mean, Sd) UCL	82.29	99% Chebyshev(Mean, Sd) UCL	115.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.265	Mean	1.857
Maximum	5.02	Median	1.28
SD	1.245	Std. Error of Mean	0.415
Coefficient of Variation	0.671	Skewness	2.552
Mean of logged Data	0.493	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.629	95% Adjusted-CLT UCL (Chen-1995)	2.917
		95% Modified-t UCL (Johnson-1978)	2.687

Nonparametric Distribution Free UCLs

95% CLT UCL	2.539	95% Jackknife UCL	2.629
95% Standard Bootstrap UCL	2.508	95% Bootstrap-t UCL	8.573
95% Hall's Bootstrap UCL	9.264	95% Percentile Bootstrap UCL	2.649
95% BCA Bootstrap UCL	3.07		
90% Chebyshev(Mean, Sd) UCL	3.102	95% Chebyshev(Mean, Sd) UCL	3.666
97.5% Chebyshev(Mean, Sd) UCL	4.449	99% Chebyshev(Mean, Sd) UCL	5.987

Suggested UCL to Use

95% Student's-t UCL	2.629	or 95% Modified-t UCL	2.687

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	18.85
Maximum	56.6	Median	14.9
SD	17.78	Std. Error of Mean	5.927
Coefficient of Variation	0.943	Skewness	1.338
Mean of logged Data	2.476	SD of logged Data	1.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.87	95% Adjusted-CLT UCL (Chen-1995)	31.42
		95% Modified-t UCL (Johnson-1978)	30.31

Nonparametric Distribution Free UCLs

95% CLT UCL	28.6	95% Jackknife UCL	29.87
95% Standard Bootstrap UCL	28.03	95% Bootstrap-t UCL	39
95% Hall's Bootstrap UCL	77.41	95% Percentile Bootstrap UCL	29.21
95% BCA Bootstrap UCL	31.4		
90% Chebyshev(Mean, Sd) UCL	36.63	95% Chebyshev(Mean, Sd) UCL	44.69
97.5% Chebyshev(Mean, Sd) UCL	55.87	99% Chebyshev(Mean, Sd) UCL	77.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.71	Mean	3.431
Maximum	7.44	Median	2.73
SD	1.794	Std. Error of Mean	0.598
Coefficient of Variation	0.523	Skewness	1.555
Mean of logged Data	1.13	SD of logged Data	0.465

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.543	95% Adjusted-CLT UCL (Chen-1995)	4.746
		95% Modified-t UCL (Johnson-1978)	4.595

Nonparametric Distribution Free UCLs

95% CLT UCL	4.415	95% Jackknife UCL	4.543
95% Standard Bootstrap UCL	4.371	95% Bootstrap-t UCL	5.255
95% Hall's Bootstrap UCL	8.445	95% Percentile Bootstrap UCL	4.442
95% BCA Bootstrap UCL	4.616		
90% Chebyshev(Mean, Sd) UCL	5.225	95% Chebyshev(Mean, Sd) UCL	6.037
97.5% Chebyshev(Mean, Sd) UCL	7.165	99% Chebyshev(Mean, Sd) UCL	9.38

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	14.27
Maximum	39.2	Median	8.89
SD	14.01	Std. Error of Mean	4.671
Coefficient of Variation	0.982	Skewness	1.275
Mean of logged Data	2.231	SD of logged Data	0.987

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.95	95% Adjusted-CLT UCL (Chen-1995)	24.07
		95% Modified-t UCL (Johnson-1978)	23.29

Nonparametric Distribution Free UCLs

95% CLT UCL	21.95	95% Jackknife UCL	22.95
95% Standard Bootstrap UCL	21.38	95% Bootstrap-t UCL	36.61
95% Hall's Bootstrap UCL	71.26	95% Percentile Bootstrap UCL	21.72
95% BCA Bootstrap UCL	24.38		
90% Chebyshev(Mean, Sd) UCL	28.28	95% Chebyshev(Mean, Sd) UCL	34.63
97.5% Chebyshev(Mean, Sd) UCL	43.44	99% Chebyshev(Mean, Sd) UCL	60.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	28.19
Maximum	100	Median	19.1
SD	30.71	Std. Error of Mean	10.24
Coefficient of Variation	1.089	Skewness	1.811
Mean of logged Data	2.731	SD of logged Data	1.283

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.23	95% Adjusted-CLT UCL (Chen-1995)	51.64
		95% Modified-t UCL (Johnson-1978)	48.26

Nonparametric Distribution Free UCLs

95% CLT UCL	45.03	95% Jackknife UCL	47.23
95% Standard Bootstrap UCL	43.93	95% Bootstrap-t UCL	64.25
95% Hall's Bootstrap UCL	123.9	95% Percentile Bootstrap UCL	46.02
95% BCA Bootstrap UCL	51.39		
90% Chebyshev(Mean, Sd) UCL	58.91	95% Chebyshev(Mean, Sd) UCL	72.82
97.5% Chebyshev(Mean, Sd) UCL	92.13	99% Chebyshev(Mean, Sd) UCL	130.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.69	Mean	0.738
Maximum	0.961	Median	0.71
SD	0.0853	Std. Error of Mean	0.0284

Coefficient of Variation	0.116	Skewness	2.791
Mean of logged Data	-0.309	SD of logged Data	0.104

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.791	95% Adjusted-CLT UCL (Chen-1995)	0.813
		95% Modified-t UCL (Johnson-1978)	0.795

Nonparametric Distribution Free UCLs

95% CLT UCL	0.785	95% Jackknife UCL	0.791
95% Standard Bootstrap UCL	0.781	95% Bootstrap-t UCL	0.966
95% Hall's Bootstrap UCL	0.967	95% Percentile Bootstrap UCL	0.792
95% BCA Bootstrap UCL	0.82		
90% Chebyshev(Mean, Sd) UCL	0.823	95% Chebyshev(Mean, Sd) UCL	0.862
97.5% Chebyshev(Mean, Sd) UCL	0.915	99% Chebyshev(Mean, Sd) UCL	1.021

Suggested UCL to Use

95% Student's-t UCL	0.791	or 95% Modified-t UCL	0.795

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	15.3	Mean	51.23
Maximum	142	Median	19.4
SD	54.83	Std. Error of Mean	18.28
Coefficient of Variation	1.07	Skewness	1.235
Mean of logged Data	3.467	SD of logged Data	0.979

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	85.22	95% Adjusted-CLT UCL (Chen-1995)	89.33
		95% Modified-t UCL (Johnson-1978)	86.47

Nonparametric Distribution Free UCLs

95% CLT UCL	81.29	95% Jackknife UCL	85.22
95% Standard Bootstrap UCL	80	95% Bootstrap-t UCL	129.7
95% Hall's Bootstrap UCL	89.19	95% Percentile Bootstrap UCL	79.31
95% BCA Bootstrap UCL	86.01		
90% Chebyshev(Mean, Sd) UCL	106.1	95% Chebyshev(Mean, Sd) UCL	130.9
97.5% Chebyshev(Mean, Sd) UCL	165.4	99% Chebyshev(Mean, Sd) UCL	233.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	130.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12.2	Mean	24.93
Maximum	49	Median	25.8
SD	11.45	Std. Error of Mean	3.818
Coefficient of Variation	0.459	Skewness	0.958
Mean of logged Data	3.123	SD of logged Data	0.464

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.03	95% Adjusted-CLT UCL (Chen-1995)	32.52
		95% Modified-t UCL (Johnson-1978)	32.24

Nonparametric Distribution Free UCLs

95% CLT UCL	31.21	95% Jackknife UCL	32.03
95% Standard Bootstrap UCL	30.86	95% Bootstrap-t UCL	33.21
95% Hall's Bootstrap UCL	35.47	95% Percentile Bootstrap UCL	31.23
95% BCA Bootstrap UCL	32.24		
90% Chebyshev(Mean, Sd) UCL	36.39	95% Chebyshev(Mean, Sd) UCL	41.58
97.5% Chebyshev(Mean, Sd) UCL	48.78	99% Chebyshev(Mean, Sd) UCL	62.92

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	50.7	Mean	60.54
Maximum	77.1	Median	53.8
SD	11.41	Std. Error of Mean	3.805
Coefficient of Variation	0.189	Skewness	0.775
Mean of logged Data	4.088	SD of logged Data	0.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.62	95% Adjusted-CLT UCL (Chen-1995)	67.85
		95% Modified-t UCL (Johnson-1978)	67.78

Nonparametric Distribution Free UCLs

95% CLT UCL	66.8	95% Jackknife UCL	67.62
95% Standard Bootstrap UCL	66.62	95% Bootstrap-t UCL	69.23
95% Hall's Bootstrap UCL	65.05	95% Percentile Bootstrap UCL	66.47
95% BCA Bootstrap UCL	67.47		
90% Chebyshev(Mean, Sd) UCL	71.96	95% Chebyshev(Mean, Sd) UCL	77.13
97.5% Chebyshev(Mean, Sd) UCL	84.31	99% Chebyshev(Mean, Sd) UCL	98.4

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:52:15 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404211C) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.791	Mean	2.25
Maximum	3.885	Median	2.32
SD	0.989	Std. Error of Mean	0.33
Coefficient of Variation	0.439	Skewness	-0.0111
Mean of logged Data	0.703	SD of logged Data	0.528

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.862	95% Adjusted-CLT UCL (Chen-1995)	2.79
		95% Modified-t UCL (Johnson-1978)	2.862

Nonparametric Distribution Free UCLs

95% CLT UCL	2.792	95% Jackknife UCL	2.862
95% Standard Bootstrap UCL	2.762	95% Bootstrap-t UCL	2.849
95% Hall's Bootstrap UCL	2.856	95% Percentile Bootstrap UCL	2.776
95% BCA Bootstrap UCL	2.748		
90% Chebyshev(Mean, Sd) UCL	3.238	95% Chebyshev(Mean, Sd) UCL	3.686
97.5% Chebyshev(Mean, Sd) UCL	4.308	99% Chebyshev(Mean, Sd) UCL	5.528

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.373	Mean	0.981
Maximum	2.075	Median	0.789
SD	0.569	Std. Error of Mean	0.19
Coefficient of Variation	0.579	Skewness	0.952
Mean of logged Data	-0.165	SD of logged Data	0.573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.334	95% Adjusted-CLT UCL (Chen-1995)	1.357
		95% Modified-t UCL (Johnson-1978)	1.344

Nonparametric Distribution Free UCLs

95% CLT UCL	1.293	95% Jackknife UCL	1.334
95% Standard Bootstrap UCL	1.278	95% Bootstrap-t UCL	1.465
95% Hall's Bootstrap UCL	1.456	95% Percentile Bootstrap UCL	1.269
95% BCA Bootstrap UCL	1.306		
90% Chebyshev(Mean, Sd) UCL	1.55	95% Chebyshev(Mean, Sd) UCL	1.807
97.5% Chebyshev(Mean, Sd) UCL	2.165	99% Chebyshev(Mean, Sd) UCL	2.867

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.41	Mean	3.307
Maximum	8.4	Median	2.24
SD	2.148	Std. Error of Mean	0.716
Coefficient of Variation	0.649	Skewness	1.963
Mean of logged Data	1.053	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.638	95% Adjusted-CLT UCL (Chen-1995)	4.985
		95% Modified-t UCL (Johnson-1978)	4.717

Nonparametric Distribution Free UCLs

95% CLT UCL	4.485	95% Jackknife UCL	4.638
95% Standard Bootstrap UCL	4.393	95% Bootstrap-t UCL	6.115
95% Hall's Bootstrap UCL	9.606	95% Percentile Bootstrap UCL	4.478
95% BCA Bootstrap UCL	4.979		
90% Chebyshev(Mean, Sd) UCL	5.455	95% Chebyshev(Mean, Sd) UCL	6.428
97.5% Chebyshev(Mean, Sd) UCL	7.778	99% Chebyshev(Mean, Sd) UCL	10.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.155	Mean	14.08
Maximum	29.4	Median	13.3
SD	10.46	Std. Error of Mean	3.485
Coefficient of Variation	0.743	Skewness	0.295
Mean of logged Data	2.263	SD of logged Data	1.047

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.56	95% Adjusted-CLT UCL (Chen-1995)	20.17
		95% Modified-t UCL (Johnson-1978)	20.61

Nonparametric Distribution Free UCLs

95% CLT UCL	19.81	95% Jackknife UCL	20.56
95% Standard Bootstrap UCL	19.5	95% Bootstrap-t UCL	20.62
95% Hall's Bootstrap UCL	20.65	95% Percentile Bootstrap UCL	19.72
95% BCA Bootstrap UCL	19.84		
90% Chebyshev(Mean, Sd) UCL	24.53	95% Chebyshev(Mean, Sd) UCL	29.27
97.5% Chebyshev(Mean, Sd) UCL	35.84	99% Chebyshev(Mean, Sd) UCL	48.75

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.155	Mean	18.77
Maximum	39.8	Median	19.2
SD	14.17	Std. Error of Mean	4.724
Coefficient of Variation	0.755	Skewness	0.277
Mean of logged Data	2.511	SD of logged Data	1.124

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.55	95% Adjusted-CLT UCL (Chen-1995)	27
		95% Modified-t UCL (Johnson-1978)	27.62

Nonparametric Distribution Free UCLs

95% CLT UCL	26.54	95% Jackknife UCL	27.55
95% Standard Bootstrap UCL	26.14	95% Bootstrap-t UCL	28.02
95% Hall's Bootstrap UCL	27.67	95% Percentile Bootstrap UCL	25.96
95% BCA Bootstrap UCL	26.54		
90% Chebyshev(Mean, Sd) UCL	32.94	95% Chebyshev(Mean, Sd) UCL	39.36
97.5% Chebyshev(Mean, Sd) UCL	48.27	99% Chebyshev(Mean, Sd) UCL	65.77

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.315	Mean	27.58
Maximum	57.4	Median	26.4

SD	20.95	Std. Error of Mean	6.985
Coefficient of Variation	0.76	Skewness	0.285
Mean of logged Data	2.903	SD of logged Data	1.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.57	95% Adjusted-CLT UCL (Chen-1995)	39.78
		95% Modified-t UCL (Johnson-1978)	40.68

Nonparametric Distribution Free UCLs

95% CLT UCL	39.07	95% Jackknife UCL	40.57
95% Standard Bootstrap UCL	38.42	95% Bootstrap-t UCL	41.39
95% Hall's Bootstrap UCL	39.67	95% Percentile Bootstrap UCL	38.6
95% BCA Bootstrap UCL	39.3		
90% Chebyshev(Mean, Sd) UCL	48.54	95% Chebyshev(Mean, Sd) UCL	58.03
97.5% Chebyshev(Mean, Sd) UCL	71.2	99% Chebyshev(Mean, Sd) UCL	97.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.38	Mean	15.81
Maximum	33.2	Median	13.6
SD	11.81	Std. Error of Mean	3.937
Coefficient of Variation	0.747	Skewness	0.38
Mean of logged Data	2.398	SD of logged Data	1.005

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.13	95% Adjusted-CLT UCL (Chen-1995)	22.82
		95% Modified-t UCL (Johnson-1978)	23.21

Nonparametric Distribution Free UCLs

95% CLT UCL	22.29	95% Jackknife UCL	23.13
95% Standard Bootstrap UCL	21.83	95% Bootstrap-t UCL	23.79
95% Hall's Bootstrap UCL	23.65	95% Percentile Bootstrap UCL	21.82
95% BCA Bootstrap UCL	22.43		
90% Chebyshev(Mean, Sd) UCL	27.62	95% Chebyshev(Mean, Sd) UCL	32.97
97.5% Chebyshev(Mean, Sd) UCL	40.4	99% Chebyshev(Mean, Sd) UCL	54.98

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	1
Minimum	2.155	Mean	11.94
Maximum	23.2	Median	11.15
SD	7.908	Std. Error of Mean	2.796
Coefficient of Variation	0.662	Skewness	0.244
Mean of logged Data	2.199	SD of logged Data	0.9

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.24	95% Adjusted-CLT UCL (Chen-1995)	16.8
		95% Modified-t UCL (Johnson-1978)	17.28

Nonparametric Distribution Free UCLs

95% CLT UCL	16.54	95% Jackknife UCL	17.24
95% Standard Bootstrap UCL	16.24	95% Bootstrap-t UCL	17.8
95% Hall's Bootstrap UCL	17.56	95% Percentile Bootstrap UCL	16.31
95% BCA Bootstrap UCL	16.46		
90% Chebyshev(Mean, Sd) UCL	20.33	95% Chebyshev(Mean, Sd) UCL	24.13
97.5% Chebyshev(Mean, Sd) UCL	29.41	99% Chebyshev(Mean, Sd) UCL	39.76

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.155	Mean	22.06
Maximum	47.5	Median	21.2
SD	16.95	Std. Error of Mean	5.649
Coefficient of Variation	0.768	Skewness	0.31
Mean of logged Data	2.655	SD of logged Data	1.152

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.56	95% Adjusted-CLT UCL (Chen-1995)	31.97
		95% Modified-t UCL (Johnson-1978)	32.66

Nonparametric Distribution Free UCLs

95% CLT UCL	31.35	95% Jackknife UCL	32.56
95% Standard Bootstrap UCL	30.9	95% Bootstrap-t UCL	33.59
95% Hall's Bootstrap UCL	33.43	95% Percentile Bootstrap UCL	30.94
95% BCA Bootstrap UCL	31.1		
90% Chebyshev(Mean, Sd) UCL	39	95% Chebyshev(Mean, Sd) UCL	46.68
97.5% Chebyshev(Mean, Sd) UCL	57.34	99% Chebyshev(Mean, Sd) UCL	78.26

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.155	Mean	6.158
Maximum	12.95	Median	5.82
SD	3.333	Std. Error of Mean	1.111
Coefficient of Variation	0.541	Skewness	1.094
Mean of logged Data	1.696	SD of logged Data	0.515

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.224	95% Adjusted-CLT UCL (Chen-1995)	8.418
		95% Modified-t UCL (Johnson-1978)	8.291

Nonparametric Distribution Free UCLs

95% CLT UCL	7.985	95% Jackknife UCL	8.224
95% Standard Bootstrap UCL	7.836	95% Bootstrap-t UCL	9.212
95% Hall's Bootstrap UCL	8.5	95% Percentile Bootstrap UCL	7.976
95% BCA Bootstrap UCL	8.348		
90% Chebyshev(Mean, Sd) UCL	9.491	95% Chebyshev(Mean, Sd) UCL	11
97.5% Chebyshev(Mean, Sd) UCL	13.1	99% Chebyshev(Mean, Sd) UCL	17.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.155	Mean	23.98
Maximum	50.4	Median	23
SD	18.7	Std. Error of Mean	6.234
Coefficient of Variation	0.78	Skewness	0.3
Mean of logged Data	2.715	SD of logged Data	1.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.57	95% Adjusted-CLT UCL (Chen-1995)	34.89
		95% Modified-t UCL (Johnson-1978)	35.67

Nonparametric Distribution Free UCLs

95% CLT UCL	34.23	95% Jackknife UCL	35.57
95% Standard Bootstrap UCL	33.55	95% Bootstrap-t UCL	37.43
95% Hall's Bootstrap UCL	35.44	95% Percentile Bootstrap UCL	34.23

95% BCA Bootstrap UCL	34.47		
90% Chebyshev(Mean, Sd) UCL	42.68	95% Chebyshev(Mean, Sd) UCL	51.15
97.5% Chebyshev(Mean, Sd) UCL	62.91	99% Chebyshev(Mean, Sd) UCL	86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.94	Mean	1.717
Maximum	5.2	Median	1.3
SD	1.318	Std. Error of Mean	0.439
Coefficient of Variation	0.768	Skewness	2.898
Mean of logged Data	0.395	SD of logged Data	0.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.534	95% Adjusted-CLT UCL (Chen-1995)	2.893
		95% Modified-t UCL (Johnson-1978)	2.604

Nonparametric Distribution Free UCLs

95% CLT UCL	2.439	95% Jackknife UCL	2.534
95% Standard Bootstrap UCL	2.393	95% Bootstrap-t UCL	7.019
95% Hall's Bootstrap UCL	9.076	95% Percentile Bootstrap UCL	2.588
95% BCA Bootstrap UCL	2.672		
90% Chebyshev(Mean, Sd) UCL	3.035	95% Chebyshev(Mean, Sd) UCL	3.632
97.5% Chebyshev(Mean, Sd) UCL	4.46	99% Chebyshev(Mean, Sd) UCL	6.088

Suggested UCL to Use

95% Student's-t UCL	2.534	or 95% Modified-t UCL	2.604

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.58	Mean	16.46
Maximum	34.3	Median	15.4
SD	12.31	Std. Error of Mean	4.102
Coefficient of Variation	0.748	Skewness	0.359
Mean of logged Data	2.434	SD of logged Data	1.012

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.08	95% Adjusted-CLT UCL (Chen-1995)	23.73
		95% Modified-t UCL (Johnson-1978)	24.17

Nonparametric Distribution Free UCLs

95% CLT UCL	23.2	95% Jackknife UCL	24.08
95% Standard Bootstrap UCL	22.88	95% Bootstrap-t UCL	25.49
95% Hall's Bootstrap UCL	24.1	95% Percentile Bootstrap UCL	22.93
95% BCA Bootstrap UCL	23.14		
90% Chebyshev(Mean, Sd) UCL	28.76	95% Chebyshev(Mean, Sd) UCL	34.34
97.5% Chebyshev(Mean, Sd) UCL	42.07	99% Chebyshev(Mean, Sd) UCL	57.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.979	Mean	3.169
Maximum	5.01	Median	3.49
SD	1.255	Std. Error of Mean	0.418
Coefficient of Variation	0.396	Skewness	-0.541
Mean of logged Data	1.055	SD of logged Data	0.517

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.947	95% Adjusted-CLT UCL (Chen-1995)	3.776
		95% Modified-t UCL (Johnson-1978)	3.934

Nonparametric Distribution Free UCLs

95% CLT UCL	3.857	95% Jackknife UCL	3.947
95% Standard Bootstrap UCL	3.838	95% Bootstrap-t UCL	3.824
95% Hall's Bootstrap UCL	3.765	95% Percentile Bootstrap UCL	3.783
95% BCA Bootstrap UCL	3.757		
90% Chebyshev(Mean, Sd) UCL	4.424	95% Chebyshev(Mean, Sd) UCL	4.992
97.5% Chebyshev(Mean, Sd) UCL	5.782	99% Chebyshev(Mean, Sd) UCL	7.332

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.7	Mean	10.38
Maximum	19.4	Median	10.1
SD	6.567	Std. Error of Mean	2.189
Coefficient of Variation	0.633	Skewness	0.175
Mean of logged Data	2.103	SD of logged Data	0.787

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.45	95% Adjusted-CLT UCL (Chen-1995)	14.12
		95% Modified-t UCL (Johnson-1978)	14.47

Nonparametric Distribution Free UCLs

95% CLT UCL	13.98	95% Jackknife UCL	14.45
95% Standard Bootstrap UCL	13.75	95% Bootstrap-t UCL	14.69
95% Hall's Bootstrap UCL	13.7	95% Percentile Bootstrap UCL	13.66
95% BCA Bootstrap UCL	13.96		
90% Chebyshev(Mean, Sd) UCL	16.95	95% Chebyshev(Mean, Sd) UCL	19.92

97.5% Chebyshev(Mean, Sd) UCL	24.05	99% Chebyshev(Mean, Sd) UCL	32.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.28	Mean	26.1
Maximum	61.7	Median	24.2
SD	21.08	Std. Error of Mean	7.027
Coefficient of Variation	0.808	Skewness	0.506
Mean of logged Data	2.81	SD of logged Data	1.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.17	95% Adjusted-CLT UCL (Chen-1995)	38.93
		95% Modified-t UCL (Johnson-1978)	39.36

Nonparametric Distribution Free UCLs

95% CLT UCL	37.66	95% Jackknife UCL	39.17
95% Standard Bootstrap UCL	36.67	95% Bootstrap-t UCL	42.34
95% Hall's Bootstrap UCL	40.13	95% Percentile Bootstrap UCL	37.3
95% BCA Bootstrap UCL	37.81		
90% Chebyshev(Mean, Sd) UCL	47.18	95% Chebyshev(Mean, Sd) UCL	56.73
97.5% Chebyshev(Mean, Sd) UCL	69.98	99% Chebyshev(Mean, Sd) UCL	96.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	15.5	Mean	16.63
Maximum	18.5	Median	16.5
SD	1	Std. Error of Mean	0.333
Coefficient of Variation	0.0601	Skewness	0.644
Mean of logged Data	2.81	SD of logged Data	0.0594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.25	95% Adjusted-CLT UCL (Chen-1995)	17.26
		95% Modified-t UCL (Johnson-1978)	17.27

Nonparametric Distribution Free UCLs

95% CLT UCL	17.18	95% Jackknife UCL	17.25
95% Standard Bootstrap UCL	17.16	95% Bootstrap-t UCL	17.38
95% Hall's Bootstrap UCL	17.27	95% Percentile Bootstrap UCL	17.19
95% BCA Bootstrap UCL	17.2		
90% Chebyshev(Mean, Sd) UCL	17.63	95% Chebyshev(Mean, Sd) UCL	18.09
97.5% Chebyshev(Mean, Sd) UCL	18.71	99% Chebyshev(Mean, Sd) UCL	19.95

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13	Mean	41.61
Maximum	84.3	Median	27.8
SD	27.03	Std. Error of Mean	9.012
Coefficient of Variation	0.65	Skewness	0.676
Mean of logged Data	3.527	SD of logged Data	0.688

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.37	95% Adjusted-CLT UCL (Chen-1995)	58.6
		95% Modified-t UCL (Johnson-1978)	58.71

Nonparametric Distribution Free UCLs

95% CLT UCL	56.43	95% Jackknife UCL	58.37
95% Standard Bootstrap UCL	55.63	95% Bootstrap-t UCL	65.6
95% Hall's Bootstrap UCL	57.4	95% Percentile Bootstrap UCL	56.8
95% BCA Bootstrap UCL	57.43		
90% Chebyshev(Mean, Sd) UCL	68.65	95% Chebyshev(Mean, Sd) UCL	80.89
97.5% Chebyshev(Mean, Sd) UCL	97.89	99% Chebyshev(Mean, Sd) UCL	131.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	55	Mean	63.93
Maximum	79.1	Median	59.4
SD	9.283	Std. Error of Mean	3.094
Coefficient of Variation	0.145	Skewness	0.995
Mean of logged Data	4.149	SD of logged Data	0.139

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	69.69	95% Adjusted-CLT UCL (Chen-1995)	70.12
		95% Modified-t UCL (Johnson-1978)	69.86

Nonparametric Distribution Free UCLs

95% CLT UCL	69.02	95% Jackknife UCL	69.69
95% Standard Bootstrap UCL	68.6	95% Bootstrap-t UCL	73.62
95% Hall's Bootstrap UCL	69.01	95% Percentile Bootstrap UCL	69.26
95% BCA Bootstrap UCL	69.67		
90% Chebyshev(Mean, Sd) UCL	73.22	95% Chebyshev(Mean, Sd) UCL	77.42
97.5% Chebyshev(Mean, Sd) UCL	83.26	99% Chebyshev(Mean, Sd) UCL	94.72

Suggested UCL to Use

95% Student's-t UCL	69.69	or 95% Modified-t UCL	69.86

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:05:04 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404241 - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.933	Mean	1.353
Maximum	2.05	Median	1.23
SD	0.398	Std. Error of Mean	0.133
Coefficient of Variation	0.294	Skewness	0.78
Mean of logged Data	0.266	SD of logged Data	0.282

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.6	95% Adjusted-CLT UCL (Chen-1995)	1.608
		95% Modified-t UCL (Johnson-1978)	1.605

Nonparametric Distribution Free UCLs

95% CLT UCL	1.571	95% Jackknife UCL	1.6
95% Standard Bootstrap UCL	1.559	95% Bootstrap-t UCL	1.704
95% Hall's Bootstrap UCL	1.658	95% Percentile Bootstrap UCL	1.561
95% BCA Bootstrap UCL	1.568		
90% Chebyshev(Mean, Sd) UCL	1.751	95% Chebyshev(Mean, Sd) UCL	1.931
97.5% Chebyshev(Mean, Sd) UCL	2.181	99% Chebyshev(Mean, Sd) UCL	2.672

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0

Minimum	0.373	Mean	0.495
Maximum	0.525	Median	0.515
SD	0.0476	Std. Error of Mean	0.0159
Coefficient of Variation	0.0962	Skewness	-2.625
Mean of logged Data	-0.707	SD of logged Data	0.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.525	95% Adjusted-CLT UCL (Chen-1995)	0.507
		95% Modified-t UCL (Johnson-1978)	0.523

Nonparametric Distribution Free UCLs

95% CLT UCL	0.521	95% Jackknife UCL	0.525
95% Standard Bootstrap UCL	0.52	95% Bootstrap-t UCL	0.515
95% Hall's Bootstrap UCL	0.511	95% Percentile Bootstrap UCL	0.516
95% BCA Bootstrap UCL	0.512		
90% Chebyshev(Mean, Sd) UCL	0.543	95% Chebyshev(Mean, Sd) UCL	0.565
97.5% Chebyshev(Mean, Sd) UCL	0.595	99% Chebyshev(Mean, Sd) UCL	0.653

Suggested UCL to Use

95% Student's-t UCL	0.525	or 95% Modified-t UCL	0.523

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.79	Mean	3.253
Maximum	6.09	Median	2.145
SD	1.744	Std. Error of Mean	0.581
Coefficient of Variation	0.536	Skewness	0.911
Mean of logged Data	1.065	SD of logged Data	0.491

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.334	95% Adjusted-CLT UCL (Chen-1995)	4.398
		95% Modified-t UCL (Johnson-1978)	4.364

Nonparametric Distribution Free UCLs

95% CLT UCL	4.209	95% Jackknife UCL	4.334
95% Standard Bootstrap UCL	4.139	95% Bootstrap-t UCL	4.647
95% Hall's Bootstrap UCL	3.859	95% Percentile Bootstrap UCL	4.144
95% BCA Bootstrap UCL	4.336		
90% Chebyshev(Mean, Sd) UCL	4.997	95% Chebyshev(Mean, Sd) UCL	5.787
97.5% Chebyshev(Mean, Sd) UCL	6.883	99% Chebyshev(Mean, Sd) UCL	9.037

Suggested UCL to Use

95% Student's-t UCL	4.334	or 95% Modified-t UCL	4.364

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	4.463
Maximum	8.83	Median	3.39
SD	2.785	Std. Error of Mean	0.928
Coefficient of Variation	0.624	Skewness	0.763
Mean of logged Data	1.328	SD of logged Data	0.605

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.19	95% Adjusted-CLT UCL (Chen-1995)	6.243
		95% Modified-t UCL (Johnson-1978)	6.229

Nonparametric Distribution Free UCLs

95% CLT UCL	5.99	95% Jackknife UCL	6.19
95% Standard Bootstrap UCL	5.891	95% Bootstrap-t UCL	6.469
95% Hall's Bootstrap UCL	5.59	95% Percentile Bootstrap UCL	5.931
95% BCA Bootstrap UCL	5.934		
90% Chebyshev(Mean, Sd) UCL	7.248	95% Chebyshev(Mean, Sd) UCL	8.51
97.5% Chebyshev(Mean, Sd) UCL	10.26	99% Chebyshev(Mean, Sd) UCL	13.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.265	Mean	7.138
Maximum	14.8	Median	4.64
SD	4.963	Std. Error of Mean	1.654
Coefficient of Variation	0.695	Skewness	0.834
Mean of logged Data	1.762	SD of logged Data	0.658

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.21	95% Adjusted-CLT UCL (Chen-1995)	10.35
		95% Modified-t UCL (Johnson-1978)	10.29

Nonparametric Distribution Free UCLs

95% CLT UCL	9.859	95% Jackknife UCL	10.21
95% Standard Bootstrap UCL	9.684	95% Bootstrap-t UCL	10.75
95% Hall's Bootstrap UCL	8.876	95% Percentile Bootstrap UCL	9.721
95% BCA Bootstrap UCL	10.21		
90% Chebyshev(Mean, Sd) UCL	12.1	95% Chebyshev(Mean, Sd) UCL	14.35
97.5% Chebyshev(Mean, Sd) UCL	17.47	99% Chebyshev(Mean, Sd) UCL	23.6

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	4.757
Maximum	8.7	Median	3.29

SD	2.327	Std. Error of Mean	0.776
Coefficient of Variation	0.489	Skewness	0.97
Mean of logged Data	1.465	SD of logged Data	0.444

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.2	95% Adjusted-CLT UCL (Chen-1995)	6.301
		95% Modified-t UCL (Johnson-1978)	6.242

Nonparametric Distribution Free UCLs

95% CLT UCL	6.033	95% Jackknife UCL	6.2
95% Standard Bootstrap UCL	5.936	95% Bootstrap-t UCL	6.687
95% Hall's Bootstrap UCL	5.529	95% Percentile Bootstrap UCL	5.982
95% BCA Bootstrap UCL	6.267		
90% Chebyshev(Mean, Sd) UCL	7.085	95% Chebyshev(Mean, Sd) UCL	8.139
97.5% Chebyshev(Mean, Sd) UCL	9.602	99% Chebyshev(Mean, Sd) UCL	12.48

Suggested UCL to Use

95% Student's-t UCL	6.2	or 95% Modified-t UCL	6.242

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	3.147
Maximum	5.72	Median	2.135
SD	1.615	Std. Error of Mean	0.538
Coefficient of Variation	0.513	Skewness	0.938
Mean of logged Data	1.042	SD of logged Data	0.467

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.148	95% Adjusted-CLT UCL (Chen-1995)	4.212
		95% Modified-t UCL (Johnson-1978)	4.176

Nonparametric Distribution Free UCLs

95% CLT UCL	4.032	95% Jackknife UCL	4.148
95% Standard Bootstrap UCL	3.979	95% Bootstrap-t UCL	4.54
95% Hall's Bootstrap UCL	3.688	95% Percentile Bootstrap UCL	4.008
95% BCA Bootstrap UCL	4.085		
90% Chebyshev(Mean, Sd) UCL	4.762	95% Chebyshev(Mean, Sd) UCL	5.494
97.5% Chebyshev(Mean, Sd) UCL	6.51	99% Chebyshev(Mean, Sd) UCL	8.505

Suggested UCL to Use

95% Student's-t UCL	4.148	or 95% Modified-t UCL	4.176

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	5.039
Maximum	10.4	Median	3.24
SD	3.63	Std. Error of Mean	1.21
Coefficient of Variation	0.72	Skewness	0.811
Mean of logged Data	1.396	SD of logged Data	0.69

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.289	95% Adjusted-CLT UCL (Chen-1995)	7.379
		95% Modified-t UCL (Johnson-1978)	7.344

Nonparametric Distribution Free UCLs

95% CLT UCL	7.029	95% Jackknife UCL	7.289
95% Standard Bootstrap UCL	6.935	95% Bootstrap-t UCL	7.69
95% Hall's Bootstrap UCL	6.3	95% Percentile Bootstrap UCL	6.847
95% BCA Bootstrap UCL	7.261		
90% Chebyshev(Mean, Sd) UCL	8.669	95% Chebyshev(Mean, Sd) UCL	10.31
97.5% Chebyshev(Mean, Sd) UCL	12.6	99% Chebyshev(Mean, Sd) UCL	17.08

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	5.869
Maximum	12.8	Median	3.48
SD	4.525	Std. Error of Mean	1.508
Coefficient of Variation	0.771	Skewness	0.803
Mean of logged Data	1.507	SD of logged Data	0.76

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.674	95% Adjusted-CLT UCL (Chen-1995)	8.781
		95% Modified-t UCL (Johnson-1978)	8.741

Nonparametric Distribution Free UCLs

95% CLT UCL	8.35	95% Jackknife UCL	8.674
95% Standard Bootstrap UCL	8.226	95% Bootstrap-t UCL	9.173
95% Hall's Bootstrap UCL	7.51	95% Percentile Bootstrap UCL	8.091
95% BCA Bootstrap UCL	8.551		
90% Chebyshev(Mean, Sd) UCL	10.39	95% Chebyshev(Mean, Sd) UCL	12.44
97.5% Chebyshev(Mean, Sd) UCL	15.29	99% Chebyshev(Mean, Sd) UCL	20.88

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.17	Mean	4.92
Maximum	9.35	Median	3.3
SD	2.801	Std. Error of Mean	0.934
Coefficient of Variation	0.569	Skewness	0.863
Mean of logged Data	1.46	SD of logged Data	0.535

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.656	95% Adjusted-CLT UCL (Chen-1995)	6.743
		95% Modified-t UCL (Johnson-1978)	6.701

Nonparametric Distribution Free UCLs

95% CLT UCL	6.456	95% Jackknife UCL	6.656
95% Standard Bootstrap UCL	6.358	95% Bootstrap-t UCL	7.159
95% Hall's Bootstrap UCL	5.975	95% Percentile Bootstrap UCL	6.414
95% BCA Bootstrap UCL	6.518		
90% Chebyshev(Mean, Sd) UCL	7.721	95% Chebyshev(Mean, Sd) UCL	8.989
97.5% Chebyshev(Mean, Sd) UCL	10.75	99% Chebyshev(Mean, Sd) UCL	14.21

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.989

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.46	Mean	2.144
Maximum	3.59	Median	1.91
SD	0.66	Std. Error of Mean	0.22
Coefficient of Variation	0.308	Skewness	1.433
Mean of logged Data	0.726	SD of logged Data	0.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.554	95% Adjusted-CLT UCL (Chen-1995)	2.619
		95% Modified-t UCL (Johnson-1978)	2.571

Nonparametric Distribution Free UCLs

95% CLT UCL	2.506	95% Jackknife UCL	2.554
95% Standard Bootstrap UCL	2.494	95% Bootstrap-t UCL	2.864
95% Hall's Bootstrap UCL	2.859	95% Percentile Bootstrap UCL	2.491

95% BCA Bootstrap UCL	2.602		
90% Chebyshev(Mean, Sd) UCL	2.805	95% Chebyshev(Mean, Sd) UCL	3.104
97.5% Chebyshev(Mean, Sd) UCL	3.519	99% Chebyshev(Mean, Sd) UCL	4.334

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.145	Mean	3.942
Maximum	5.87	Median	3.285
SD	1.082	Std. Error of Mean	0.361
Coefficient of Variation	0.275	Skewness	1.045
Mean of logged Data	1.342	SD of logged Data	0.254

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.613	95% Adjusted-CLT UCL (Chen-1995)	4.67
		95% Modified-t UCL (Johnson-1978)	4.634

Nonparametric Distribution Free UCLs

95% CLT UCL	4.536	95% Jackknife UCL	4.613
95% Standard Bootstrap UCL	4.49	95% Bootstrap-t UCL	4.933
95% Hall's Bootstrap UCL	4.317	95% Percentile Bootstrap UCL	4.539
95% BCA Bootstrap UCL	4.564		
90% Chebyshev(Mean, Sd) UCL	5.024	95% Chebyshev(Mean, Sd) UCL	5.515
97.5% Chebyshev(Mean, Sd) UCL	6.195	99% Chebyshev(Mean, Sd) UCL	7.531

Suggested UCL to Use

95% Student's-t UCL	4.613	or 95% Modified-t UCL	4.634

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	6.008
Maximum	11.9	Median	3.41
SD	3.849	Std. Error of Mean	1.283
Coefficient of Variation	0.641	Skewness	0.868
Mean of logged Data	1.626	SD of logged Data	0.591

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.393	95% Adjusted-CLT UCL (Chen-1995)	8.514
		95% Modified-t UCL (Johnson-1978)	8.455

Nonparametric Distribution Free UCLs

95% CLT UCL	8.118	95% Jackknife UCL	8.393
95% Standard Bootstrap UCL	8.001	95% Bootstrap-t UCL	8.856
95% Hall's Bootstrap UCL	7.273	95% Percentile Bootstrap UCL	7.861
95% BCA Bootstrap UCL	8.383		
90% Chebyshev(Mean, Sd) UCL	9.857	95% Chebyshev(Mean, Sd) UCL	11.6
97.5% Chebyshev(Mean, Sd) UCL	14.02	99% Chebyshev(Mean, Sd) UCL	18.77

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.1	Mean	9.746
Maximum	10.4	Median	9.84
SD	0.411	Std. Error of Mean	0.137
Coefficient of Variation	0.0421	Skewness	-0.187
Mean of logged Data	2.276	SD of logged Data	0.0423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10	95% Adjusted-CLT UCL (Chen-1995)	9.962
		95% Modified-t UCL (Johnson-1978)	9.999

Nonparametric Distribution Free UCLs

95% CLT UCL	9.971	95% Jackknife UCL	10
95% Standard Bootstrap UCL	9.96	95% Bootstrap-t UCL	9.982
95% Hall's Bootstrap UCL	9.974	95% Percentile Bootstrap UCL	9.958
95% BCA Bootstrap UCL	9.957		
90% Chebyshev(Mean, Sd) UCL	10.16	95% Chebyshev(Mean, Sd) UCL	10.34
97.5% Chebyshev(Mean, Sd) UCL	10.6	99% Chebyshev(Mean, Sd) UCL	11.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	7.71	Mean	9.889
Maximum	13.8	Median	9.2
SD	2.208	Std. Error of Mean	0.736
Coefficient of Variation	0.223	Skewness	0.795
Mean of logged Data	2.27	SD of logged Data	0.214

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.26	95% Adjusted-CLT UCL (Chen-1995)	11.31
		95% Modified-t UCL (Johnson-1978)	11.29

Nonparametric Distribution Free UCLs

95% CLT UCL	11.1	95% Jackknife UCL	11.26
95% Standard Bootstrap UCL	11.03	95% Bootstrap-t UCL	11.62
95% Hall's Bootstrap UCL	11.08	95% Percentile Bootstrap UCL	11.09
95% BCA Bootstrap UCL	11.29		
90% Chebyshev(Mean, Sd) UCL	12.1	95% Chebyshev(Mean, Sd) UCL	13.1

97.5% Chebyshev(Mean, Sd) UCL	14.49	99% Chebyshev(Mean, Sd) UCL	17.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	33.7	Mean	46.42
Maximum	72	Median	37.4
SD	16.24	Std. Error of Mean	5.413
Coefficient of Variation	0.35	Skewness	0.903
Mean of logged Data	3.789	SD of logged Data	0.324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	56.49	95% Adjusted-CLT UCL (Chen-1995)	57.07
		95% Modified-t UCL (Johnson-1978)	56.76

Nonparametric Distribution Free UCLs

95% CLT UCL	55.33	95% Jackknife UCL	56.49
95% Standard Bootstrap UCL	54.85	95% Bootstrap-t UCL	59.89
95% Hall's Bootstrap UCL	51.93	95% Percentile Bootstrap UCL	54.98
95% BCA Bootstrap UCL	56.49		
90% Chebyshev(Mean, Sd) UCL	62.66	95% Chebyshev(Mean, Sd) UCL	70.02
97.5% Chebyshev(Mean, Sd) UCL	80.23	99% Chebyshev(Mean, Sd) UCL	100.3

Suggested UCL to Use

95% Student's-t UCL	56.49	or 95% Modified-t UCL	56.76

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:14:07 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404242) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.21	Mean	3.418
Maximum	8.25	Median	1.97
SD	2.69	Std. Error of Mean	0.897
Coefficient of Variation	0.787	Skewness	1.13
Mean of logged Data	0.979	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.085	95% Adjusted-CLT UCL (Chen-1995)	5.254
		95% Modified-t UCL (Johnson-1978)	5.142

Nonparametric Distribution Free UCLs

95% CLT UCL	4.893	95% Jackknife UCL	5.085
95% Standard Bootstrap UCL	4.84	95% Bootstrap-t UCL	6.459
95% Hall's Bootstrap UCL	4.976	95% Percentile Bootstrap UCL	4.869
95% BCA Bootstrap UCL	5.224		
90% Chebyshev(Mean, Sd) UCL	6.108	95% Chebyshev(Mean, Sd) UCL	7.327
97.5% Chebyshev(Mean, Sd) UCL	9.018	99% Chebyshev(Mean, Sd) UCL	12.34

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	0.413	Mean	0.716
Maximum	2.44	Median	0.515
SD	0.648	Std. Error of Mean	0.216
Coefficient of Variation	0.904	Skewness	2.974
Mean of logged Data	-0.519	SD of logged Data	0.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.118	95% Adjusted-CLT UCL (Chen-1995)	1.3
		95% Modified-t UCL (Johnson-1978)	1.154

Nonparametric Distribution Free UCLs

95% CLT UCL	1.071	95% Jackknife UCL	1.118
95% Standard Bootstrap UCL	1.052	95% Bootstrap-t UCL	5.238
95% Hall's Bootstrap UCL	4.676	95% Percentile Bootstrap UCL	1.143
95% BCA Bootstrap UCL	1.367		
90% Chebyshev(Mean, Sd) UCL	1.364	95% Chebyshev(Mean, Sd) UCL	1.658
97.5% Chebyshev(Mean, Sd) UCL	2.065	99% Chebyshev(Mean, Sd) UCL	2.865

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.658

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	2.437
Maximum	4.28	Median	2.11
SD	0.756	Std. Error of Mean	0.252
Coefficient of Variation	0.31	Skewness	2.218
Mean of logged Data	0.857	SD of logged Data	0.258

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.905	95% Adjusted-CLT UCL (Chen-1995)	3.05
		95% Modified-t UCL (Johnson-1978)	2.936

Nonparametric Distribution Free UCLs

95% CLT UCL	2.851	95% Jackknife UCL	2.905
95% Standard Bootstrap UCL	2.818	95% Bootstrap-t UCL	3.972
95% Hall's Bootstrap UCL	4.371	95% Percentile Bootstrap UCL	2.879
95% BCA Bootstrap UCL	3.044		
90% Chebyshev(Mean, Sd) UCL	3.192	95% Chebyshev(Mean, Sd) UCL	3.535
97.5% Chebyshev(Mean, Sd) UCL	4.01	99% Chebyshev(Mean, Sd) UCL	4.943

Suggested UCL to Use

95% Student's-t UCL	2.905	or 95% Modified-t UCL	2.936

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	4.424
Maximum	11.3	Median	2.11
SD	3.696	Std. Error of Mean	1.232
Coefficient of Variation	0.835	Skewness	1.118
Mean of logged Data	1.211	SD of logged Data	0.752

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.715	95% Adjusted-CLT UCL (Chen-1995)	6.941
		95% Modified-t UCL (Johnson-1978)	6.792

Nonparametric Distribution Free UCLs

95% CLT UCL	6.451	95% Jackknife UCL	6.715
95% Standard Bootstrap UCL	6.337	95% Bootstrap-t UCL	7.897
95% Hall's Bootstrap UCL	5.918	95% Percentile Bootstrap UCL	6.5
95% BCA Bootstrap UCL	6.801		
90% Chebyshev(Mean, Sd) UCL	8.12	95% Chebyshev(Mean, Sd) UCL	9.795
97.5% Chebyshev(Mean, Sd) UCL	12.12	99% Chebyshev(Mean, Sd) UCL	16.68

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.795

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.39	Mean	4.942
Maximum	15.1	Median	2.045
SD	4.994	Std. Error of Mean	1.665
Coefficient of Variation	1.01	Skewness	1.34
Mean of logged Data	1.19	SD of logged Data	0.914

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.038	95% Adjusted-CLT UCL (Chen-1995)	8.475
		95% Modified-t UCL (Johnson-1978)	8.162

Nonparametric Distribution Free UCLs

95% CLT UCL	7.68	95% Jackknife UCL	8.038
95% Standard Bootstrap UCL	7.562	95% Bootstrap-t UCL	10.47
95% Hall's Bootstrap UCL	7.558	95% Percentile Bootstrap UCL	7.737
95% BCA Bootstrap UCL	8.324		
90% Chebyshev(Mean, Sd) UCL	9.936	95% Chebyshev(Mean, Sd) UCL	12.2
97.5% Chebyshev(Mean, Sd) UCL	15.34	99% Chebyshev(Mean, Sd) UCL	21.51

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.72	Mean	9.264
Maximum	25.4	Median	3.025
SD	9.593	Std. Error of Mean	3.198
Coefficient of Variation	1.035	Skewness	0.986
Mean of logged Data	1.752	SD of logged Data	0.996

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.21	95% Adjusted-CLT UCL (Chen-1995)	15.65
		95% Modified-t UCL (Johnson-1978)	15.39

Nonparametric Distribution Free UCLs

95% CLT UCL	14.52	95% Jackknife UCL	15.21
95% Standard Bootstrap UCL	14.16	95% Bootstrap-t UCL	17.87
95% Hall's Bootstrap UCL	12.75	95% Percentile Bootstrap UCL	14.28
95% BCA Bootstrap UCL	15		
90% Chebyshev(Mean, Sd) UCL	18.86	95% Chebyshev(Mean, Sd) UCL	23.2
97.5% Chebyshev(Mean, Sd) UCL	29.23	99% Chebyshev(Mean, Sd) UCL	41.08

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	23.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.97	Mean	5.194
Maximum	11.7	Median	3.245
SD	3.299	Std. Error of Mean	1.1
Coefficient of Variation	0.635	Skewness	1.319
Mean of logged Data	1.499	SD of logged Data	0.548

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.24	95% Adjusted-CLT UCL (Chen-1995)	7.52
		95% Modified-t UCL (Johnson-1978)	7.32

Nonparametric Distribution Free UCLs

95% CLT UCL	7.003	95% Jackknife UCL	7.24

95% Standard Bootstrap UCL	6.913	95% Bootstrap-t UCL	9.41
95% Hall's Bootstrap UCL	7.233	95% Percentile Bootstrap UCL	6.999
95% BCA Bootstrap UCL	7.304		
90% Chebyshev(Mean, Sd) UCL	8.494	95% Chebyshev(Mean, Sd) UCL	9.988
97.5% Chebyshev(Mean, Sd) UCL	12.06	99% Chebyshev(Mean, Sd) UCL	16.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.988

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	3.729
Maximum	9.03	Median	2.11
SD	2.666	Std. Error of Mean	0.889
Coefficient of Variation	0.715	Skewness	1.261
Mean of logged Data	1.123	SD of logged Data	0.625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.382	95% Adjusted-CLT UCL (Chen-1995)	5.59
		95% Modified-t UCL (Johnson-1978)	5.444

Nonparametric Distribution Free UCLs

95% CLT UCL	5.191	95% Jackknife UCL	5.382
95% Standard Bootstrap UCL	5.142	95% Bootstrap-t UCL	6.327
95% Hall's Bootstrap UCL	4.895	95% Percentile Bootstrap UCL	5.219
95% BCA Bootstrap UCL	5.533		
90% Chebyshev(Mean, Sd) UCL	6.395	95% Chebyshev(Mean, Sd) UCL	7.603
97.5% Chebyshev(Mean, Sd) UCL	9.279	99% Chebyshev(Mean, Sd) UCL	12.57

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.603

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	7.329
Maximum	21.1	Median	2.31
SD	7.971	Std. Error of Mean	2.657
Coefficient of Variation	1.088	Skewness	0.996
Mean of logged Data	1.452	SD of logged Data	1.067

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.27	95% Adjusted-CLT UCL (Chen-1995)	12.64
		95% Modified-t UCL (Johnson-1978)	12.42

Nonparametric Distribution Free UCLs

95% CLT UCL	11.7	95% Jackknife UCL	12.27
95% Standard Bootstrap UCL	11.53	95% Bootstrap-t UCL	14.12
95% Hall's Bootstrap UCL	9.971	95% Percentile Bootstrap UCL	11.55
95% BCA Bootstrap UCL	11.75		
90% Chebyshev(Mean, Sd) UCL	15.3	95% Chebyshev(Mean, Sd) UCL	18.91
97.5% Chebyshev(Mean, Sd) UCL	23.92	99% Chebyshev(Mean, Sd) UCL	33.77

Suggested UCL to Use

95% Hall's Bootstrap UCL	9.971

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.59	Mean	3.09
Maximum	3.265	Median	3.15
SD	0.215	Std. Error of Mean	0.0718
Coefficient of Variation	0.0697	Skewness	-1.785
Mean of logged Data	1.126	SD of logged Data	0.0736

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.223	95% Adjusted-CLT UCL (Chen-1995)	3.162
		95% Modified-t UCL (Johnson-1978)	3.216

Nonparametric Distribution Free UCLs

95% CLT UCL	3.208	95% Jackknife UCL	3.223
95% Standard Bootstrap UCL	3.2	95% Bootstrap-t UCL	3.197
95% Hall's Bootstrap UCL	3.171	95% Percentile Bootstrap UCL	3.191
95% BCA Bootstrap UCL	3.173		
90% Chebyshev(Mean, Sd) UCL	3.305	95% Chebyshev(Mean, Sd) UCL	3.403
97.5% Chebyshev(Mean, Sd) UCL	3.538	99% Chebyshev(Mean, Sd) UCL	3.804

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.83	Mean	8.449
Maximum	25.8	Median	2.6
SD	9.57	Std. Error of Mean	3.19
Coefficient of Variation	1.133	Skewness	1.076
Mean of logged Data	1.542	SD of logged Data	1.122

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.38	95% Adjusted-CLT UCL (Chen-1995)	14.92
		95% Modified-t UCL (Johnson-1978)	14.57

Nonparametric Distribution Free UCLs

95% CLT UCL	13.7	95% Jackknife UCL	14.38

95% Standard Bootstrap UCL	13.44	95% Bootstrap-t UCL	17.38
95% Hall's Bootstrap UCL	12.28	95% Percentile Bootstrap UCL	13.67
95% BCA Bootstrap UCL	14.69		
90% Chebyshev(Mean, Sd) UCL	18.02	95% Chebyshev(Mean, Sd) UCL	22.35
97.5% Chebyshev(Mean, Sd) UCL	28.37	99% Chebyshev(Mean, Sd) UCL	40.19

Suggested UCL to Use

95% Hall's Bootstrap UCL	12.28

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.16	Mean	1.25
Maximum	1.305	Median	1.26
SD	0.0536	Std. Error of Mean	0.0179
Coefficient of Variation	0.0428	Skewness	-0.548
Mean of logged Data	0.222	SD of logged Data	0.0433

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.283	95% Adjusted-CLT UCL (Chen-1995)	1.276
		95% Modified-t UCL (Johnson-1978)	1.283

Nonparametric Distribution Free UCLs

95% CLT UCL	1.279	95% Jackknife UCL	1.283
95% Standard Bootstrap UCL	1.278	95% Bootstrap-t UCL	1.281
95% Hall's Bootstrap UCL	1.274	95% Percentile Bootstrap UCL	1.277
95% BCA Bootstrap UCL	1.273		
90% Chebyshev(Mean, Sd) UCL	1.304	95% Chebyshev(Mean, Sd) UCL	1.328
97.5% Chebyshev(Mean, Sd) UCL	1.361	99% Chebyshev(Mean, Sd) UCL	1.428

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.97	Mean	5.847
Maximum	13.8	Median	3.245
SD	4.24	Std. Error of Mean	1.413
Coefficient of Variation	0.725	Skewness	1.173
Mean of logged Data	1.565	SD of logged Data	0.64

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.475	95% Adjusted-CLT UCL (Chen-1995)	8.762
		95% Modified-t UCL (Johnson-1978)	8.567

Nonparametric Distribution Free UCLs

95% CLT UCL	8.172	95% Jackknife UCL	8.475
95% Standard Bootstrap UCL	8.075	95% Bootstrap-t UCL	10.41
95% Hall's Bootstrap UCL	7.91	95% Percentile Bootstrap UCL	8.17
95% BCA Bootstrap UCL	8.464		
90% Chebyshev(Mean, Sd) UCL	10.09	95% Chebyshev(Mean, Sd) UCL	12.01
97.5% Chebyshev(Mean, Sd) UCL	14.67	99% Chebyshev(Mean, Sd) UCL	19.91

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.41	Mean	7.04
Maximum	17.8	Median	3.54
SD	6.245	Std. Error of Mean	2.082
Coefficient of Variation	0.887	Skewness	0.995
Mean of logged Data	1.62	SD of logged Data	0.836

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.91	95% Adjusted-CLT UCL (Chen-1995)	11.2
		95% Modified-t UCL (Johnson-1978)	11.03

Nonparametric Distribution Free UCLs

95% CLT UCL	10.46	95% Jackknife UCL	10.91
95% Standard Bootstrap UCL	10.21	95% Bootstrap-t UCL	12.69
95% Hall's Bootstrap UCL	9.272	95% Percentile Bootstrap UCL	10.42
95% BCA Bootstrap UCL	10.94		
90% Chebyshev(Mean, Sd) UCL	13.28	95% Chebyshev(Mean, Sd) UCL	16.11
97.5% Chebyshev(Mean, Sd) UCL	20.04	99% Chebyshev(Mean, Sd) UCL	27.75

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.32	Mean	7.657
Maximum	22.2	Median	3.205
SD	7.382	Std. Error of Mean	2.461
Coefficient of Variation	0.964	Skewness	1.242
Mean of logged Data	1.662	SD of logged Data	0.877

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.23	95% Adjusted-CLT UCL (Chen-1995)	12.79
		95% Modified-t UCL (Johnson-1978)	12.4

Nonparametric Distribution Free UCLs

95% CLT UCL	11.7	95% Jackknife UCL	12.23

95% Standard Bootstrap UCL	11.54	95% Bootstrap-t UCL	15.02
95% Hall's Bootstrap UCL	10.94	95% Percentile Bootstrap UCL	11.88
95% BCA Bootstrap UCL	12.58		
90% Chebyshev(Mean, Sd) UCL	15.04	95% Chebyshev(Mean, Sd) UCL	18.38
97.5% Chebyshev(Mean, Sd) UCL	23.02	99% Chebyshev(Mean, Sd) UCL	32.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 18.38

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.46	Mean	8.291
Maximum	23.8	Median	3.15
SD	8.329	Std. Error of Mean	2.776
Coefficient of Variation	1.005	Skewness	1.126
Mean of logged Data	1.691	SD of logged Data	0.937

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.45	95% Adjusted-CLT UCL (Chen-1995)	13.97
		95% Modified-t UCL (Johnson-1978)	13.63

Nonparametric Distribution Free UCLs

95% CLT UCL	12.86	95% Jackknife UCL	13.45
95% Standard Bootstrap UCL	12.55	95% Bootstrap-t UCL	16.36
95% Hall's Bootstrap UCL	11.77	95% Percentile Bootstrap UCL	12.97
95% BCA Bootstrap UCL	13.68		
90% Chebyshev(Mean, Sd) UCL	16.62	95% Chebyshev(Mean, Sd) UCL	20.39
97.5% Chebyshev(Mean, Sd) UCL	25.63	99% Chebyshev(Mean, Sd) UCL	35.91

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 20.39

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.3	Mean	14.46
Maximum	32.9	Median	10.4
SD	7.694	Std. Error of Mean	2.565
Coefficient of Variation	0.532	Skewness	2.06
Mean of logged Data	2.578	SD of logged Data	0.428

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.23	95% Adjusted-CLT UCL (Chen-1995)	20.56
		95% Modified-t UCL (Johnson-1978)	19.53

Nonparametric Distribution Free UCLs

95% CLT UCL	18.68	95% Jackknife UCL	19.23
95% Standard Bootstrap UCL	18.42	95% Bootstrap-t UCL	24.63
95% Hall's Bootstrap UCL	35.53	95% Percentile Bootstrap UCL	18.72
95% BCA Bootstrap UCL	20.01		
90% Chebyshev(Mean, Sd) UCL	22.16	95% Chebyshev(Mean, Sd) UCL	25.64
97.5% Chebyshev(Mean, Sd) UCL	30.48	99% Chebyshev(Mean, Sd) UCL	39.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	7.75	Mean	19.46
Maximum	58.3	Median	9.28
SD	18.52	Std. Error of Mean	6.172
Coefficient of Variation	0.952	Skewness	1.588
Mean of logged Data	2.65	SD of logged Data	0.786

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.93	95% Adjusted-CLT UCL (Chen-1995)	33.1
		95% Modified-t UCL (Johnson-1978)	31.48

Nonparametric Distribution Free UCLs

95% CLT UCL	29.61	95% Jackknife UCL	30.93
95% Standard Bootstrap UCL	29.15	95% Bootstrap-t UCL	55.37
95% Hall's Bootstrap UCL	42.33	95% Percentile Bootstrap UCL	30.24
95% BCA Bootstrap UCL	32.52		
90% Chebyshev(Mean, Sd) UCL	37.97	95% Chebyshev(Mean, Sd) UCL	46.36
97.5% Chebyshev(Mean, Sd) UCL	58	99% Chebyshev(Mean, Sd) UCL	80.87

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	46.36

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	33.4	Mean	47.52
Maximum	72.6	Median	38.3
SD	17.4	Std. Error of Mean	5.801
Coefficient of Variation	0.366	Skewness	0.826
Mean of logged Data	3.807	SD of logged Data	0.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.31	95% Adjusted-CLT UCL (Chen-1995)	58.77
		95% Modified-t UCL (Johnson-1978)	58.58

Nonparametric Distribution Free UCLs

95% CLT UCL	57.06	95% Jackknife UCL	58.31
95% Standard Bootstrap UCL	56.36	95% Bootstrap-t UCL	60.11
95% Hall's Bootstrap UCL	53.31	95% Percentile Bootstrap UCL	55.84
95% BCA Bootstrap UCL	58.44		
90% Chebyshev(Mean, Sd) UCL	64.93	95% Chebyshev(Mean, Sd) UCL	72.81
97.5% Chebyshev(Mean, Sd) UCL	83.75	99% Chebyshev(Mean, Sd) UCL	105.2

Suggested UCL to Use

95% Student's-t UCL	58.31	or 95% Modified-t UCL	58.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/9/2020 12:37:15 PM
From File	Table 1. Parcel Analytical Results (Kingman APN32404280) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.809	Mean	1.258
Maximum	1.68	Median	1.22
SD	0.278	Std. Error of Mean	0.0928
Coefficient of Variation	0.221	Skewness	-0.141
Mean of logged Data	0.207	SD of logged Data	0.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.431	95% Adjusted-CLT UCL (Chen-1995)	1.406
		95% Modified-t UCL (Johnson-1978)	1.43

Nonparametric Distribution Free UCLs

95% CLT UCL	1.411	95% Jackknife UCL	1.431
95% Standard Bootstrap UCL	1.403	95% Bootstrap-t UCL	1.429
95% Hall's Bootstrap UCL	1.408	95% Percentile Bootstrap UCL	1.402
95% BCA Bootstrap UCL	1.399		
90% Chebyshev(Mean, Sd) UCL	1.537	95% Chebyshev(Mean, Sd) UCL	1.663
97.5% Chebyshev(Mean, Sd) UCL	1.838	99% Chebyshev(Mean, Sd) UCL	2.182

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.315	Mean	0.472
Maximum	0.52	Median	0.49
SD	0.0637	Std. Error of Mean	0.0212
Coefficient of Variation	0.135	Skewness	-2.223
Mean of logged Data	-0.761	SD of logged Data	0.156

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.511	95% Adjusted-CLT UCL (Chen-1995)	0.49
		95% Modified-t UCL (Johnson-1978)	0.509

Nonparametric Distribution Free UCLs

95% CLT UCL	0.507	95% Jackknife UCL	0.511
95% Standard Bootstrap UCL	0.504	95% Bootstrap-t UCL	0.5
95% Hall's Bootstrap UCL	0.496	95% Percentile Bootstrap UCL	0.499
95% BCA Bootstrap UCL	0.495		
90% Chebyshev(Mean, Sd) UCL	0.536	95% Chebyshev(Mean, Sd) UCL	0.564
97.5% Chebyshev(Mean, Sd) UCL	0.604	99% Chebyshev(Mean, Sd) UCL	0.683

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	3.012
Maximum	6.1	Median	2.115
SD	1.533	Std. Error of Mean	0.511
Coefficient of Variation	0.509	Skewness	1.344
Mean of logged Data	1.007	SD of logged Data	0.442

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.962	95% Adjusted-CLT UCL (Chen-1995)	4.097
		95% Modified-t UCL (Johnson-1978)	4

Nonparametric Distribution Free UCLs

95% CLT UCL	3.852	95% Jackknife UCL	3.962
95% Standard Bootstrap UCL	3.796	95% Bootstrap-t UCL	4.87
95% Hall's Bootstrap UCL	3.695	95% Percentile Bootstrap UCL	3.854
95% BCA Bootstrap UCL	4.012		
90% Chebyshev(Mean, Sd) UCL	4.544	95% Chebyshev(Mean, Sd) UCL	5.239
97.5% Chebyshev(Mean, Sd) UCL	6.202	99% Chebyshev(Mean, Sd) UCL	8.095

Suggested UCL to Use

95% Student's-t UCL	3.962	or 95% Modified-t UCL	4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	4.099
Maximum	7.53	Median	4.63
SD	2.186	Std. Error of Mean	0.729
Coefficient of Variation	0.533	Skewness	0.452
Mean of logged Data	1.275	SD of logged Data	0.56

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.454	95% Adjusted-CLT UCL (Chen-1995)	5.414
		95% Modified-t UCL (Johnson-1978)	5.472

Nonparametric Distribution Free UCLs

95% CLT UCL	5.297	95% Jackknife UCL	5.454
95% Standard Bootstrap UCL	5.202	95% Bootstrap-t UCL	5.824
95% Hall's Bootstrap UCL	5.446	95% Percentile Bootstrap UCL	5.269
95% BCA Bootstrap UCL	5.298		
90% Chebyshev(Mean, Sd) UCL	6.285	95% Chebyshev(Mean, Sd) UCL	7.275

97.5% Chebyshev(Mean, Sd) UCL	8.649	99% Chebyshev(Mean, Sd) UCL	11.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.67	Mean	5.533
Maximum	12.4	Median	3.255
SD	3.697	Std. Error of Mean	1.232
Coefficient of Variation	0.668	Skewness	1.155
Mean of logged Data	1.538	SD of logged Data	0.596

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.824	95% Adjusted-CLT UCL (Chen-1995)	8.067
		95% Modified-t UCL (Johnson-1978)	7.904

Nonparametric Distribution Free UCLs

95% CLT UCL	7.56	95% Jackknife UCL	7.824
95% Standard Bootstrap UCL	7.443	95% Bootstrap-t UCL	9.537
95% Hall's Bootstrap UCL	7.369	95% Percentile Bootstrap UCL	7.617
95% BCA Bootstrap UCL	7.774		
90% Chebyshev(Mean, Sd) UCL	9.23	95% Chebyshev(Mean, Sd) UCL	10.9
97.5% Chebyshev(Mean, Sd) UCL	13.23	99% Chebyshev(Mean, Sd) UCL	17.79

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	3.045	Mean	6.079
Maximum	19.44	Median	3.255
SD	5.333	Std. Error of Mean	1.778
Coefficient of Variation	0.877	Skewness	2.394
Mean of logged Data	1.582	SD of logged Data	0.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.385	95% Adjusted-CLT UCL (Chen-1995)	10.52
		95% Modified-t UCL (Johnson-1978)	9.621

Nonparametric Distribution Free UCLs

95% CLT UCL	9.003	95% Jackknife UCL	9.385
95% Standard Bootstrap UCL	8.938	95% Bootstrap-t UCL	14.43
95% Hall's Bootstrap UCL	18.61	95% Percentile Bootstrap UCL	9.409
95% BCA Bootstrap UCL	10.65		
90% Chebyshev(Mean, Sd) UCL	11.41	95% Chebyshev(Mean, Sd) UCL	13.83
97.5% Chebyshev(Mean, Sd) UCL	17.18	99% Chebyshev(Mean, Sd) UCL	23.77

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	4.793
Maximum	11.6	Median	2.57
SD	3.756	Std. Error of Mean	1.252
Coefficient of Variation	0.784	Skewness	1.026
Mean of logged Data	1.312	SD of logged Data	0.738

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.121	95% Adjusted-CLT UCL (Chen-1995)	7.309
		95% Modified-t UCL (Johnson-1978)	7.192

Nonparametric Distribution Free UCLs

95% CLT UCL	6.852	95% Jackknife UCL	7.121
95% Standard Bootstrap UCL	6.693	95% Bootstrap-t UCL	8.159
95% Hall's Bootstrap UCL	6.528	95% Percentile Bootstrap UCL	6.805
95% BCA Bootstrap UCL	7.24		
90% Chebyshev(Mean, Sd) UCL	8.548	95% Chebyshev(Mean, Sd) UCL	10.25
97.5% Chebyshev(Mean, Sd) UCL	12.61	99% Chebyshev(Mean, Sd) UCL	17.25

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.98	Mean	4.858
Maximum	12.5	Median	2.48
SD	3.85	Std. Error of Mean	1.283
Coefficient of Variation	0.792	Skewness	1.222
Mean of logged Data	1.331	SD of logged Data	0.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.245	95% Adjusted-CLT UCL (Chen-1995)	7.528
		95% Modified-t UCL (Johnson-1978)	7.332

Nonparametric Distribution Free UCLs

95% CLT UCL	6.969	95% Jackknife UCL	7.245
95% Standard Bootstrap UCL	6.861	95% Bootstrap-t UCL	8.509
95% Hall's Bootstrap UCL	7.013	95% Percentile Bootstrap UCL	6.99
95% BCA Bootstrap UCL	7.371		
90% Chebyshev(Mean, Sd) UCL	8.708	95% Chebyshev(Mean, Sd) UCL	10.45
97.5% Chebyshev(Mean, Sd) UCL	12.87	99% Chebyshev(Mean, Sd) UCL	17.63

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.52	Mean	4.13
Maximum	7.37	Median	3.175
SD	1.773	Std. Error of Mean	0.591
Coefficient of Variation	0.429	Skewness	1.169
Mean of logged Data	1.347	SD of logged Data	0.385

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.229	95% Adjusted-CLT UCL (Chen-1995)	5.348
		95% Modified-t UCL (Johnson-1978)	5.267

Nonparametric Distribution Free UCLs

95% CLT UCL	5.102	95% Jackknife UCL	5.229
95% Standard Bootstrap UCL	5.062	95% Bootstrap-t UCL	6.288
95% Hall's Bootstrap UCL	5.172	95% Percentile Bootstrap UCL	5.079
95% BCA Bootstrap UCL	5.299		
90% Chebyshev(Mean, Sd) UCL	5.903	95% Chebyshev(Mean, Sd) UCL	6.706
97.5% Chebyshev(Mean, Sd) UCL	7.821	99% Chebyshev(Mean, Sd) UCL	10.01

Suggested UCL to Use

95% Student's-t UCL	5.229	or 95% Modified-t UCL	5.267

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.63	Mean	2.528
Maximum	3.38	Median	2.49
SD	0.496	Std. Error of Mean	0.165
Coefficient of Variation	0.196	Skewness	-0.00138

Mean of logged Data	0.909	SD of logged Data	0.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.835	95% Adjusted-CLT UCL (Chen-1995)	2.8
		95% Modified-t UCL (Johnson-1978)	2.835

Nonparametric Distribution Free UCLs

95% CLT UCL	2.8	95% Jackknife UCL	2.835
95% Standard Bootstrap UCL	2.783	95% Bootstrap-t UCL	2.858
95% Hall's Bootstrap UCL	2.931	95% Percentile Bootstrap UCL	2.774
95% BCA Bootstrap UCL	2.793		
90% Chebyshev(Mean, Sd) UCL	3.024	95% Chebyshev(Mean, Sd) UCL	3.249
97.5% Chebyshev(Mean, Sd) UCL	3.561	99% Chebyshev(Mean, Sd) UCL	4.174

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.045	Mean	3.693
Maximum	5.92	Median	3.23
SD	1.014	Std. Error of Mean	0.338
Coefficient of Variation	0.274	Skewness	1.79
Mean of logged Data	1.279	SD of logged Data	0.238

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.322	95% Adjusted-CLT UCL (Chen-1995)	4.464

		95% Modified-t UCL (Johnson-1978)	4.355

Nonparametric Distribution Free UCLs

95% CLT UCL	4.249	95% Jackknife UCL	4.322
95% Standard Bootstrap UCL	4.219	95% Bootstrap-t UCL	6.595
95% Hall's Bootstrap UCL	7.003	95% Percentile Bootstrap UCL	4.281
95% BCA Bootstrap UCL	4.476		
90% Chebyshev(Mean, Sd) UCL	4.707	95% Chebyshev(Mean, Sd) UCL	5.166
97.5% Chebyshev(Mean, Sd) UCL	5.803	99% Chebyshev(Mean, Sd) UCL	7.055

Suggested UCL to Use

95% Student's-t UCL	4.322	or 95% Modified-t UCL	4.355

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.21	Mean	5.015
Maximum	11.3	Median	3.255
SD	3.152	Std. Error of Mean	1.051
Coefficient of Variation	0.628	Skewness	1.27
Mean of logged Data	1.462	SD of logged Data	0.56

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.969	95% Adjusted-CLT UCL (Chen-1995)	7.218
		95% Modified-t UCL (Johnson-1978)	7.043

Nonparametric Distribution Free UCLs

95% CLT UCL	6.743	95% Jackknife UCL	6.969
95% Standard Bootstrap UCL	6.663	95% Bootstrap-t UCL	8.559
95% Hall's Bootstrap UCL	6.892	95% Percentile Bootstrap UCL	6.634
95% BCA Bootstrap UCL	7.115		
90% Chebyshev(Mean, Sd) UCL	8.167	95% Chebyshev(Mean, Sd) UCL	9.594
97.5% Chebyshev(Mean, Sd) UCL	11.58	99% Chebyshev(Mean, Sd) UCL	15.47

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.9	Mean	10.88
Maximum	11.4	Median	11.1
SD	0.538	Std. Error of Mean	0.179
Coefficient of Variation	0.0495	Skewness	-1.025
Mean of logged Data	2.386	SD of logged Data	0.0505

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.21	95% Adjusted-CLT UCL (Chen-1995)	11.11
		95% Modified-t UCL (Johnson-1978)	11.2

Nonparametric Distribution Free UCLs

95% CLT UCL	11.17	95% Jackknife UCL	11.21
95% Standard Bootstrap UCL	11.16	95% Bootstrap-t UCL	11.15
95% Hall's Bootstrap UCL	11.1	95% Percentile Bootstrap UCL	11.14
95% BCA Bootstrap UCL	11.11		
90% Chebyshev(Mean, Sd) UCL	11.42	95% Chebyshev(Mean, Sd) UCL	11.66
97.5% Chebyshev(Mean, Sd) UCL	12	99% Chebyshev(Mean, Sd) UCL	12.66

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8	Mean	9.676
Maximum	12	Median	9.25
SD	1.493	Std. Error of Mean	0.498

Coefficient of Variation	0.154	Skewness	0.27
Mean of logged Data	2.259	SD of logged Data	0.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.6	95% Adjusted-CLT UCL (Chen-1995)	10.54
		95% Modified-t UCL (Johnson-1978)	10.61

Nonparametric Distribution Free UCLs

95% CLT UCL	10.49	95% Jackknife UCL	10.6
95% Standard Bootstrap UCL	10.44	95% Bootstrap-t UCL	10.71
95% Hall's Bootstrap UCL	10.43	95% Percentile Bootstrap UCL	10.46
95% BCA Bootstrap UCL	10.48		
90% Chebyshev(Mean, Sd) UCL	11.17	95% Chebyshev(Mean, Sd) UCL	11.84
97.5% Chebyshev(Mean, Sd) UCL	12.78	99% Chebyshev(Mean, Sd) UCL	14.63

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	40.8	Mean	41.76
Maximum	44.6	Median	41.3
SD	1.178	Std. Error of Mean	0.393
Coefficient of Variation	0.0282	Skewness	2.036
Mean of logged Data	3.731	SD of logged Data	0.0276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.49	95% Adjusted-CLT UCL (Chen-1995)	42.69
		95% Modified-t UCL (Johnson-1978)	42.53

Nonparametric Distribution Free UCLs

95% CLT UCL	42.4	95% Jackknife UCL	42.49
95% Standard Bootstrap UCL	42.38	95% Bootstrap-t UCL	43.17
95% Hall's Bootstrap UCL	44.97	95% Percentile Bootstrap UCL	42.41
95% BCA Bootstrap UCL	42.67		
90% Chebyshev(Mean, Sd) UCL	42.93	95% Chebyshev(Mean, Sd) UCL	43.47
97.5% Chebyshev(Mean, Sd) UCL	44.21	99% Chebyshev(Mean, Sd) UCL	45.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:20:47 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404526) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.684	Mean	2.235
Maximum	4.55	Median	1.95
SD	1.369	Std. Error of Mean	0.456
Coefficient of Variation	0.613	Skewness	0.551
Mean of logged Data	0.615	SD of logged Data	0.679

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.083	95% Adjusted-CLT UCL (Chen-1995)	3.075
		95% Modified-t UCL (Johnson-1978)	3.097

Nonparametric Distribution Free UCLs

95% CLT UCL	2.985	95% Jackknife UCL	3.083
95% Standard Bootstrap UCL	2.94	95% Bootstrap-t UCL	3.279
95% Hall's Bootstrap UCL	2.988	95% Percentile Bootstrap UCL	2.962
95% BCA Bootstrap UCL	3.056		
90% Chebyshev(Mean, Sd) UCL	3.604	95% Chebyshev(Mean, Sd) UCL	4.224
97.5% Chebyshev(Mean, Sd) UCL	5.084	99% Chebyshev(Mean, Sd) UCL	6.775

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.515	Mean	2.185
Maximum	9.52	Median	0.796
SD	2.889	Std. Error of Mean	0.963
Coefficient of Variation	1.322	Skewness	2.493
Mean of logged Data	0.242	SD of logged Data	1.026

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.976	95% Adjusted-CLT UCL (Chen-1995)	4.625
		95% Modified-t UCL (Johnson-1978)	4.11

Nonparametric Distribution Free UCLs

95% CLT UCL	3.77	95% Jackknife UCL	3.976
95% Standard Bootstrap UCL	3.662	95% Bootstrap-t UCL	6.811
95% Hall's Bootstrap UCL	9.249	95% Percentile Bootstrap UCL	3.946
95% BCA Bootstrap UCL	4.696		
90% Chebyshev(Mean, Sd) UCL	5.075	95% Chebyshev(Mean, Sd) UCL	6.384
97.5% Chebyshev(Mean, Sd) UCL	8.2	99% Chebyshev(Mean, Sd) UCL	11.77

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.81	Mean	15.36
Maximum	97.1	Median	4.14
SD	30.9	Std. Error of Mean	10.3
Coefficient of Variation	2.012	Skewness	2.912
Mean of logged Data	1.723	SD of logged Data	1.292

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	34.51	95% Adjusted-CLT UCL (Chen-1995)	42.98
		95% Modified-t UCL (Johnson-1978)	36.17

Nonparametric Distribution Free UCLs

95% CLT UCL	32.3	95% Jackknife UCL	34.51
95% Standard Bootstrap UCL	31.76	95% Bootstrap-t UCL	151.4
95% Hall's Bootstrap UCL	108.9	95% Percentile Bootstrap UCL	35.55
95% BCA Bootstrap UCL	45.63		
90% Chebyshev(Mean, Sd) UCL	46.25	95% Chebyshev(Mean, Sd) UCL	60.25
97.5% Chebyshev(Mean, Sd) UCL	79.67	99% Chebyshev(Mean, Sd) UCL	117.8

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	80.05
Maximum	427	Median	29.3
SD	135	Std. Error of Mean	45
Coefficient of Variation	1.687	Skewness	2.61
Mean of logged Data	3.065	SD of logged Data	1.952

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	163.7	95% Adjusted-CLT UCL (Chen-1995)	195.9
		95% Modified-t UCL (Johnson-1978)	170.3

Nonparametric Distribution Free UCLs

95% CLT UCL	154.1	95% Jackknife UCL	163.7
95% Standard Bootstrap UCL	149.5	95% Bootstrap-t UCL	332.4
95% Hall's Bootstrap UCL	419.2	95% Percentile Bootstrap UCL	163.2
95% BCA Bootstrap UCL	200.6		
90% Chebyshev(Mean, Sd) UCL	215	95% Chebyshev(Mean, Sd) UCL	276.2
97.5% Chebyshev(Mean, Sd) UCL	361.1	99% Chebyshev(Mean, Sd) UCL	527.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	99.49
Maximum	421	Median	39
SD	134.9	Std. Error of Mean	44.98
Coefficient of Variation	1.356	Skewness	1.968
Mean of logged Data	3.319	SD of logged Data	2.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	183.1	95% Adjusted-CLT UCL (Chen-1995)	205
		95% Modified-t UCL (Johnson-1978)	188

Nonparametric Distribution Free UCLs

95% CLT UCL	173.5	95% Jackknife UCL	183.1
95% Standard Bootstrap UCL	168.5	95% Bootstrap-t UCL	256.3
95% Hall's Bootstrap UCL	434.6	95% Percentile Bootstrap UCL	174.5
95% BCA Bootstrap UCL	194.8		
90% Chebyshev(Mean, Sd) UCL	234.4	95% Chebyshev(Mean, Sd) UCL	295.5
97.5% Chebyshev(Mean, Sd) UCL	380.4	99% Chebyshev(Mean, Sd) UCL	547

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	132.2
Maximum	617	Median	50.3
SD	195.4	Std. Error of Mean	65.13
Coefficient of Variation	1.478	Skewness	2.287
Mean of logged Data	3.617	SD of logged Data	2.007

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	253.3	95% Adjusted-CLT UCL (Chen-1995)	292.4
		95% Modified-t UCL (Johnson-1978)	261.6

Nonparametric Distribution Free UCLs

95% CLT UCL	239.3	95% Jackknife UCL	253.3
95% Standard Bootstrap UCL	233.4	95% Bootstrap-t UCL	403.8
95% Hall's Bootstrap UCL	619.7	95% Percentile Bootstrap UCL	235.4
95% BCA Bootstrap UCL	289.9		
90% Chebyshev(Mean, Sd) UCL	327.6	95% Chebyshev(Mean, Sd) UCL	416.1
97.5% Chebyshev(Mean, Sd) UCL	538.9	99% Chebyshev(Mean, Sd) UCL	780.3

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	69.33
Maximum	291	Median	26.9
SD	92.65	Std. Error of Mean	30.88
Coefficient of Variation	1.337	Skewness	2
Mean of logged Data	3.222	SD of logged Data	1.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	126.8	95% Adjusted-CLT UCL (Chen-1995)	142.1
		95% Modified-t UCL (Johnson-1978)	130.2

Nonparametric Distribution Free UCLs

95% CLT UCL	120.1	95% Jackknife UCL	126.8

95% Standard Bootstrap UCL	117.5	95% Bootstrap-t UCL	182.7
95% Hall's Bootstrap UCL	305.6	95% Percentile Bootstrap UCL	121.5
95% BCA Bootstrap UCL	138.1		
90% Chebyshev(Mean, Sd) UCL	162	95% Chebyshev(Mean, Sd) UCL	203.9
97.5% Chebyshev(Mean, Sd) UCL	262.2	99% Chebyshev(Mean, Sd) UCL	376.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	59.27
Maximum	293	Median	22.2
SD	92.48	Std. Error of Mean	30.83
Coefficient of Variation	1.56	Skewness	2.451
Mean of logged Data	2.899	SD of logged Data	1.833

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	116.6	95% Adjusted-CLT UCL (Chen-1995)	136.9
		95% Modified-t UCL (Johnson-1978)	120.8

Nonparametric Distribution Free UCLs

95% CLT UCL	110	95% Jackknife UCL	116.6
95% Standard Bootstrap UCL	107.9	95% Bootstrap-t UCL	205.5
95% Hall's Bootstrap UCL	290.7	95% Percentile Bootstrap UCL	110.7
95% BCA Bootstrap UCL	143		
90% Chebyshev(Mean, Sd) UCL	151.7	95% Chebyshev(Mean, Sd) UCL	193.6
97.5% Chebyshev(Mean, Sd) UCL	251.8	99% Chebyshev(Mean, Sd) UCL	366

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	91.97
Maximum	457	Median	35.6
SD	144.3	Std. Error of Mean	48.1
Coefficient of Variation	1.569	Skewness	2.458
Mean of logged Data	3.207	SD of logged Data	2.027

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	181.4	95% Adjusted-CLT UCL (Chen-1995)	213.2
		95% Modified-t UCL (Johnson-1978)	188

Nonparametric Distribution Free UCLs

95% CLT UCL	171.1	95% Jackknife UCL	181.4
95% Standard Bootstrap UCL	166	95% Bootstrap-t UCL	310.1
95% Hall's Bootstrap UCL	450.1	95% Percentile Bootstrap UCL	174.6
95% BCA Bootstrap UCL	213		
90% Chebyshev(Mean, Sd) UCL	236.3	95% Chebyshev(Mean, Sd) UCL	301.6
97.5% Chebyshev(Mean, Sd) UCL	392.4	99% Chebyshev(Mean, Sd) UCL	570.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	21.69
Maximum	99	Median	7.23
SD	30.7	Std. Error of Mean	10.23
Coefficient of Variation	1.416	Skewness	2.421
Mean of logged Data	2.37	SD of logged Data	1.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.72	95% Adjusted-CLT UCL (Chen-1995)	47.35
		95% Modified-t UCL (Johnson-1978)	42.1

Nonparametric Distribution Free UCLs

95% CLT UCL	38.52	95% Jackknife UCL	40.72
95% Standard Bootstrap UCL	37.53	95% Bootstrap-t UCL	67.65
95% Hall's Bootstrap UCL	96.58	95% Percentile Bootstrap UCL	39.91
95% BCA Bootstrap UCL	46.07		
90% Chebyshev(Mean, Sd) UCL	52.39	95% Chebyshev(Mean, Sd) UCL	66.3
97.5% Chebyshev(Mean, Sd) UCL	85.6	99% Chebyshev(Mean, Sd) UCL	123.5

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	149.1
Maximum	862	Median	52.1
SD	273.8	Std. Error of Mean	91.27
Coefficient of Variation	1.837	Skewness	2.74
Mean of logged Data	3.429	SD of logged Data	2.214

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	318.8	95% Adjusted-CLT UCL (Chen-1995)	388.3
		95% Modified-t UCL (Johnson-1978)	332.7

Nonparametric Distribution Free UCLs

95% CLT UCL	299.2	95% Jackknife UCL	318.8
95% Standard Bootstrap UCL	290.3	95% Bootstrap-t UCL	703.8
95% Hall's Bootstrap UCL	856.8	95% Percentile Bootstrap UCL	323.1
95% BCA Bootstrap UCL	398.1		
90% Chebyshev(Mean, Sd) UCL	422.9	95% Chebyshev(Mean, Sd) UCL	546.9
97.5% Chebyshev(Mean, Sd) UCL	719.1	99% Chebyshev(Mean, Sd) UCL	1057

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.28	Mean	1.798
Maximum	4.08	Median	1.33
SD	0.897	Std. Error of Mean	0.299
Coefficient of Variation	0.499	Skewness	2.511
Mean of logged Data	0.511	SD of logged Data	0.377

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.**

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.354	95% Adjusted-CLT UCL (Chen-1995)	2.557
		95% Modified-t UCL (Johnson-1978)	2.396

Nonparametric Distribution Free UCLs

95% CLT UCL	2.29	95% Jackknife UCL	2.354
95% Standard Bootstrap UCL	2.254	95% Bootstrap-t UCL	3.252
95% Hall's Bootstrap UCL	4.038	95% Percentile Bootstrap UCL	2.292
95% BCA Bootstrap UCL	2.507		
90% Chebyshev(Mean, Sd) UCL	2.695	95% Chebyshev(Mean, Sd) UCL	3.102
97.5% Chebyshev(Mean, Sd) UCL	3.666	99% Chebyshev(Mean, Sd) UCL	4.774

Suggested UCL to Use

95% Student's-t UCL	2.354	or 95% Modified-t UCL	2.396

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.205	Mean	84.48
Maximum	361	Median	33.6
SD	114.7	Std. Error of Mean	38.24
Coefficient of Variation	1.358	Skewness	2.053
Mean of logged Data	3.355	SD of logged Data	1.809

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	155.6	95% Adjusted-CLT UCL (Chen-1995)	175.3
		95% Modified-t UCL (Johnson-1978)	159.9

Nonparametric Distribution Free UCLs

95% CLT UCL	147.4	95% Jackknife UCL	155.6
95% Standard Bootstrap UCL	143.9	95% Bootstrap-t UCL	226.5
95% Hall's Bootstrap UCL	379.5	95% Percentile Bootstrap UCL	149.6
95% BCA Bootstrap UCL	174.8		
90% Chebyshev(Mean, Sd) UCL	199.2	95% Chebyshev(Mean, Sd) UCL	251.2
97.5% Chebyshev(Mean, Sd) UCL	323.3	99% Chebyshev(Mean, Sd) UCL	465

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.51	Mean	4.197
Maximum	8.77	Median	3.75
SD	2.354	Std. Error of Mean	0.785
Coefficient of Variation	0.561	Skewness	0.823
Mean of logged Data	1.286	SD of logged Data	0.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	5.656	95% Adjusted-CLT UCL (Chen-1995)	5.717
		95% Modified-t UCL (Johnson-1978)	5.691

Nonparametric Distribution Free UCLs

95% CLT UCL	5.487	95% Jackknife UCL	5.656
95% Standard Bootstrap UCL	5.409	95% Bootstrap-t UCL	6.051
95% Hall's Bootstrap UCL	6.066	95% Percentile Bootstrap UCL	5.438
95% BCA Bootstrap UCL	5.578		
90% Chebyshev(Mean, Sd) UCL	6.55	95% Chebyshev(Mean, Sd) UCL	7.616
97.5% Chebyshev(Mean, Sd) UCL	9.096	99% Chebyshev(Mean, Sd) UCL	12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	69.3
Maximum	420	Median	23.9
SD	133.5	Std. Error of Mean	44.51
Coefficient of Variation	1.927	Skewness	2.832
Mean of logged Data	3.003	SD of logged Data	1.672

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	152.1	95% Adjusted-CLT UCL (Chen-1995)	187.4
		95% Modified-t UCL (Johnson-1978)	159.1

Nonparametric Distribution Free UCLs

95% CLT UCL	142.5	95% Jackknife UCL	152.1
95% Standard Bootstrap UCL	138.2	95% Bootstrap-t UCL	448.2
95% Hall's Bootstrap UCL	438	95% Percentile Bootstrap UCL	155.5
95% BCA Bootstrap UCL	168.9		
90% Chebyshev(Mean, Sd) UCL	202.8	95% Chebyshev(Mean, Sd) UCL	263.3
97.5% Chebyshev(Mean, Sd) UCL	347.2	99% Chebyshev(Mean, Sd) UCL	512.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.205	Mean	133.9
Maximum	729	Median	49.1
SD	230.6	Std. Error of Mean	76.86
Coefficient of Variation	1.721	Skewness	2.651
Mean of logged Data	3.543	SD of logged Data	1.985

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	276.9	95% Adjusted-CLT UCL (Chen-1995)	332.9
		95% Modified-t UCL (Johnson-1978)	288.2

Nonparametric Distribution Free UCLs

95% CLT UCL	260.4	95% Jackknife UCL	276.9
95% Standard Bootstrap UCL	254.1	95% Bootstrap-t UCL	584.1
95% Hall's Bootstrap UCL	721.3	95% Percentile Bootstrap UCL	275.9
95% BCA Bootstrap UCL	358		
90% Chebyshev(Mean, Sd) UCL	364.5	95% Chebyshev(Mean, Sd) UCL	468.9
97.5% Chebyshev(Mean, Sd) UCL	613.9	99% Chebyshev(Mean, Sd) UCL	898.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.62	Mean	6.343
Maximum	13.2	Median	5.6
SD	2.628	Std. Error of Mean	0.876
Coefficient of Variation	0.414	Skewness	2.756
Mean of logged Data	1.795	SD of logged Data	0.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.972	95% Adjusted-CLT UCL (Chen-1995)	8.644
		95% Modified-t UCL (Johnson-1978)	8.106

Nonparametric Distribution Free UCLs

95% CLT UCL	7.784	95% Jackknife UCL	7.972
95% Standard Bootstrap UCL	7.696	95% Bootstrap-t UCL	11.9
95% Hall's Bootstrap UCL	13.98	95% Percentile Bootstrap UCL	7.967
95% BCA Bootstrap UCL	8.909		
90% Chebyshev(Mean, Sd) UCL	8.971	95% Chebyshev(Mean, Sd) UCL	10.16
97.5% Chebyshev(Mean, Sd) UCL	11.81	99% Chebyshev(Mean, Sd) UCL	15.06

Suggested UCL to Use

95% Student's-t UCL	7.972	or 95% Modified-t UCL	8.106

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.5	Mean	51.88
Maximum	67.3	Median	45.8
SD	10.35	Std. Error of Mean	3.451
Coefficient of Variation	0.2	Skewness	0.855
Mean of logged Data	3.932	SD of logged Data	0.19

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.3	95% Adjusted-CLT UCL (Chen-1995)	58.61
		95% Modified-t UCL (Johnson-1978)	58.46

Nonparametric Distribution Free UCLs

95% CLT UCL	57.55	95% Jackknife UCL	58.3

95% Standard Bootstrap UCL	57.25	95% Bootstrap-t UCL	59.85
95% Hall's Bootstrap UCL	55.38	95% Percentile Bootstrap UCL	57.1
95% BCA Bootstrap UCL	58.6		
90% Chebyshev(Mean, Sd) UCL	62.23	95% Chebyshev(Mean, Sd) UCL	66.92
97.5% Chebyshev(Mean, Sd) UCL	73.43	99% Chebyshev(Mean, Sd) UCL	86.22

Suggested UCL to Use

95% Student's-t UCL	58.3	or 95% Modified-t UCL	58.46

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.16/12/2020 7:22:50 AM
From File	Table 1Kingman APN 32404527 - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	1
Minimum	1.32	Mean	2.734
Maximum	4.61	Median	2.18
SD	1.213	Std. Error of Mean	0.404
Coefficient of Variation	0.444	Skewness	0.33
Mean of logged Data	0.913	SD of logged Data	0.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.486	95% Adjusted-CLT UCL (Chen-1995)	3.447
		95% Modified-t UCL (Johnson-1978)	3.494

Nonparametric Distribution Free UCLs

95% CLT UCL	3.399	95% Jackknife UCL	3.486
95% Standard Bootstrap UCL	3.369	95% Bootstrap-t UCL	3.537
95% Hall's Bootstrap UCL	3.299	95% Percentile Bootstrap UCL	3.352
95% BCA Bootstrap UCL	3.38		
90% Chebyshev(Mean, Sd) UCL	3.947	95% Chebyshev(Mean, Sd) UCL	4.497
97.5% Chebyshev(Mean, Sd) UCL	5.259	99% Chebyshev(Mean, Sd) UCL	6.757

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	1
Minimum	0.498	Mean	2.923
Maximum	8.56	Median	2.23
SD	2.923	Std. Error of Mean	0.974
Coefficient of Variation	1	Skewness	1.231
Mean of logged Data	0.576	SD of logged Data	1.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.735	95% Adjusted-CLT UCL (Chen-1995)	4.953
		95% Modified-t UCL (Johnson-1978)	4.801

Nonparametric Distribution Free UCLs

95% CLT UCL	4.526	95% Jackknife UCL	4.735
95% Standard Bootstrap UCL	4.399	95% Bootstrap-t UCL	6.447
95% Hall's Bootstrap UCL	13.29	95% Percentile Bootstrap UCL	4.486
95% BCA Bootstrap UCL	4.799		
90% Chebyshev(Mean, Sd) UCL	5.846	95% Chebyshev(Mean, Sd) UCL	7.169
97.5% Chebyshev(Mean, Sd) UCL	9.007	99% Chebyshev(Mean, Sd) UCL	12.62

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	2
Minimum	2.025	Mean	7.896
Maximum	30.2	Median	5
SD	9.427	Std. Error of Mean	3.333
Coefficient of Variation	1.194	Skewness	2.366
Mean of logged Data	1.617	SD of logged Data	0.954

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

	A–E	F	G–K	L
107	Data appear Gamma Distributed at 5% Significance Level			
108				
109	Assuming Normal Distribution			
110	95% Normal UCL		95% UCLs (Adjusted for Skewness)	
111	95% Student's-t UCL	14.21	95% Adjusted-CLT UCL (Chen-1995)	16.36
112			95% Modified-t UCL (Johnson-1978)	14.68
113				
114	Nonparametric Distribution Free UCLs			
115	95% CLT UCL	13.38	95% Jackknife UCL	14.21
116	95% Standard Bootstrap UCL	13.05	95% Bootstrap-t UCL	24.61
117	95% Hall's Bootstrap UCL	33.6	95% Percentile Bootstrap UCL	14.11
118	95% BCA Bootstrap UCL	15.31		
119	90% Chebyshev(Mean, Sd) UCL	17.89	95% Chebyshev(Mean, Sd) UCL	22.42
120	97.5% Chebyshev(Mean, Sd) UCL	28.71	99% Chebyshev(Mean, Sd) UCL	41.06
121				
122	Suggested UCL to Use			
123	Data appear Gamma, May want to try Gamma Distribution			
124				
125	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
126	Recommendations are based upon data size, data distribution, and skewness.			
127	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
128	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			
129				
130				
131	BENZ(A)ANTHRACENE			
132				
133	General Statistics			
134	Total Number of Observations	9	Number of Distinct Observations	9
135			Number of Missing Observations	1
136	Minimum	2.025	Mean	56.46
137	Maximum	164	Median	55.4
138	SD	54.45	Std. Error of Mean	18.15
139	Coefficient of Variation	0.964	Skewness	0.919
140	Mean of logged Data	3.177	SD of logged Data	1.753
141				
142	Note: Sample size is small (e.g., <10), if data are collected using ISM approach			
143	you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).			
144	Chebyshev UCL can be computed using the Nonparametric and All UCL Options.			
145				
146	Nonparametric Distribution Free UCL Statistics			
147	Data appear Normal Distributed at 5% Significance Level			
148				
149	Assuming Normal Distribution			
150	95% Normal UCL		95% UCLs (Adjusted for Skewness)	
151	95% Student's-t UCL	90.21	95% Adjusted-CLT UCL (Chen-1995)	92.26
152			95% Modified-t UCL (Johnson-1978)	91.14
153				
154	Nonparametric Distribution Free UCLs			
155	95% CLT UCL	86.32	95% Jackknife UCL	90.21
156	95% Standard Bootstrap UCL	84.4	95% Bootstrap-t UCL	101.2
157	95% Hall's Bootstrap UCL	113.2	95% Percentile Bootstrap UCL	86.52
158	95% BCA Bootstrap UCL	89.72		
159	90% Chebyshev(Mean, Sd) UCL	110.9	95% Chebyshev(Mean, Sd) UCL	135.6

97.5% Chebyshev(Mean, Sd) UCL	169.8	99% Chebyshev(Mean, Sd) UCL	237.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	1.52	Mean	72.91
Maximum	204	Median	73.5
SD	69.34	Std. Error of Mean	23.11
Coefficient of Variation	0.951	Skewness	0.748
Mean of logged Data	3.306	SD of logged Data	1.962

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	115.9	95% Adjusted-CLT UCL (Chen-1995)	117.1
		95% Modified-t UCL (Johnson-1978)	116.8

Nonparametric Distribution Free UCLs

95% CLT UCL	110.9	95% Jackknife UCL	115.9
95% Standard Bootstrap UCL	108.9	95% Bootstrap-t UCL	126.5
95% Hall's Bootstrap UCL	130.9	95% Percentile Bootstrap UCL	111.1
95% BCA Bootstrap UCL	109.5		
90% Chebyshev(Mean, Sd) UCL	142.2	95% Chebyshev(Mean, Sd) UCL	173.7
97.5% Chebyshev(Mean, Sd) UCL	217.2	99% Chebyshev(Mean, Sd) UCL	302.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	2.48	Mean	91.7
Maximum	249	Median	98.2
SD	83.97	Std. Error of Mean	27.99
Coefficient of Variation	0.916	Skewness	0.654
Mean of logged Data	3.623	SD of logged Data	1.848

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	143.8	95% Adjusted-CLT UCL (Chen-1995)	144.3
		95% Modified-t UCL (Johnson-1978)	144.8

Nonparametric Distribution Free UCLs

95% CLT UCL	137.7	95% Jackknife UCL	143.8
95% Standard Bootstrap UCL	135.9	95% Bootstrap-t UCL	151
95% Hall's Bootstrap UCL	158.7	95% Percentile Bootstrap UCL	136.4
95% BCA Bootstrap UCL	142.2		
90% Chebyshev(Mean, Sd) UCL	175.7	95% Chebyshev(Mean, Sd) UCL	213.7
97.5% Chebyshev(Mean, Sd) UCL	266.5	99% Chebyshev(Mean, Sd) UCL	370.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	3.12	Mean	58.86
Maximum	157	Median	64.7
SD	53.12	Std. Error of Mean	17.71
Coefficient of Variation	0.902	Skewness	0.619
Mean of logged Data	3.299	SD of logged Data	1.649

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	91.79	95% Adjusted-CLT UCL (Chen-1995)	91.89
		95% Modified-t UCL (Johnson-1978)	92.39

Nonparametric Distribution Free UCLs

95% CLT UCL	87.98	95% Jackknife UCL	91.79
95% Standard Bootstrap UCL	86.76	95% Bootstrap-t UCL	96.96
95% Hall's Bootstrap UCL	99.77	95% Percentile Bootstrap UCL	87.5
95% BCA Bootstrap UCL	88.65		
90% Chebyshev(Mean, Sd) UCL	112	95% Chebyshev(Mean, Sd) UCL	136
97.5% Chebyshev(Mean, Sd) UCL	169.4	99% Chebyshev(Mean, Sd) UCL	235

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	2.025	Mean	39
Maximum	101	Median	42.1
SD	34.73	Std. Error of Mean	11.58
Coefficient of Variation	0.89	Skewness	0.532
Mean of logged Data	2.898	SD of logged Data	1.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.53	95% Adjusted-CLT UCL (Chen-1995)	60.24
		95% Modified-t UCL (Johnson-1978)	60.87

Nonparametric Distribution Free UCLs

95% CLT UCL	58.04	95% Jackknife UCL	60.53
95% Standard Bootstrap UCL	57.3	95% Bootstrap-t UCL	65.12
95% Hall's Bootstrap UCL	62.87	95% Percentile Bootstrap UCL	57.51
95% BCA Bootstrap UCL	58.56		

90% Chebyshev(Mean, Sd) UCL	73.73	95% Chebyshev(Mean, Sd) UCL	89.46
97.5% Chebyshev(Mean, Sd) UCL	111.3	99% Chebyshev(Mean, Sd) UCL	154.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	2.32	Mean	82.82
Maximum	221	Median	84.1
SD	75.74	Std. Error of Mean	25.25
Coefficient of Variation	0.914	Skewness	0.628
Mean of logged Data	3.532	SD of logged Data	1.829

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	129.8	95% Adjusted-CLT UCL (Chen-1995)	130
		95% Modified-t UCL (Johnson-1978)	130.6

Nonparametric Distribution Free UCLs

95% CLT UCL	124.3	95% Jackknife UCL	129.8
95% Standard Bootstrap UCL	121.3	95% Bootstrap-t UCL	140.9
95% Hall's Bootstrap UCL	143.3	95% Percentile Bootstrap UCL	122.7
95% BCA Bootstrap UCL	121.1		
90% Chebyshev(Mean, Sd) UCL	158.6	95% Chebyshev(Mean, Sd) UCL	192.9
97.5% Chebyshev(Mean, Sd) UCL	240.5	99% Chebyshev(Mean, Sd) UCL	334

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	3.115	Mean	15.03
Maximum	37.7	Median	15.2
SD	12.07	Std. Error of Mean	4.022
Coefficient of Variation	0.803	Skewness	0.828
Mean of logged Data	2.346	SD of logged Data	0.977

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.51	95% Adjusted-CLT UCL (Chen-1995)	22.83
		95% Modified-t UCL (Johnson-1978)	22.69

Nonparametric Distribution Free UCLs

95% CLT UCL	21.65	95% Jackknife UCL	22.51
95% Standard Bootstrap UCL	21.25	95% Bootstrap-t UCL	24.57
95% Hall's Bootstrap UCL	27.46	95% Percentile Bootstrap UCL	21.62
95% BCA Bootstrap UCL	22.33		
90% Chebyshev(Mean, Sd) UCL	27.1	95% Chebyshev(Mean, Sd) UCL	32.56
97.5% Chebyshev(Mean, Sd) UCL	40.15	99% Chebyshev(Mean, Sd) UCL	55.05

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	2.67	Mean	94.18
Maximum	282	Median	94.9
SD	91.25	Std. Error of Mean	30.42
Coefficient of Variation	0.969	Skewness	1.021
Mean of logged Data	3.659	SD of logged Data	1.813

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	150.7	95% Adjusted-CLT UCL (Chen-1995)	155.3
		95% Modified-t UCL (Johnson-1978)	152.5

Nonparametric Distribution Free UCLs

95% CLT UCL	144.2	95% Jackknife UCL	150.7
95% Standard Bootstrap UCL	141.2	95% Bootstrap-t UCL	164.2
95% Hall's Bootstrap UCL	193.5	95% Percentile Bootstrap UCL	144.3
95% BCA Bootstrap UCL	154.9		
90% Chebyshev(Mean, Sd) UCL	185.4	95% Chebyshev(Mean, Sd) UCL	226.8
97.5% Chebyshev(Mean, Sd) UCL	284.1	99% Chebyshev(Mean, Sd) UCL	396.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	1.14	Mean	1.899
Maximum	4.99	Median	1.305
SD	1.247	Std. Error of Mean	0.416
Coefficient of Variation	0.656	Skewness	2.339
Mean of logged Data	0.513	SD of logged Data	0.486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.672	95% Adjusted-CLT UCL (Chen-1995)	2.929
		95% Modified-t UCL (Johnson-1978)	2.726

Nonparametric Distribution Free UCLs

95% CLT UCL	2.583	95% Jackknife UCL	2.672
95% Standard Bootstrap UCL	2.543	95% Bootstrap-t UCL	4.769
95% Hall's Bootstrap UCL	5.096	95% Percentile Bootstrap UCL	2.603

95% BCA Bootstrap UCL	2.923		
90% Chebyshev(Mean, Sd) UCL	3.146	95% Chebyshev(Mean, Sd) UCL	3.711
97.5% Chebyshev(Mean, Sd) UCL	4.495	99% Chebyshev(Mean, Sd) UCL	6.035

Suggested UCL to Use

95% Student's-t UCL	2.672	or 95% Modified-t UCL	2.726

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	3.115	Mean	60.21
Maximum	160	Median	65
SD	54.47	Std. Error of Mean	18.16
Coefficient of Variation	0.905	Skewness	0.618
Mean of logged Data	3.319	SD of logged Data	1.652

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	93.98	95% Adjusted-CLT UCL (Chen-1995)	94.08
		95% Modified-t UCL (Johnson-1978)	94.6

Nonparametric Distribution Free UCLs

95% CLT UCL	90.08	95% Jackknife UCL	93.98
95% Standard Bootstrap UCL	88.42	95% Bootstrap-t UCL	100.1
95% Hall's Bootstrap UCL	103.2	95% Percentile Bootstrap UCL	88.7
95% BCA Bootstrap UCL	92.28		
90% Chebyshev(Mean, Sd) UCL	114.7	95% Chebyshev(Mean, Sd) UCL	139.4
97.5% Chebyshev(Mean, Sd) UCL	173.6	99% Chebyshev(Mean, Sd) UCL	240.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	2.22	Mean	4.397
Maximum	8.57	Median	3.9
SD	2.073	Std. Error of Mean	0.691
Coefficient of Variation	0.471	Skewness	1.048
Mean of logged Data	1.388	SD of logged Data	0.454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.681	95% Adjusted-CLT UCL (Chen-1995)	5.791
		95% Modified-t UCL (Johnson-1978)	5.722

Nonparametric Distribution Free UCLs

95% CLT UCL	5.533	95% Jackknife UCL	5.681
95% Standard Bootstrap UCL	5.489	95% Bootstrap-t UCL	6.245
95% Hall's Bootstrap UCL	6.299	95% Percentile Bootstrap UCL	5.553
95% BCA Bootstrap UCL	5.691		
90% Chebyshev(Mean, Sd) UCL	6.469	95% Chebyshev(Mean, Sd) UCL	7.408
97.5% Chebyshev(Mean, Sd) UCL	8.711	99% Chebyshev(Mean, Sd) UCL	11.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	3.115	Mean	45.03
Maximum	145	Median	43.2
SD	45.72	Std. Error of Mean	15.24
Coefficient of Variation	1.015	Skewness	1.369
Mean of logged Data	3.097	SD of logged Data	1.489

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	73.37	95% Adjusted-CLT UCL (Chen-1995)	77.53
		95% Modified-t UCL (Johnson-1978)	74.53

Nonparametric Distribution Free UCLs

95% CLT UCL	70.1	95% Jackknife UCL	73.37
95% Standard Bootstrap UCL	68.42	95% Bootstrap-t UCL	88.01
95% Hall's Bootstrap UCL	195.5	95% Percentile Bootstrap UCL	69.5
95% BCA Bootstrap UCL	74.55		
90% Chebyshev(Mean, Sd) UCL	90.75	95% Chebyshev(Mean, Sd) UCL	111.5
97.5% Chebyshev(Mean, Sd) UCL	140.2	99% Chebyshev(Mean, Sd) UCL	196.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	2.31	Mean	94.76
Maximum	274	Median	96.3
SD	90.45	Std. Error of Mean	30.15
Coefficient of Variation	0.955	Skewness	0.888
Mean of logged Data	3.636	SD of logged Data	1.863

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	150.8	95% Adjusted-CLT UCL (Chen-1995)	153.9
		95% Modified-t UCL (Johnson-1978)	152.3

Nonparametric Distribution Free UCLs

95% CLT UCL	144.3	95% Jackknife UCL	150.8
95% Standard Bootstrap UCL	141.7	95% Bootstrap-t UCL	171.3

95% Hall's Bootstrap UCL	190.6	95% Percentile Bootstrap UCL	143.7
95% BCA Bootstrap UCL	149.7		
90% Chebyshev(Mean, Sd) UCL	185.2	95% Chebyshev(Mean, Sd) UCL	226.2
97.5% Chebyshev(Mean, Sd) UCL	283	99% Chebyshev(Mean, Sd) UCL	394.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	3.755	Mean	10.17
Maximum	12.6	Median	11.1
SD	2.626	Std. Error of Mean	0.875
Coefficient of Variation	0.258	Skewness	-2.126
Mean of logged Data	2.272	SD of logged Data	0.369

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.79	95% Adjusted-CLT UCL (Chen-1995)	10.94
		95% Modified-t UCL (Johnson-1978)	11.69

Nonparametric Distribution Free UCLs

95% CLT UCL	11.61	95% Jackknife UCL	11.79
95% Standard Bootstrap UCL	11.56	95% Bootstrap-t UCL	11.31
95% Hall's Bootstrap UCL	11.15	95% Percentile Bootstrap UCL	11.36
95% BCA Bootstrap UCL	11.08		
90% Chebyshev(Mean, Sd) UCL	12.79	95% Chebyshev(Mean, Sd) UCL	13.98
97.5% Chebyshev(Mean, Sd) UCL	15.63	99% Chebyshev(Mean, Sd) UCL	18.88

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	7.92	Mean	9.922
Maximum	11.9	Median	10.2
SD	1.436	Std. Error of Mean	0.479
Coefficient of Variation	0.145	Skewness	-0.0334
Mean of logged Data	2.285	SD of logged Data	0.147

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.81	95% Adjusted-CLT UCL (Chen-1995)	10.7
		95% Modified-t UCL (Johnson-1978)	10.81

Nonparametric Distribution Free UCLs

95% CLT UCL	10.71	95% Jackknife UCL	10.81
95% Standard Bootstrap UCL	10.67	95% Bootstrap-t UCL	10.83
95% Hall's Bootstrap UCL	10.56	95% Percentile Bootstrap UCL	10.66
95% BCA Bootstrap UCL	10.62		
90% Chebyshev(Mean, Sd) UCL	11.36	95% Chebyshev(Mean, Sd) UCL	12.01
97.5% Chebyshev(Mean, Sd) UCL	12.91	99% Chebyshev(Mean, Sd) UCL	14.68

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	1
Minimum	32.9	Mean	38.98

Maximum	44.7	Median	39.2
SD	3.424	Std. Error of Mean	1.141
Coefficient of Variation	0.0878	Skewness	-0.32
Mean of logged Data	3.659	SD of logged Data	0.0895

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.1	95% Adjusted-CLT UCL (Chen-1995)	40.72
		95% Modified-t UCL (Johnson-1978)	41.08

Nonparametric Distribution Free UCLs

95% CLT UCL	40.85	95% Jackknife UCL	41.1
95% Standard Bootstrap UCL	40.8	95% Bootstrap-t UCL	40.93
95% Hall's Bootstrap UCL	40.92	95% Percentile Bootstrap UCL	40.79
95% BCA Bootstrap UCL	40.71		
90% Chebyshev(Mean, Sd) UCL	42.4	95% Chebyshev(Mean, Sd) UCL	43.95
97.5% Chebyshev(Mean, Sd) UCL	46.1	99% Chebyshev(Mean, Sd) UCL	50.33

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:36:17 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404550) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.6	Mean	5.057
Maximum	9.85	Median	5.03
SD	2.255	Std. Error of Mean	0.752
Coefficient of Variation	0.446	Skewness	1.151
Mean of logged Data	1.539	SD of logged Data	0.426

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.455	95% Adjusted-CLT UCL (Chen-1995)	6.602
		95% Modified-t UCL (Johnson-1978)	6.503

Nonparametric Distribution Free UCLs

95% CLT UCL	6.294	95% Jackknife UCL	6.455
95% Standard Bootstrap UCL	6.218	95% Bootstrap-t UCL	6.92
95% Hall's Bootstrap UCL	7.326	95% Percentile Bootstrap UCL	6.285
95% BCA Bootstrap UCL	6.456		
90% Chebyshev(Mean, Sd) UCL	7.312	95% Chebyshev(Mean, Sd) UCL	8.334
97.5% Chebyshev(Mean, Sd) UCL	9.752	99% Chebyshev(Mean, Sd) UCL	12.54

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.49	Mean	4.974
Maximum	10.7	Median	4.62
SD	4.067	Std. Error of Mean	1.356
Coefficient of Variation	0.818	Skewness	0.106
Mean of logged Data	1.031	SD of logged Data	1.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.495	95% Adjusted-CLT UCL (Chen-1995)	7.255
		95% Modified-t UCL (Johnson-1978)	7.503

Nonparametric Distribution Free UCLs

95% CLT UCL	7.204	95% Jackknife UCL	7.495
95% Standard Bootstrap UCL	7.082	95% Bootstrap-t UCL	7.565
95% Hall's Bootstrap UCL	6.917	95% Percentile Bootstrap UCL	7.097
95% BCA Bootstrap UCL	7.156		
90% Chebyshev(Mean, Sd) UCL	9.041	95% Chebyshev(Mean, Sd) UCL	10.88
97.5% Chebyshev(Mean, Sd) UCL	13.44	99% Chebyshev(Mean, Sd) UCL	18.46

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	14.85
Maximum	24.2	Median	21.9
SD	10.28	Std. Error of Mean	3.425
Coefficient of Variation	0.692	Skewness	-0.501
Mean of logged Data	2.259	SD of logged Data	1.175

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	21.22	95% Adjusted-CLT UCL (Chen-1995)	19.87
		95% Modified-t UCL (Johnson-1978)	21.12

Nonparametric Distribution Free UCLs

95% CLT UCL	20.48	95% Jackknife UCL	21.22
95% Standard Bootstrap UCL	20.04	95% Bootstrap-t UCL	20.73
95% Hall's Bootstrap UCL	19.21	95% Percentile Bootstrap UCL	20.23
95% BCA Bootstrap UCL	19.43		
90% Chebyshev(Mean, Sd) UCL	25.13	95% Chebyshev(Mean, Sd) UCL	29.78
97.5% Chebyshev(Mean, Sd) UCL	36.24	99% Chebyshev(Mean, Sd) UCL	48.93

Suggested UCL to Use

95% Hall's Bootstrap UCL 19.21

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	134.8
Maximum	409	Median	110
SD	141.7	Std. Error of Mean	47.23
Coefficient of Variation	1.051	Skewness	1.052
Mean of logged Data	3.816	SD of logged Data	2.072

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	222.6	95% Adjusted-CLT UCL (Chen-1995)	230.1
		95% Modified-t UCL (Johnson-1978)	225.3

Nonparametric Distribution Free UCLs

95% CLT UCL	212.4	95% Jackknife UCL	222.6
95% Standard Bootstrap UCL	206.7	95% Bootstrap-t UCL	270.6
95% Hall's Bootstrap UCL	352.5	95% Percentile Bootstrap UCL	210.7
95% BCA Bootstrap UCL	228.8		
90% Chebyshev(Mean, Sd) UCL	276.5	95% Chebyshev(Mean, Sd) UCL	340.6
97.5% Chebyshev(Mean, Sd) UCL	429.7	99% Chebyshev(Mean, Sd) UCL	604.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	185
Maximum	681	Median	149
SD	218.3	Std. Error of Mean	72.75
Coefficient of Variation	1.18	Skewness	1.66
Mean of logged Data	3.989	SD of logged Data	2.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	320.3	95% Adjusted-CLT UCL (Chen-1995)	347.6
		95% Modified-t UCL (Johnson-1978)	327

Nonparametric Distribution Free UCLs

95% CLT UCL	304.6	95% Jackknife UCL	320.3
95% Standard Bootstrap UCL	295.1	95% Bootstrap-t UCL	432.9
95% Hall's Bootstrap UCL	923.9	95% Percentile Bootstrap UCL	305.6
95% BCA Bootstrap UCL	343.7		
90% Chebyshev(Mean, Sd) UCL	403.2	95% Chebyshev(Mean, Sd) UCL	502.1
97.5% Chebyshev(Mean, Sd) UCL	639.3	99% Chebyshev(Mean, Sd) UCL	908.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.06	Mean	228.6
Maximum	853	Median	189
SD	271.2	Std. Error of Mean	90.41
Coefficient of Variation	1.186	Skewness	1.738
Mean of logged Data	4.288	SD of logged Data	2.1

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	396.7	95% Adjusted-CLT UCL (Chen-1995)	433.3
		95% Modified-t UCL (Johnson-1978)	405.5

Nonparametric Distribution Free UCLs

95% CLT UCL	377.3	95% Jackknife UCL	396.7
95% Standard Bootstrap UCL	371.3	95% Bootstrap-t UCL	538.2
95% Hall's Bootstrap UCL	1141	95% Percentile Bootstrap UCL	378.9
95% BCA Bootstrap UCL	421.5		
90% Chebyshev(Mean, Sd) UCL	499.9	95% Chebyshev(Mean, Sd) UCL	622.7
97.5% Chebyshev(Mean, Sd) UCL	793.2	99% Chebyshev(Mean, Sd) UCL	1128

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	139.6
Maximum	548	Median	116
SD	170.9	Std. Error of Mean	56.98
Coefficient of Variation	1.224	Skewness	1.956
Mean of logged Data	3.855	SD of logged Data	1.969

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	245.6	95% Adjusted-CLT UCL (Chen-1995)	273
		95% Modified-t UCL (Johnson-1978)	251.8

Nonparametric Distribution Free UCLs

95% CLT UCL	233.4	95% Jackknife UCL	245.6
95% Standard Bootstrap UCL	228.2	95% Bootstrap-t UCL	330.8
95% Hall's Bootstrap UCL	661.8	95% Percentile Bootstrap UCL	238.1
95% BCA Bootstrap UCL	266.5		
90% Chebyshev(Mean, Sd) UCL	310.6	95% Chebyshev(Mean, Sd) UCL	388
97.5% Chebyshev(Mean, Sd) UCL	495.5	99% Chebyshev(Mean, Sd) UCL	706.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	97.83
Maximum	373	Median	76.4
SD	118.1	Std. Error of Mean	39.37
Coefficient of Variation	1.207	Skewness	1.808
Mean of logged Data	3.505	SD of logged Data	1.963

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	171	95% Adjusted-CLT UCL (Chen-1995)	187.9
		95% Modified-t UCL (Johnson-1978)	175

Nonparametric Distribution Free UCLs

95% CLT UCL	162.6	95% Jackknife UCL	171
95% Standard Bootstrap UCL	157.5	95% Bootstrap-t UCL	234.8
95% Hall's Bootstrap UCL	472.7	95% Percentile Bootstrap UCL	159.7
95% BCA Bootstrap UCL	189.2		
90% Chebyshev(Mean, Sd) UCL	215.9	95% Chebyshev(Mean, Sd) UCL	269.4
97.5% Chebyshev(Mean, Sd) UCL	343.7	99% Chebyshev(Mean, Sd) UCL	489.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	182.2
Maximum	599	Median	151
SD	194.4	Std. Error of Mean	64.81
Coefficient of Variation	1.067	Skewness	1.292
Mean of logged Data	4.061	SD of logged Data	2.18

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	302.7	95% Adjusted-CLT UCL (Chen-1995)	318.6
		95% Modified-t UCL (Johnson-1978)	307.3

Nonparametric Distribution Free UCLs

95% CLT UCL	288.8	95% Jackknife UCL	302.7
95% Standard Bootstrap UCL	280.1	95% Bootstrap-t UCL	360
95% Hall's Bootstrap UCL	569.7	95% Percentile Bootstrap UCL	293.5
95% BCA Bootstrap UCL	312.5		
90% Chebyshev(Mean, Sd) UCL	376.6	95% Chebyshev(Mean, Sd) UCL	464.7
97.5% Chebyshev(Mean, Sd) UCL	586.9	99% Chebyshev(Mean, Sd) UCL	827

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	36.03
Maximum	138	Median	27.8
SD	42.84	Std. Error of Mean	14.28
Coefficient of Variation	1.189	Skewness	1.964
Mean of logged Data	2.865	SD of logged Data	1.408

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.58	95% Adjusted-CLT UCL (Chen-1995)	69.51
		95% Modified-t UCL (Johnson-1978)	64.14

Nonparametric Distribution Free UCLs

95% CLT UCL	59.52	95% Jackknife UCL	62.58
95% Standard Bootstrap UCL	57.55	95% Bootstrap-t UCL	89.23
95% Hall's Bootstrap UCL	169.4	95% Percentile Bootstrap UCL	58.78
95% BCA Bootstrap UCL	69.17		
90% Chebyshev(Mean, Sd) UCL	78.87	95% Chebyshev(Mean, Sd) UCL	98.27
97.5% Chebyshev(Mean, Sd) UCL	125.2	99% Chebyshev(Mean, Sd) UCL	178.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	176.9
Maximum	400	Median	201
SD	152.2	Std. Error of Mean	50.72
Coefficient of Variation	0.86	Skewness	0.115
Mean of logged Data	4.073	SD of logged Data	2.215

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	271.2	95% Adjusted-CLT UCL (Chen-1995)	262.4
		95% Modified-t UCL (Johnson-1978)	271.5

Nonparametric Distribution Free UCLs

95% CLT UCL	260.3	95% Jackknife UCL	271.2

95% Standard Bootstrap UCL	255.8	95% Bootstrap-t UCL	282.6
95% Hall's Bootstrap UCL	259.4	95% Percentile Bootstrap UCL	256.3
95% BCA Bootstrap UCL	254.9		
90% Chebyshev(Mean, Sd) UCL	329.1	95% Chebyshev(Mean, Sd) UCL	398
97.5% Chebyshev(Mean, Sd) UCL	493.6	99% Chebyshev(Mean, Sd) UCL	681.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.225	Mean	4.046
Maximum	13.15	Median	3.94
SD	3.706	Std. Error of Mean	1.235
Coefficient of Variation	0.916	Skewness	2.161
Mean of logged Data	1.102	SD of logged Data	0.794

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.343	95% Adjusted-CLT UCL (Chen-1995)	7.029
		95% Modified-t UCL (Johnson-1978)	6.491

Nonparametric Distribution Free UCLs

95% CLT UCL	6.078	95% Jackknife UCL	6.343
95% Standard Bootstrap UCL	5.915	95% Bootstrap-t UCL	8.301
95% Hall's Bootstrap UCL	14.22	95% Percentile Bootstrap UCL	6.184
95% BCA Bootstrap UCL	6.703		
90% Chebyshev(Mean, Sd) UCL	7.752	95% Chebyshev(Mean, Sd) UCL	9.431
97.5% Chebyshev(Mean, Sd) UCL	11.76	99% Chebyshev(Mean, Sd) UCL	16.34

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	147.1
Maximum	573	Median	120
SD	179.9	Std. Error of Mean	59.96
Coefficient of Variation	1.223	Skewness	1.908
Mean of logged Data	3.903	SD of logged Data	1.973

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	258.6	95% Adjusted-CLT UCL (Chen-1995)	286.4
		95% Modified-t UCL (Johnson-1978)	264.9

Nonparametric Distribution Free UCLs

95% CLT UCL	245.7	95% Jackknife UCL	258.6
95% Standard Bootstrap UCL	241	95% Bootstrap-t UCL	366.9
95% Hall's Bootstrap UCL	712.5	95% Percentile Bootstrap UCL	244.8
95% BCA Bootstrap UCL	285.2		
90% Chebyshev(Mean, Sd) UCL	327	95% Chebyshev(Mean, Sd) UCL	408.4
97.5% Chebyshev(Mean, Sd) UCL	521.5	99% Chebyshev(Mean, Sd) UCL	743.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.97	Mean	6.401
Maximum	9.85	Median	6.72
SD	2.721	Std. Error of Mean	0.907
Coefficient of Variation	0.425	Skewness	-0.196
Mean of logged Data	1.76	SD of logged Data	0.487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.088	95% Adjusted-CLT UCL (Chen-1995)	7.83
		95% Modified-t UCL (Johnson-1978)	8.078

Nonparametric Distribution Free UCLs

95% CLT UCL	7.893	95% Jackknife UCL	8.088
95% Standard Bootstrap UCL	7.796	95% Bootstrap-t UCL	8.009
95% Hall's Bootstrap UCL	7.717	95% Percentile Bootstrap UCL	7.789
95% BCA Bootstrap UCL	7.71		
90% Chebyshev(Mean, Sd) UCL	9.122	95% Chebyshev(Mean, Sd) UCL	10.35
97.5% Chebyshev(Mean, Sd) UCL	12.06	99% Chebyshev(Mean, Sd) UCL	15.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.8	Mean	67.18
Maximum	115	Median	94.5
SD	50.72	Std. Error of Mean	16.91
Coefficient of Variation	0.755	Skewness	-0.546
Mean of logged Data	3.42	SD of logged Data	1.745

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	98.62	95% Adjusted-CLT UCL (Chen-1995)	91.7
		95% Modified-t UCL (Johnson-1978)	98.1

Nonparametric Distribution Free UCLs

95% CLT UCL	94.99	95% Jackknife UCL	98.62
95% Standard Bootstrap UCL	93.41	95% Bootstrap-t UCL	93.96
95% Hall's Bootstrap UCL	88.71	95% Percentile Bootstrap UCL	93.83

95% BCA Bootstrap UCL	90.33		
90% Chebyshev(Mean, Sd) UCL	117.9	95% Chebyshev(Mean, Sd) UCL	140.9
97.5% Chebyshev(Mean, Sd) UCL	172.8	99% Chebyshev(Mean, Sd) UCL	235.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.06	Mean	187
Maximum	447	Median	194
SD	165.7	Std. Error of Mean	55.22
Coefficient of Variation	0.886	Skewness	0.261
Mean of logged Data	4.186	SD of logged Data	2.089

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	289.6	95% Adjusted-CLT UCL (Chen-1995)	282.9
		95% Modified-t UCL (Johnson-1978)	290.4

Nonparametric Distribution Free UCLs

95% CLT UCL	277.8	95% Jackknife UCL	289.6
95% Standard Bootstrap UCL	272.3	95% Bootstrap-t UCL	296.8
95% Hall's Bootstrap UCL	287	95% Percentile Bootstrap UCL	273.9
95% BCA Bootstrap UCL	278.1		
90% Chebyshev(Mean, Sd) UCL	352.6	95% Chebyshev(Mean, Sd) UCL	427.7
97.5% Chebyshev(Mean, Sd) UCL	531.8	99% Chebyshev(Mean, Sd) UCL	736.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12.6	Mean	14.33
Maximum	16.4	Median	14.1
SD	1.373	Std. Error of Mean	0.458
Coefficient of Variation	0.0958	Skewness	0.389
Mean of logged Data	2.659	SD of logged Data	0.0949

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.18	95% Adjusted-CLT UCL (Chen-1995)	15.15
		95% Modified-t UCL (Johnson-1978)	15.19

Nonparametric Distribution Free UCLs

95% CLT UCL	15.09	95% Jackknife UCL	15.18
95% Standard Bootstrap UCL	15.05	95% Bootstrap-t UCL	15.36
95% Hall's Bootstrap UCL	15.11	95% Percentile Bootstrap UCL	15.06
95% BCA Bootstrap UCL	15.07		
90% Chebyshev(Mean, Sd) UCL	15.71	95% Chebyshev(Mean, Sd) UCL	16.33
97.5% Chebyshev(Mean, Sd) UCL	17.19	99% Chebyshev(Mean, Sd) UCL	18.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.18	Mean	16.33
Maximum	25	Median	16.3
SD	5.827	Std. Error of Mean	1.942
Coefficient of Variation	0.357	Skewness	0.00876
Mean of logged Data	2.731	SD of logged Data	0.384

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.94	95% Adjusted-CLT UCL (Chen-1995)	19.53
		95% Modified-t UCL (Johnson-1978)	19.94

Nonparametric Distribution Free UCLs

95% CLT UCL	19.53	95% Jackknife UCL	19.94
95% Standard Bootstrap UCL	19.29	95% Bootstrap-t UCL	19.98
95% Hall's Bootstrap UCL	19.48	95% Percentile Bootstrap UCL	19.29
95% BCA Bootstrap UCL	19.09		
90% Chebyshev(Mean, Sd) UCL	22.16	95% Chebyshev(Mean, Sd) UCL	24.8
97.5% Chebyshev(Mean, Sd) UCL	28.46	99% Chebyshev(Mean, Sd) UCL	35.66

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.5	Mean	61.61
Maximum	96.8	Median	47.7
SD	25.19	Std. Error of Mean	8.396
Coefficient of Variation	0.409	Skewness	0.807
Mean of logged Data	4.053	SD of logged Data	0.381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	77.22	95% Adjusted-CLT UCL (Chen-1995)	77.84
		95% Modified-t UCL (Johnson-1978)	77.6

Nonparametric Distribution Free UCLs

95% CLT UCL	75.42	95% Jackknife UCL	77.22
95% Standard Bootstrap UCL	75.15	95% Bootstrap-t UCL	79.16
95% Hall's Bootstrap UCL	70.13	95% Percentile Bootstrap UCL	74.48
95% BCA Bootstrap UCL	78.04		
90% Chebyshev(Mean, Sd) UCL	86.8	95% Chebyshev(Mean, Sd) UCL	98.21

97.5% Chebyshev(Mean, Sd) UCL	114	99% Chebyshev(Mean, Sd) UCL	145.2

Suggested UCL to Use

95% Student's-t UCL	77.22	or 95% Modified-t UCL	77.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:46:24 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404552A) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.02	Mean	1.752
Maximum	3.59	Median	1.41
SD	0.8	Std. Error of Mean	0.267
Coefficient of Variation	0.457	Skewness	1.754
Mean of logged Data	0.486	SD of logged Data	0.391

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.248	95% Adjusted-CLT UCL (Chen-1995)	2.357
		95% Modified-t UCL (Johnson-1978)	2.274

Nonparametric Distribution Free UCLs

95% CLT UCL	2.191	95% Jackknife UCL	2.248
95% Standard Bootstrap UCL	2.175	95% Bootstrap-t UCL	2.686
95% Hall's Bootstrap UCL	3.109	95% Percentile Bootstrap UCL	2.206
95% BCA Bootstrap UCL	2.344		
90% Chebyshev(Mean, Sd) UCL	2.552	95% Chebyshev(Mean, Sd) UCL	2.915
97.5% Chebyshev(Mean, Sd) UCL	3.417	99% Chebyshev(Mean, Sd) UCL	4.405

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.489	Mean	0.671
Maximum	1.07	Median	0.525
SD	0.243	Std. Error of Mean	0.0809
Coefficient of Variation	0.362	Skewness	0.936
Mean of logged Data	-0.451	SD of logged Data	0.333

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.821	95% Adjusted-CLT UCL (Chen-1995)	0.831
		95% Modified-t UCL (Johnson-1978)	0.826

Nonparametric Distribution Free UCLs

95% CLT UCL	0.804	95% Jackknife UCL	0.821
95% Standard Bootstrap UCL	0.796	95% Bootstrap-t UCL	0.872
95% Hall's Bootstrap UCL	0.753	95% Percentile Bootstrap UCL	0.798
95% BCA Bootstrap UCL	0.807		
90% Chebyshev(Mean, Sd) UCL	0.914	95% Chebyshev(Mean, Sd) UCL	1.023
97.5% Chebyshev(Mean, Sd) UCL	1.176	99% Chebyshev(Mean, Sd) UCL	1.476

Suggested UCL to Use

95% Student's-t UCL	0.821	or 95% Modified-t UCL	0.826

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	2.441
Maximum	3.89	Median	2.125
SD	0.635	Std. Error of Mean	0.212
Coefficient of Variation	0.26	Skewness	1.776
Mean of logged Data	0.867	SD of logged Data	0.229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.835	95% Adjusted-CLT UCL (Chen-1995)	2.923
		95% Modified-t UCL (Johnson-1978)	2.856

Nonparametric Distribution Free UCLs

95% CLT UCL	2.789	95% Jackknife UCL	2.835
95% Standard Bootstrap UCL	2.768	95% Bootstrap-t UCL	3.23
95% Hall's Bootstrap UCL	2.893	95% Percentile Bootstrap UCL	2.792
95% BCA Bootstrap UCL	2.908		
90% Chebyshev(Mean, Sd) UCL	3.076	95% Chebyshev(Mean, Sd) UCL	3.364
97.5% Chebyshev(Mean, Sd) UCL	3.764	99% Chebyshev(Mean, Sd) UCL	4.548

Suggested UCL to Use

95% Student's-t UCL	2.835	or 95% Modified-t UCL	2.856

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	10.13
Maximum	23.9	Median	7.85
SD	9.328	Std. Error of Mean	3.109
Coefficient of Variation	0.921	Skewness	0.639
Mean of logged Data	1.834	SD of logged Data	1.096

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.91	95% Adjusted-CLT UCL (Chen-1995)	15.95
		95% Modified-t UCL (Johnson-1978)	16.02

Nonparametric Distribution Free UCLs

95% CLT UCL	15.24	95% Jackknife UCL	15.91
95% Standard Bootstrap UCL	15.03	95% Bootstrap-t UCL	16.84
95% Hall's Bootstrap UCL	14.01	95% Percentile Bootstrap UCL	14.93
95% BCA Bootstrap UCL	15.41		
90% Chebyshev(Mean, Sd) UCL	19.46	95% Chebyshev(Mean, Sd) UCL	23.68
97.5% Chebyshev(Mean, Sd) UCL	29.55	99% Chebyshev(Mean, Sd) UCL	41.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	14.34
Maximum	36.7	Median	9.94
SD	14.27	Std. Error of Mean	4.757
Coefficient of Variation	0.995	Skewness	0.715
Mean of logged Data	2.066	SD of logged Data	1.243

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.19	95% Adjusted-CLT UCL (Chen-1995)	23.38
		95% Modified-t UCL (Johnson-1978)	23.38

Nonparametric Distribution Free UCLs

95% CLT UCL	22.17	95% Jackknife UCL	23.19
95% Standard Bootstrap UCL	21.78	95% Bootstrap-t UCL	24.77
95% Hall's Bootstrap UCL	20.28	95% Percentile Bootstrap UCL	21.65
95% BCA Bootstrap UCL	22.82		
90% Chebyshev(Mean, Sd) UCL	28.61	95% Chebyshev(Mean, Sd) UCL	35.08
97.5% Chebyshev(Mean, Sd) UCL	44.05	99% Chebyshev(Mean, Sd) UCL	61.67

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	19.7
Maximum	48.5	Median	13.7
SD	19.39	Std. Error of Mean	6.463
Coefficient of Variation	0.984	Skewness	0.696
Mean of logged Data	2.414	SD of logged Data	1.198

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.72	95% Adjusted-CLT UCL (Chen-1995)	31.94
		95% Modified-t UCL (Johnson-1978)	31.97

Nonparametric Distribution Free UCLs

95% CLT UCL	30.33	95% Jackknife UCL	31.72
95% Standard Bootstrap UCL	29.72	95% Bootstrap-t UCL	33.88
95% Hall's Bootstrap UCL	27.53	95% Percentile Bootstrap UCL	30.23
95% BCA Bootstrap UCL	31.74		
90% Chebyshev(Mean, Sd) UCL	39.09	95% Chebyshev(Mean, Sd) UCL	47.88
97.5% Chebyshev(Mean, Sd) UCL	60.07	99% Chebyshev(Mean, Sd) UCL	84.01

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.18	Mean	10.51
Maximum	24	Median	7.11
SD	9.359	Std. Error of Mean	3.12
Coefficient of Variation	0.891	Skewness	0.727
Mean of logged Data	1.953	SD of logged Data	0.967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.31	95% Adjusted-CLT UCL (Chen-1995)	16.45
		95% Modified-t UCL (Johnson-1978)	16.43

Nonparametric Distribution Free UCLs

95% CLT UCL	15.64	95% Jackknife UCL	16.31

95% Standard Bootstrap UCL	15.37	95% Bootstrap-t UCL	17.38
95% Hall's Bootstrap UCL	14.05	95% Percentile Bootstrap UCL	15.51
95% BCA Bootstrap UCL	16.22		
90% Chebyshev(Mean, Sd) UCL	19.87	95% Chebyshev(Mean, Sd) UCL	24.11
97.5% Chebyshev(Mean, Sd) UCL	29.99	99% Chebyshev(Mean, Sd) UCL	41.55

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	8.848
Maximum	22.7	Median	5.16
SD	8.634	Std. Error of Mean	2.878
Coefficient of Variation	0.976	Skewness	0.86
Mean of logged Data	1.703	SD of logged Data	1.053

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.2	95% Adjusted-CLT UCL (Chen-1995)	14.46
		95% Modified-t UCL (Johnson-1978)	14.34

Nonparametric Distribution Free UCLs

95% CLT UCL	13.58	95% Jackknife UCL	14.2
95% Standard Bootstrap UCL	13.17	95% Bootstrap-t UCL	15.41
95% Hall's Bootstrap UCL	12.44	95% Percentile Bootstrap UCL	13.2
95% BCA Bootstrap UCL	14.38		
90% Chebyshev(Mean, Sd) UCL	17.48	95% Chebyshev(Mean, Sd) UCL	21.39
97.5% Chebyshev(Mean, Sd) UCL	26.82	99% Chebyshev(Mean, Sd) UCL	37.48

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	13.15
Maximum	31.4	Median	10.1
SD	12.59	Std. Error of Mean	4.196
Coefficient of Variation	0.957	Skewness	0.625
Mean of logged Data	2.017	SD of logged Data	1.205

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.96	95% Adjusted-CLT UCL (Chen-1995)	20.99
		95% Modified-t UCL (Johnson-1978)	21.1

Nonparametric Distribution Free UCLs

95% CLT UCL	20.05	95% Jackknife UCL	20.96
95% Standard Bootstrap UCL	19.65	95% Bootstrap-t UCL	21.99
95% Hall's Bootstrap UCL	18.34	95% Percentile Bootstrap UCL	20.07
95% BCA Bootstrap UCL	20.68		
90% Chebyshev(Mean, Sd) UCL	25.74	95% Chebyshev(Mean, Sd) UCL	31.44
97.5% Chebyshev(Mean, Sd) UCL	39.36	99% Chebyshev(Mean, Sd) UCL	54.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	4.212
Maximum	6.87	Median	3.27
SD	1.568	Std. Error of Mean	0.523
Coefficient of Variation	0.372	Skewness	0.997
Mean of logged Data	1.383	SD of logged Data	0.34

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.184	95% Adjusted-CLT UCL (Chen-1995)	5.257
		95% Modified-t UCL (Johnson-1978)	5.213

Nonparametric Distribution Free UCLs

95% CLT UCL	5.072	95% Jackknife UCL	5.184
95% Standard Bootstrap UCL	5.015	95% Bootstrap-t UCL	5.651
95% Hall's Bootstrap UCL	4.814	95% Percentile Bootstrap UCL	5.088
95% BCA Bootstrap UCL	5.147		
90% Chebyshev(Mean, Sd) UCL	5.78	95% Chebyshev(Mean, Sd) UCL	6.49
97.5% Chebyshev(Mean, Sd) UCL	7.476	99% Chebyshev(Mean, Sd) UCL	9.412

Suggested UCL to Use

95% Student's-t UCL	5.184	or 95% Modified-t UCL	5.213

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	16.58
Maximum	40	Median	14
SD	16	Std. Error of Mean	5.333
Coefficient of Variation	0.965	Skewness	0.585
Mean of logged Data	2.188	SD of logged Data	1.303

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.5	95% Adjusted-CLT UCL (Chen-1995)	26.47
		95% Modified-t UCL (Johnson-1978)	26.67

Nonparametric Distribution Free UCLs

95% CLT UCL	25.35	95% Jackknife UCL	26.5
95% Standard Bootstrap UCL	24.81	95% Bootstrap-t UCL	28.18
95% Hall's Bootstrap UCL	23.62	95% Percentile Bootstrap UCL	25.19
95% BCA Bootstrap UCL	25.05		
90% Chebyshev(Mean, Sd) UCL	32.58	95% Chebyshev(Mean, Sd) UCL	39.83
97.5% Chebyshev(Mean, Sd) UCL	49.89	99% Chebyshev(Mean, Sd) UCL	69.64

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.225	Mean	1.604
Maximum	2.64	Median	1.31
SD	0.522	Std. Error of Mean	0.174
Coefficient of Variation	0.326	Skewness	1.269
Mean of logged Data	0.432	SD of logged Data	0.293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.928	95% Adjusted-CLT UCL (Chen-1995)	1.97
		95% Modified-t UCL (Johnson-1978)	1.941

Nonparametric Distribution Free UCLs

95% CLT UCL	1.891	95% Jackknife UCL	1.928
95% Standard Bootstrap UCL	1.878	95% Bootstrap-t UCL	2.171
95% Hall's Bootstrap UCL	1.868	95% Percentile Bootstrap UCL	1.889
95% BCA Bootstrap UCL	1.966		
90% Chebyshev(Mean, Sd) UCL	2.127	95% Chebyshev(Mean, Sd) UCL	2.364
97.5% Chebyshev(Mean, Sd) UCL	2.692	99% Chebyshev(Mean, Sd) UCL	3.337

Suggested UCL to Use

95% Student's-t UCL	1.928	or 95% Modified-t UCL	1.941

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.59	Mean	12.57
Maximum	29.1	Median	8.64
SD	11.58	Std. Error of Mean	3.859
Coefficient of Variation	0.921	Skewness	0.7
Mean of logged Data	2.084	SD of logged Data	1.035

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.75	95% Adjusted-CLT UCL (Chen-1995)	19.88
		95% Modified-t UCL (Johnson-1978)	19.9

Nonparametric Distribution Free UCLs

95% CLT UCL	18.92	95% Jackknife UCL	19.75
95% Standard Bootstrap UCL	18.64	95% Bootstrap-t UCL	20.67
95% Hall's Bootstrap UCL	17.09	95% Percentile Bootstrap UCL	18.74
95% BCA Bootstrap UCL	19.71		
90% Chebyshev(Mean, Sd) UCL	24.15	95% Chebyshev(Mean, Sd) UCL	29.39
97.5% Chebyshev(Mean, Sd) UCL	36.67	99% Chebyshev(Mean, Sd) UCL	50.97

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.81	Mean	2.937
Maximum	4.58	Median	2.95
SD	0.787	Std. Error of Mean	0.262
Coefficient of Variation	0.268	Skewness	0.907
Mean of logged Data	1.047	SD of logged Data	0.263

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	3.424	95% Adjusted-CLT UCL (Chen-1995)	3.453
		95% Modified-t UCL (Johnson-1978)	3.438

Nonparametric Distribution Free UCLs

95% CLT UCL	3.368	95% Jackknife UCL	3.424
95% Standard Bootstrap UCL	3.342	95% Bootstrap-t UCL	3.518
95% Hall's Bootstrap UCL	3.802	95% Percentile Bootstrap UCL	3.356
95% BCA Bootstrap UCL	3.44		
90% Chebyshev(Mean, Sd) UCL	3.724	95% Chebyshev(Mean, Sd) UCL	4.08
97.5% Chebyshev(Mean, Sd) UCL	4.575	99% Chebyshev(Mean, Sd) UCL	5.546

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	7.802
Maximum	16.2	Median	5.43
SD	5.619	Std. Error of Mean	1.873
Coefficient of Variation	0.72	Skewness	0.709
Mean of logged Data	1.819	SD of logged Data	0.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.28	95% Adjusted-CLT UCL (Chen-1995)	11.36
		95% Modified-t UCL (Johnson-1978)	11.36

Nonparametric Distribution Free UCLs

95% CLT UCL	10.88	95% Jackknife UCL	11.28
95% Standard Bootstrap UCL	10.67	95% Bootstrap-t UCL	12.23
95% Hall's Bootstrap UCL	10.01	95% Percentile Bootstrap UCL	10.77
95% BCA Bootstrap UCL	11.17		
90% Chebyshev(Mean, Sd) UCL	13.42	95% Chebyshev(Mean, Sd) UCL	15.97
97.5% Chebyshev(Mean, Sd) UCL	19.5	99% Chebyshev(Mean, Sd) UCL	26.44

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	16.41
Maximum	38.6	Median	12.9
SD	15.11	Std. Error of Mean	5.036
Coefficient of Variation	0.921	Skewness	0.632
Mean of logged Data	2.309	SD of logged Data	1.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.77	95% Adjusted-CLT UCL (Chen-1995)	25.83
		95% Modified-t UCL (Johnson-1978)	25.95

Nonparametric Distribution Free UCLs

95% CLT UCL	24.69	95% Jackknife UCL	25.77
95% Standard Bootstrap UCL	24.06	95% Bootstrap-t UCL	27.66
95% Hall's Bootstrap UCL	22.98	95% Percentile Bootstrap UCL	24.16
95% BCA Bootstrap UCL	24.82		
90% Chebyshev(Mean, Sd) UCL	31.52	95% Chebyshev(Mean, Sd) UCL	38.36
97.5% Chebyshev(Mean, Sd) UCL	47.86	99% Chebyshev(Mean, Sd) UCL	66.52

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	13	Mean	16.9
Maximum	28.6	Median	16.2
SD	4.694	Std. Error of Mean	1.565
Coefficient of Variation	0.278	Skewness	2.287
Mean of logged Data	2.8	SD of logged Data	0.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.81	95% Adjusted-CLT UCL (Chen-1995)	20.75
		95% Modified-t UCL (Johnson-1978)	20.01

Nonparametric Distribution Free UCLs

95% CLT UCL	19.47	95% Jackknife UCL	19.81
95% Standard Bootstrap UCL	19.22	95% Bootstrap-t UCL	22.57
95% Hall's Bootstrap UCL	30.02	95% Percentile Bootstrap UCL	19.59
95% BCA Bootstrap UCL	20.38		
90% Chebyshev(Mean, Sd) UCL	21.59	95% Chebyshev(Mean, Sd) UCL	23.72
97.5% Chebyshev(Mean, Sd) UCL	26.67	99% Chebyshev(Mean, Sd) UCL	32.47

Suggested UCL to Use

95% Student's-t UCL	19.81	or 95% Modified-t UCL	20.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	58.7	Mean	67.83
Maximum	85.1	Median	63.1
SD	10.58	Std. Error of Mean	3.527
Coefficient of Variation	0.156	Skewness	0.991
Mean of logged Data	4.207	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	74.39	95% Adjusted-CLT UCL (Chen-1995)	74.88
		95% Modified-t UCL (Johnson-1978)	74.59

Nonparametric Distribution Free UCLs

95% CLT UCL	73.64	95% Jackknife UCL	74.39

95% Standard Bootstrap UCL	73.45	95% Bootstrap-t UCL	79.22
95% Hall's Bootstrap UCL	74.06	95% Percentile Bootstrap UCL	73.74
95% BCA Bootstrap UCL	74.17		
90% Chebyshev(Mean, Sd) UCL	78.42	95% Chebyshev(Mean, Sd) UCL	83.21
97.5% Chebyshev(Mean, Sd) UCL	89.86	99% Chebyshev(Mean, Sd) UCL	102.9

Suggested UCL to Use

95% Student's-t UCL	74.39	or 95% Modified-t UCL	74.59

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:49:51 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404553) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.91	Mean	4.198
Maximum	4.97	Median	4.29
SD	0.715	Std. Error of Mean	0.238
Coefficient of Variation	0.17	Skewness	-0.953
Mean of logged Data	1.42	SD of logged Data	0.186

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.641	95% Adjusted-CLT UCL (Chen-1995)	4.509
		95% Modified-t UCL (Johnson-1978)	4.628

Nonparametric Distribution Free UCLs

95% CLT UCL	4.59	95% Jackknife UCL	4.641
95% Standard Bootstrap UCL	4.569	95% Bootstrap-t UCL	4.54
95% Hall's Bootstrap UCL	4.503	95% Percentile Bootstrap UCL	4.563
95% BCA Bootstrap UCL	4.494		
90% Chebyshev(Mean, Sd) UCL	4.913	95% Chebyshev(Mean, Sd) UCL	5.237
97.5% Chebyshev(Mean, Sd) UCL	5.687	99% Chebyshev(Mean, Sd) UCL	6.57

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ACENAPHTHENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.461	Mean	0.956
Maximum	2.29	Median	0.573
SD	0.634	Std. Error of Mean	0.211
Coefficient of Variation	0.663	Skewness	1.406
Mean of logged Data	-0.209	SD of logged Data	0.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.349	95% Adjusted-CLT UCL (Chen-1995)	1.41
		95% Modified-t UCL (Johnson-1978)	1.366

Nonparametric Distribution Free UCLs			
95% CLT UCL	1.304	95% Jackknife UCL	1.349
95% Standard Bootstrap UCL	1.286	95% Bootstrap-t UCL	1.681
95% Hall's Bootstrap UCL	1.387	95% Percentile Bootstrap UCL	1.313
95% BCA Bootstrap UCL	1.378		
90% Chebyshev(Mean, Sd) UCL	1.59	95% Chebyshev(Mean, Sd) UCL	1.877
97.5% Chebyshev(Mean, Sd) UCL	2.276	99% Chebyshev(Mean, Sd) UCL	3.059

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.76	Mean	3.553
Maximum	11.2	Median	2.125
SD	3.179	Std. Error of Mean	1.06
Coefficient of Variation	0.895	Skewness	2.205
Mean of logged Data	1.036	SD of logged Data	0.642

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.523	95% Adjusted-CLT UCL (Chen-1995)	6.128
		95% Modified-t UCL (Johnson-1978)	5.653

Nonparametric Distribution Free UCLs

95% CLT UCL	5.296	95% Jackknife UCL	5.523
95% Standard Bootstrap UCL	5.165	95% Bootstrap-t UCL	20.65
95% Hall's Bootstrap UCL	14.73	95% Percentile Bootstrap UCL	5.126
95% BCA Bootstrap UCL	6.187		
90% Chebyshev(Mean, Sd) UCL	6.731	95% Chebyshev(Mean, Sd) UCL	8.171
97.5% Chebyshev(Mean, Sd) UCL	10.17	99% Chebyshev(Mean, Sd) UCL	14.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	8.171

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	23.31
Maximum	65.9	Median	16.5
SD	21.08	Std. Error of Mean	7.026
Coefficient of Variation	0.904	Skewness	1.066
Mean of logged Data	2.637	SD of logged Data	1.229

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.37	95% Adjusted-CLT UCL (Chen-1995)	37.53
		95% Modified-t UCL (Johnson-1978)	36.79

Nonparametric Distribution Free UCLs

95% CLT UCL	34.86	95% Jackknife UCL	36.37
95% Standard Bootstrap UCL	33.95	95% Bootstrap-t UCL	41.77
95% Hall's Bootstrap UCL	43.94	95% Percentile Bootstrap UCL	34.74
95% BCA Bootstrap UCL	37.5		
90% Chebyshev(Mean, Sd) UCL	44.38	95% Chebyshev(Mean, Sd) UCL	53.93
97.5% Chebyshev(Mean, Sd) UCL	67.18	99% Chebyshev(Mean, Sd) UCL	93.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	27.19
Maximum	79.2	Median	17.1
SD	25.97	Std. Error of Mean	8.657
Coefficient of Variation	0.955	Skewness	1.069
Mean of logged Data	2.722	SD of logged Data	1.312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.29	95% Adjusted-CLT UCL (Chen-1995)	44.73
		95% Modified-t UCL (Johnson-1978)	43.81

Nonparametric Distribution Free UCLs

95% CLT UCL	41.43	95% Jackknife UCL	43.29
95% Standard Bootstrap UCL	40.75	95% Bootstrap-t UCL	49.58
95% Hall's Bootstrap UCL	49.3	95% Percentile Bootstrap UCL	41.86
95% BCA Bootstrap UCL	42.91		
90% Chebyshev(Mean, Sd) UCL	53.16	95% Chebyshev(Mean, Sd) UCL	64.93
97.5% Chebyshev(Mean, Sd) UCL	81.26	99% Chebyshev(Mean, Sd) UCL	113.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	36.99
Maximum	107	Median	23.2

SD	35.24	Std. Error of Mean	11.75
Coefficient of Variation	0.953	Skewness	1.081
Mean of logged Data	3.056	SD of logged Data	1.264

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.84	95% Adjusted-CLT UCL (Chen-1995)	60.84
		95% Modified-t UCL (Johnson-1978)	59.54

Nonparametric Distribution Free UCLs

95% CLT UCL	56.31	95% Jackknife UCL	58.84
95% Standard Bootstrap UCL	54.62	95% Bootstrap-t UCL	71.35
95% Hall's Bootstrap UCL	69.42	95% Percentile Bootstrap UCL	55.99
95% BCA Bootstrap UCL	59.08		
90% Chebyshev(Mean, Sd) UCL	72.23	95% Chebyshev(Mean, Sd) UCL	88.2
97.5% Chebyshev(Mean, Sd) UCL	110.4	99% Chebyshev(Mean, Sd) UCL	153.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	18.61
Maximum	54.3	Median	12.3
SD	17.42	Std. Error of Mean	5.808
Coefficient of Variation	0.936	Skewness	1.274
Mean of logged Data	2.497	SD of logged Data	1.025

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	29.41	95% Adjusted-CLT UCL (Chen-1995)	30.8
		95% Modified-t UCL (Johnson-1978)	29.82

Nonparametric Distribution Free UCLs

95% CLT UCL	28.16	95% Jackknife UCL	29.41
95% Standard Bootstrap UCL	27.71	95% Bootstrap-t UCL	39.09
95% Hall's Bootstrap UCL	70.79	95% Percentile Bootstrap UCL	28
95% BCA Bootstrap UCL	30.47		
90% Chebyshev(Mean, Sd) UCL	36.03	95% Chebyshev(Mean, Sd) UCL	43.93
97.5% Chebyshev(Mean, Sd) UCL	54.88	99% Chebyshev(Mean, Sd) UCL	76.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	17.19
Maximum	50	Median	11.2
SD	16.66	Std. Error of Mean	5.555
Coefficient of Variation	0.97	Skewness	1.112
Mean of logged Data	2.33	SD of logged Data	1.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.52	95% Adjusted-CLT UCL (Chen-1995)	28.52
		95% Modified-t UCL (Johnson-1978)	27.86

Nonparametric Distribution Free UCLs

95% CLT UCL	26.32	95% Jackknife UCL	27.52
95% Standard Bootstrap UCL	25.71	95% Bootstrap-t UCL	33.44
95% Hall's Bootstrap UCL	32.49	95% Percentile Bootstrap UCL	26.45
95% BCA Bootstrap UCL	27.37		
90% Chebyshev(Mean, Sd) UCL	33.85	95% Chebyshev(Mean, Sd) UCL	41.4
97.5% Chebyshev(Mean, Sd) UCL	51.87	99% Chebyshev(Mean, Sd) UCL	72.45

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	28.37
Maximum	77.9	Median	18.9
SD	25.97	Std. Error of Mean	8.658
Coefficient of Variation	0.916	Skewness	0.887
Mean of logged Data	2.776	SD of logged Data	1.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.47	95% Adjusted-CLT UCL (Chen-1995)	45.35
		95% Modified-t UCL (Johnson-1978)	44.9

Nonparametric Distribution Free UCLs

95% CLT UCL	42.61	95% Jackknife UCL	44.47
95% Standard Bootstrap UCL	41.57	95% Bootstrap-t UCL	51.29
95% Hall's Bootstrap UCL	47.14	95% Percentile Bootstrap UCL	42.8
95% BCA Bootstrap UCL	44.34		
90% Chebyshev(Mean, Sd) UCL	54.35	95% Chebyshev(Mean, Sd) UCL	66.11
97.5% Chebyshev(Mean, Sd) UCL	82.44	99% Chebyshev(Mean, Sd) UCL	114.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	6.086
Maximum	15.3	Median	3.44
SD	4.215	Std. Error of Mean	1.405
Coefficient of Variation	0.693	Skewness	1.623
Mean of logged Data	1.636	SD of logged Data	0.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.699	95% Adjusted-CLT UCL (Chen-1995)	9.209
		95% Modified-t UCL (Johnson-1978)	8.825

Nonparametric Distribution Free UCLs

95% CLT UCL	8.397	95% Jackknife UCL	8.699
95% Standard Bootstrap UCL	8.267	95% Bootstrap-t UCL	12.25
95% Hall's Bootstrap UCL	19.61	95% Percentile Bootstrap UCL	8.476
95% BCA Bootstrap UCL	9.346		
90% Chebyshev(Mean, Sd) UCL	10.3	95% Chebyshev(Mean, Sd) UCL	12.21
97.5% Chebyshev(Mean, Sd) UCL	14.86	99% Chebyshev(Mean, Sd) UCL	20.06

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	34.33
Maximum	101	Median	25.9
SD	32.6	Std. Error of Mean	10.87
Coefficient of Variation	0.95	Skewness	1.22
Mean of logged Data	2.938	SD of logged Data	1.381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	54.53	95% Adjusted-CLT UCL (Chen-1995)	56.92
		95% Modified-t UCL (Johnson-1978)	55.27

Nonparametric Distribution Free UCLs

95% CLT UCL	52.2	95% Jackknife UCL	54.53
95% Standard Bootstrap UCL	51.01	95% Bootstrap-t UCL	71.09
95% Hall's Bootstrap UCL	171.4	95% Percentile Bootstrap UCL	52.03

95% BCA Bootstrap UCL	56.6		
90% Chebyshev(Mean, Sd) UCL	66.93	95% Chebyshev(Mean, Sd) UCL	81.69
97.5% Chebyshev(Mean, Sd) UCL	102.2	99% Chebyshev(Mean, Sd) UCL	142.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.06	Mean	1.339
Maximum	2.22	Median	1.265
SD	0.345	Std. Error of Mean	0.115
Coefficient of Variation	0.257	Skewness	2.532
Mean of logged Data	0.269	SD of logged Data	0.214

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.552	95% Adjusted-CLT UCL (Chen-1995)	1.631
		95% Modified-t UCL (Johnson-1978)	1.569

Nonparametric Distribution Free UCLs

95% CLT UCL	1.528	95% Jackknife UCL	1.552
95% Standard Bootstrap UCL	1.517	95% Bootstrap-t UCL	1.861
95% Hall's Bootstrap UCL	2.373	95% Percentile Bootstrap UCL	1.543
95% BCA Bootstrap UCL	1.627		
90% Chebyshev(Mean, Sd) UCL	1.683	95% Chebyshev(Mean, Sd) UCL	1.84
97.5% Chebyshev(Mean, Sd) UCL	2.056	99% Chebyshev(Mean, Sd) UCL	2.482

Suggested UCL to Use

95% Student's-t UCL	1.552	or 95% Modified-t UCL	1.569

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	22.53
Maximum	65.8	Median	13.5
SD	21.51	Std. Error of Mean	7.171
Coefficient of Variation	0.955	Skewness	1.198
Mean of logged Data	2.644	SD of logged Data	1.094

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.87	95% Adjusted-CLT UCL (Chen-1995)	37.39
		95% Modified-t UCL (Johnson-1978)	36.35

Nonparametric Distribution Free UCLs

95% CLT UCL	34.33	95% Jackknife UCL	35.87
95% Standard Bootstrap UCL	33.45	95% Bootstrap-t UCL	44.63
95% Hall's Bootstrap UCL	45.67	95% Percentile Bootstrap UCL	34.03
95% BCA Bootstrap UCL	36.23		
90% Chebyshev(Mean, Sd) UCL	44.05	95% Chebyshev(Mean, Sd) UCL	53.79
97.5% Chebyshev(Mean, Sd) UCL	67.32	99% Chebyshev(Mean, Sd) UCL	93.89

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.65	Mean	5.514
Maximum	6.84	Median	5.88
SD	1.071	Std. Error of Mean	0.357
Coefficient of Variation	0.194	Skewness	-0.53
Mean of logged Data	1.689	SD of logged Data	0.208

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.178	95% Adjusted-CLT UCL (Chen-1995)	6.034
		95% Modified-t UCL (Johnson-1978)	6.168

Nonparametric Distribution Free UCLs

95% CLT UCL	6.102	95% Jackknife UCL	6.178
95% Standard Bootstrap UCL	6.056	95% Bootstrap-t UCL	6.138
95% Hall's Bootstrap UCL	5.986	95% Percentile Bootstrap UCL	6.028
95% BCA Bootstrap UCL	6.022		
90% Chebyshev(Mean, Sd) UCL	6.586	95% Chebyshev(Mean, Sd) UCL	7.071
97.5% Chebyshev(Mean, Sd) UCL	7.745	99% Chebyshev(Mean, Sd) UCL	9.068

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	14.96
Maximum	46.3	Median	10.6
SD	14.22	Std. Error of Mean	4.739
Coefficient of Variation	0.95	Skewness	1.624
Mean of logged Data	2.33	SD of logged Data	0.927

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.77	95% Adjusted-CLT UCL (Chen-1995)	25.49
		95% Modified-t UCL (Johnson-1978)	24.2

Nonparametric Distribution Free UCLs

95% CLT UCL	22.75	95% Jackknife UCL	23.77
95% Standard Bootstrap UCL	22.36	95% Bootstrap-t UCL	34.16
95% Hall's Bootstrap UCL	68.63	95% Percentile Bootstrap UCL	22.84
95% BCA Bootstrap UCL	24.97		
90% Chebyshev(Mean, Sd) UCL	29.17	95% Chebyshev(Mean, Sd) UCL	35.61

97.5% Chebyshev(Mean, Sd) UCL	44.55	99% Chebyshev(Mean, Sd) UCL	62.11

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.25	Mean	32.79
Maximum	90.6	Median	24.7
SD	29.29	Std. Error of Mean	9.762
Coefficient of Variation	0.893	Skewness	1.074
Mean of logged Data	3.005	SD of logged Data	1.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	50.94	95% Adjusted-CLT UCL (Chen-1995)	52.58
		95% Modified-t UCL (Johnson-1978)	51.53

Nonparametric Distribution Free UCLs

95% CLT UCL	48.85	95% Jackknife UCL	50.94
95% Standard Bootstrap UCL	47.82	95% Bootstrap-t UCL	60.49
95% Hall's Bootstrap UCL	85.65	95% Percentile Bootstrap UCL	48.73
95% BCA Bootstrap UCL	52.26		
90% Chebyshev(Mean, Sd) UCL	62.08	95% Chebyshev(Mean, Sd) UCL	75.34
97.5% Chebyshev(Mean, Sd) UCL	93.76	99% Chebyshev(Mean, Sd) UCL	129.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8

		Number of Missing Observations	0
Minimum	9.96	Mean	10.31
Maximum	11	Median	10.3
SD	0.321	Std. Error of Mean	0.107
Coefficient of Variation	0.0311	Skewness	1.136
Mean of logged Data	2.333	SD of logged Data	0.0307

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.51	95% Adjusted-CLT UCL (Chen-1995)	10.53
		95% Modified-t UCL (Johnson-1978)	10.52

Nonparametric Distribution Free UCLs

95% CLT UCL	10.49	95% Jackknife UCL	10.51
95% Standard Bootstrap UCL	10.48	95% Bootstrap-t UCL	10.58
95% Hall's Bootstrap UCL	10.68	95% Percentile Bootstrap UCL	10.5
95% BCA Bootstrap UCL	10.54		
90% Chebyshev(Mean, Sd) UCL	10.64	95% Chebyshev(Mean, Sd) UCL	10.78
97.5% Chebyshev(Mean, Sd) UCL	10.98	99% Chebyshev(Mean, Sd) UCL	11.38

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.23	Mean	14.88
Maximum	26.3	Median	14.9
SD	6.172	Std. Error of Mean	2.057
Coefficient of Variation	0.415	Skewness	0.658
Mean of logged Data	2.623	SD of logged Data	0.417

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.71	95% Adjusted-CLT UCL (Chen-1995)	18.75
		95% Modified-t UCL (Johnson-1978)	18.78

Nonparametric Distribution Free UCLs

95% CLT UCL	18.26	95% Jackknife UCL	18.71
95% Standard Bootstrap UCL	18.03	95% Bootstrap-t UCL	19.78
95% Hall's Bootstrap UCL	19.25	95% Percentile Bootstrap UCL	18.19
95% BCA Bootstrap UCL	18.47		
90% Chebyshev(Mean, Sd) UCL	21.05	95% Chebyshev(Mean, Sd) UCL	23.85
97.5% Chebyshev(Mean, Sd) UCL	27.73	99% Chebyshev(Mean, Sd) UCL	35.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	35.4	Mean	51.21
Maximum	82	Median	41.5
SD	19.04	Std. Error of Mean	6.348
Coefficient of Variation	0.372	Skewness	0.885
Mean of logged Data	3.88	SD of logged Data	0.345

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	63.01	95% Adjusted-CLT UCL (Chen-1995)	63.65
		95% Modified-t UCL (Johnson-1978)	63.33

Nonparametric Distribution Free UCLs

95% CLT UCL	61.65	95% Jackknife UCL	63.01
95% Standard Bootstrap UCL	60.95	95% Bootstrap-t UCL	66.61
95% Hall's Bootstrap UCL	58.14	95% Percentile Bootstrap UCL	61.29
95% BCA Bootstrap UCL	63.41		
90% Chebyshev(Mean, Sd) UCL	70.25	95% Chebyshev(Mean, Sd) UCL	78.88
97.5% Chebyshev(Mean, Sd) UCL	90.85	99% Chebyshev(Mean, Sd) UCL	114.4

Suggested UCL to Use

95% Student's-t UCL	63.01	or 95% Modified-t UCL	63.33

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:30:31 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404582) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.05	Mean	5.65
Maximum	25.1	Median	2.19
SD	7.943	Std. Error of Mean	2.648
Coefficient of Variation	1.406	Skewness	2.28
Mean of logged Data	1.101	SD of logged Data	1.092

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.57	95% Adjusted-CLT UCL (Chen-1995)	12.15
		95% Modified-t UCL (Johnson-1978)	10.91

Nonparametric Distribution Free UCLs

95% CLT UCL	10	95% Jackknife UCL	10.57
95% Standard Bootstrap UCL	9.662	95% Bootstrap-t UCL	29.55
95% Hall's Bootstrap UCL	28.28	95% Percentile Bootstrap UCL	10.47
95% BCA Bootstrap UCL	12.65		
90% Chebyshev(Mean, Sd) UCL	13.59	95% Chebyshev(Mean, Sd) UCL	17.19
97.5% Chebyshev(Mean, Sd) UCL	22.18	99% Chebyshev(Mean, Sd) UCL	31.99

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.362	Mean	6.746
Maximum	52.2	Median	0.756
SD	17.07	Std. Error of Mean	5.689
Coefficient of Variation	2.53	Skewness	2.986
Mean of logged Data	0.27	SD of logged Data	1.537

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.32	95% Adjusted-CLT UCL (Chen-1995)	22.15
		95% Modified-t UCL (Johnson-1978)	18.27

Nonparametric Distribution Free UCLs

95% CLT UCL	16.1	95% Jackknife UCL	17.32
95% Standard Bootstrap UCL	15.66	95% Bootstrap-t UCL	251.6
95% Hall's Bootstrap UCL	158.1	95% Percentile Bootstrap UCL	18.06
95% BCA Bootstrap UCL	23.77		
90% Chebyshev(Mean, Sd) UCL	23.81	95% Chebyshev(Mean, Sd) UCL	31.54
97.5% Chebyshev(Mean, Sd) UCL	42.27	99% Chebyshev(Mean, Sd) UCL	63.35

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.63	Mean	14.93
Maximum	87	Median	2.52
SD	28.6	Std. Error of Mean	9.533
Coefficient of Variation	1.915	Skewness	2.502
Mean of logged Data	1.522	SD of logged Data	1.423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	32.66	95% Adjusted-CLT UCL (Chen-1995)	39.11
		95% Modified-t UCL (Johnson-1978)	33.99

Nonparametric Distribution Free UCLs

95% CLT UCL	30.61	95% Jackknife UCL	32.66
95% Standard Bootstrap UCL	30.09	95% Bootstrap-t UCL	480.8
95% Hall's Bootstrap UCL	290.4	95% Percentile Bootstrap UCL	30.75
95% BCA Bootstrap UCL	40.1		
90% Chebyshev(Mean, Sd) UCL	43.53	95% Chebyshev(Mean, Sd) UCL	56.49
97.5% Chebyshev(Mean, Sd) UCL	74.47	99% Chebyshev(Mean, Sd) UCL	109.8

Suggested UCL to Use

95% Hall's Bootstrap UCL 290.4

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.95	Mean	74.72
Maximum	458	Median	12.7
SD	150.7	Std. Error of Mean	50.23
Coefficient of Variation	2.017	Skewness	2.567
Mean of logged Data	2.67	SD of logged Data	1.921

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	168.1	95% Adjusted-CLT UCL (Chen-1995)	203.3
		95% Modified-t UCL (Johnson-1978)	175.3

Nonparametric Distribution Free UCLs

95% CLT UCL	157.3	95% Jackknife UCL	168.1
95% Standard Bootstrap UCL	154.2	95% Bootstrap-t UCL	1363
95% Hall's Bootstrap UCL	688.8	95% Percentile Bootstrap UCL	162.6
95% BCA Bootstrap UCL	223.4		
90% Chebyshev(Mean, Sd) UCL	225.4	95% Chebyshev(Mean, Sd) UCL	293.7
97.5% Chebyshev(Mean, Sd) UCL	388.4	99% Chebyshev(Mean, Sd) UCL	574.5

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.38	Mean	89.26
Maximum	557	Median	16.3
SD	182.4	Std. Error of Mean	60.81
Coefficient of Variation	2.044	Skewness	2.63
Mean of logged Data	2.748	SD of logged Data	2.064

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	202.3	95% Adjusted-CLT UCL (Chen-1995)	246.2
		95% Modified-t UCL (Johnson-1978)	211.2

Nonparametric Distribution Free UCLs

95% CLT UCL	189.3	95% Jackknife UCL	202.3
95% Standard Bootstrap UCL	183.5	95% Bootstrap-t UCL	1478
95% Hall's Bootstrap UCL	917.3	95% Percentile Bootstrap UCL	197.4
95% BCA Bootstrap UCL	254.8		
90% Chebyshev(Mean, Sd) UCL	271.7	95% Chebyshev(Mean, Sd) UCL	354.3
97.5% Chebyshev(Mean, Sd) UCL	469	99% Chebyshev(Mean, Sd) UCL	694.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.48	Mean	108.4

Maximum	619	Median	25.5
SD	204	Std. Error of Mean	68.01
Coefficient of Variation	1.882	Skewness	2.446
Mean of logged Data	3.147	SD of logged Data	1.948

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	234.9	95% Adjusted-CLT UCL (Chen-1995)	279.5
		95% Modified-t UCL (Johnson-1978)	244.1

Nonparametric Distribution Free UCLs

95% CLT UCL	220.3	95% Jackknife UCL	234.9
95% Standard Bootstrap UCL	214.3	95% Bootstrap-t UCL	1307
95% Hall's Bootstrap UCL	864.6	95% Percentile Bootstrap UCL	223.3
95% BCA Bootstrap UCL	286.4		
90% Chebyshev(Mean, Sd) UCL	312.4	95% Chebyshev(Mean, Sd) UCL	404.9
97.5% Chebyshev(Mean, Sd) UCL	533.1	99% Chebyshev(Mean, Sd) UCL	785.1

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.04	Mean	70.7
Maximum	345	Median	21.8
SD	113	Std. Error of Mean	37.65
Coefficient of Variation	1.598	Skewness	2.221
Mean of logged Data	3.1	SD of logged Data	1.71

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	140.7	95% Adjusted-CLT UCL (Chen-1995)	162.4

		95% Modified-t UCL (Johnson-1978)	145.4

Nonparametric Distribution Free UCLs

95% CLT UCL	132.6	95% Jackknife UCL	140.7
95% Standard Bootstrap UCL	130.2	95% Bootstrap-t UCL	394
95% Hall's Bootstrap UCL	425	95% Percentile Bootstrap UCL	137.5
95% BCA Bootstrap UCL	166.9		
90% Chebyshev(Mean, Sd) UCL	183.7	95% Chebyshev(Mean, Sd) UCL	234.8
97.5% Chebyshev(Mean, Sd) UCL	305.8	99% Chebyshev(Mean, Sd) UCL	445.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.95	Mean	45.48
Maximum	268	Median	9.03
SD	87.84	Std. Error of Mean	29.28
Coefficient of Variation	1.931	Skewness	2.536
Mean of logged Data	2.414	SD of logged Data	1.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.92	95% Adjusted-CLT UCL (Chen-1995)	120.1
		95% Modified-t UCL (Johnson-1978)	104

Nonparametric Distribution Free UCLs

95% CLT UCL	93.64	95% Jackknife UCL	99.92
95% Standard Bootstrap UCL	90.04	95% Bootstrap-t UCL	667.7
95% Hall's Bootstrap UCL	375.4	95% Percentile Bootstrap UCL	96.33
95% BCA Bootstrap UCL	122.7		
90% Chebyshev(Mean, Sd) UCL	133.3	95% Chebyshev(Mean, Sd) UCL	173.1
97.5% Chebyshev(Mean, Sd) UCL	228.3	99% Chebyshev(Mean, Sd) UCL	336.8

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.84	Mean	103.3
Maximum	671	Median	20.7
SD	218.6	Std. Error of Mean	72.85
Coefficient of Variation	2.115	Skewness	2.739
Mean of logged Data	2.895	SD of logged Data	2.03

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	238.8	95% Adjusted-CLT UCL (Chen-1995)	294.2
		95% Modified-t UCL (Johnson-1978)	249.9

Nonparametric Distribution Free UCLs

95% CLT UCL	223.1	95% Jackknife UCL	238.8
95% Standard Bootstrap UCL	219.5	95% Bootstrap-t UCL	1774
95% Hall's Bootstrap UCL	968.8	95% Percentile Bootstrap UCL	238.1
95% BCA Bootstrap UCL	323.1		
90% Chebyshev(Mean, Sd) UCL	321.9	95% Chebyshev(Mean, Sd) UCL	420.9
97.5% Chebyshev(Mean, Sd) UCL	558.3	99% Chebyshev(Mean, Sd) UCL	828.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3	Mean	18.67
Maximum	103	Median	4.1
SD	33.17	Std. Error of Mean	11.06
Coefficient of Variation	1.776	Skewness	2.564
Mean of logged Data	2.009	SD of logged Data	1.252

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.23	95% Adjusted-CLT UCL (Chen-1995)	46.96
		95% Modified-t UCL (Johnson-1978)	40.81

Nonparametric Distribution Free UCLs

95% CLT UCL	36.86	95% Jackknife UCL	39.23
95% Standard Bootstrap UCL	35.57	95% Bootstrap-t UCL	287.2
95% Hall's Bootstrap UCL	200.8	95% Percentile Bootstrap UCL	37.69
95% BCA Bootstrap UCL	48.12		
90% Chebyshev(Mean, Sd) UCL	51.84	95% Chebyshev(Mean, Sd) UCL	66.87
97.5% Chebyshev(Mean, Sd) UCL	87.72	99% Chebyshev(Mean, Sd) UCL	128.7

Suggested UCL to Use

95% Hall's Bootstrap UCL	200.8

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.9	Mean	119
Maximum	669	Median	23.3
SD	225.4	Std. Error of Mean	75.12
Coefficient of Variation	1.894	Skewness	2.292
Mean of logged Data	3.022	SD of logged Data	2.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	258.7	95% Adjusted-CLT UCL (Chen-1995)	303.9
		95% Modified-t UCL (Johnson-1978)	268.2

Nonparametric Distribution Free UCLs

95% CLT UCL	242.5	95% Jackknife UCL	258.7
95% Standard Bootstrap UCL	236	95% Bootstrap-t UCL	1790
95% Hall's Bootstrap UCL	1120	95% Percentile Bootstrap UCL	239.8
95% BCA Bootstrap UCL	309.5		
90% Chebyshev(Mean, Sd) UCL	344.3	95% Chebyshev(Mean, Sd) UCL	446.4
97.5% Chebyshev(Mean, Sd) UCL	588.1	99% Chebyshev(Mean, Sd) UCL	866.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.936	Mean	2.945
Maximum	16.2	Median	1.215
SD	4.976	Std. Error of Mean	1.659
Coefficient of Variation	1.69	Skewness	2.987
Mean of logged Data	0.52	SD of logged Data	0.868

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.03	95% Adjusted-CLT UCL (Chen-1995)	7.438
		95% Modified-t UCL (Johnson-1978)	6.305

Nonparametric Distribution Free UCLs

95% CLT UCL	5.674	95% Jackknife UCL	6.03
95% Standard Bootstrap UCL	5.615	95% Bootstrap-t UCL	53.93
95% Hall's Bootstrap UCL	33.24	95% Percentile Bootstrap UCL	6.217
95% BCA Bootstrap UCL	7.914		
90% Chebyshev(Mean, Sd) UCL	7.921	95% Chebyshev(Mean, Sd) UCL	10.18
97.5% Chebyshev(Mean, Sd) UCL	13.3	99% Chebyshev(Mean, Sd) UCL	19.45

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	10.18

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.19	Mean	71.17
Maximum	391	Median	16.7
SD	129.1	Std. Error of Mean	43.04
Coefficient of Variation	1.814	Skewness	2.377
Mean of logged Data	2.901	SD of logged Data	1.78

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	151.2	95% Adjusted-CLT UCL (Chen-1995)	178.4
		95% Modified-t UCL (Johnson-1978)	156.9

Nonparametric Distribution Free UCLs

95% CLT UCL	142	95% Jackknife UCL	151.2
95% Standard Bootstrap UCL	139.6	95% Bootstrap-t UCL	798.9
95% Hall's Bootstrap UCL	596.7	95% Percentile Bootstrap UCL	143.9
95% BCA Bootstrap UCL	170.6		
90% Chebyshev(Mean, Sd) UCL	200.3	95% Chebyshev(Mean, Sd) UCL	258.8
97.5% Chebyshev(Mean, Sd) UCL	339.9	99% Chebyshev(Mean, Sd) UCL	499.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.65	Mean	9.746
Maximum	59.7	Median	3.09
SD	18.82	Std. Error of Mean	6.274
Coefficient of Variation	1.931	Skewness	2.947
Mean of logged Data	1.447	SD of logged Data	1.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.41	95% Adjusted-CLT UCL (Chen-1995)	26.65
		95% Modified-t UCL (Johnson-1978)	22.44

Nonparametric Distribution Free UCLs

95% CLT UCL	20.06	95% Jackknife UCL	21.41
95% Standard Bootstrap UCL	19.46	95% Bootstrap-t UCL	94.51
95% Hall's Bootstrap UCL	74	95% Percentile Bootstrap UCL	21.78
95% BCA Bootstrap UCL	28.05		
90% Chebyshev(Mean, Sd) UCL	28.57	95% Chebyshev(Mean, Sd) UCL	37.09
97.5% Chebyshev(Mean, Sd) UCL	48.92	99% Chebyshev(Mean, Sd) UCL	72.17

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3	Mean	61.78
Maximum	367	Median	10
SD	121.8	Std. Error of Mean	40.6
Coefficient of Variation	1.971	Skewness	2.462
Mean of logged Data	2.638	SD of logged Data	1.711

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	137.3	95% Adjusted-CLT UCL (Chen-1995)	164.2
		95% Modified-t UCL (Johnson-1978)	142.8

Nonparametric Distribution Free UCLs

95% CLT UCL	128.6	95% Jackknife UCL	137.3
95% Standard Bootstrap UCL	124.9	95% Bootstrap-t UCL	1331
95% Hall's Bootstrap UCL	752	95% Percentile Bootstrap UCL	130.9

95% BCA Bootstrap UCL	166.3		
90% Chebyshev(Mean, Sd) UCL	183.6	95% Chebyshev(Mean, Sd) UCL	238.7
97.5% Chebyshev(Mean, Sd) UCL	315.3	99% Chebyshev(Mean, Sd) UCL	465.7

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.15	Mean	125.6
Maximum	776	Median	22.8
SD	254.9	Std. Error of Mean	84.96
Coefficient of Variation	2.029	Skewness	2.593
Mean of logged Data	3.129	SD of logged Data	2.002

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	283.6	95% Adjusted-CLT UCL (Chen-1995)	343.8
		95% Modified-t UCL (Johnson-1978)	295.8

Nonparametric Distribution Free UCLs

95% CLT UCL	265.3	95% Jackknife UCL	283.6
95% Standard Bootstrap UCL	255.9	95% Bootstrap-t UCL	2179
95% Hall's Bootstrap UCL	1092	95% Percentile Bootstrap UCL	280.7
95% BCA Bootstrap UCL	355.1		
90% Chebyshev(Mean, Sd) UCL	380.5	95% Chebyshev(Mean, Sd) UCL	495.9
97.5% Chebyshev(Mean, Sd) UCL	656.1	99% Chebyshev(Mean, Sd) UCL	970.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.3	Mean	17.56
Maximum	35.2	Median	15.2
SD	6.918	Std. Error of Mean	2.306
Coefficient of Variation	0.394	Skewness	2.554
Mean of logged Data	2.816	SD of logged Data	0.306

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.84	95% Adjusted-CLT UCL (Chen-1995)	23.45
		95% Modified-t UCL (Johnson-1978)	22.17

Nonparametric Distribution Free UCLs

95% CLT UCL	21.35	95% Jackknife UCL	21.84
95% Standard Bootstrap UCL	21.25	95% Bootstrap-t UCL	33.42
95% Hall's Bootstrap UCL	38.27	95% Percentile Bootstrap UCL	21.74
95% BCA Bootstrap UCL	23.9		
90% Chebyshev(Mean, Sd) UCL	24.47	95% Chebyshev(Mean, Sd) UCL	27.61
97.5% Chebyshev(Mean, Sd) UCL	31.96	99% Chebyshev(Mean, Sd) UCL	40.5

Suggested UCL to Use

95% Student's-t UCL	21.84	or 95% Modified-t UCL	22.17

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.5	Mean	15.39
Maximum	18.9	Median	16.4
SD	3.607	Std. Error of Mean	1.202
Coefficient of Variation	0.234	Skewness	-0.534
Mean of logged Data	2.707	SD of logged Data	0.253

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.62	95% Adjusted-CLT UCL (Chen-1995)	17.14
		95% Modified-t UCL (Johnson-1978)	17.59

Nonparametric Distribution Free UCLs

95% CLT UCL	17.37	95% Jackknife UCL	17.62
95% Standard Bootstrap UCL	17.24	95% Bootstrap-t UCL	17.3
95% Hall's Bootstrap UCL	16.96	95% Percentile Bootstrap UCL	17.14
95% BCA Bootstrap UCL	17.19		
90% Chebyshev(Mean, Sd) UCL	19	95% Chebyshev(Mean, Sd) UCL	20.63
97.5% Chebyshev(Mean, Sd) UCL	22.9	99% Chebyshev(Mean, Sd) UCL	27.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	49.2	Mean	70.77
Maximum	110	Median	59.6
SD	24.72	Std. Error of Mean	8.239
Coefficient of Variation	0.349	Skewness	0.819
Mean of logged Data	4.209	SD of logged Data	0.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	86.09	95% Adjusted-CLT UCL (Chen-1995)	86.72
		95% Modified-t UCL (Johnson-1978)	86.46

Nonparametric Distribution Free UCLs

95% CLT UCL	84.32	95% Jackknife UCL	86.09
95% Standard Bootstrap UCL	83.47	95% Bootstrap-t UCL	89.63
95% Hall's Bootstrap UCL	80.49	95% Percentile Bootstrap UCL	84.07
95% BCA Bootstrap UCL	86.46		
90% Chebyshev(Mean, Sd) UCL	95.48	95% Chebyshev(Mean, Sd) UCL	106.7

97.5% Chebyshev(Mean, Sd) UCL	122.2	99% Chebyshev(Mean, Sd) UCL	152.7

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:26:54 AM
From File	Table 1. Parcel Analytical Results (APN32404624) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.985	Mean	5.54
Maximum	13.2	Median	2.115
SD	4.979	Std. Error of Mean	1.66
Coefficient of Variation	0.899	Skewness	0.873
Mean of logged Data	1.361	SD of logged Data	0.862

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.626	95% Adjusted-CLT UCL (Chen-1995)	8.786
		95% Modified-t UCL (Johnson-1978)	8.707

Nonparametric Distribution Free UCLs

95% CLT UCL	8.27	95% Jackknife UCL	8.626
95% Standard Bootstrap UCL	8.151	95% Bootstrap-t UCL	9.171
95% Hall's Bootstrap UCL	7.172	95% Percentile Bootstrap UCL	8.017
95% BCA Bootstrap UCL	8.769		
90% Chebyshev(Mean, Sd) UCL	10.52	95% Chebyshev(Mean, Sd) UCL	12.77
97.5% Chebyshev(Mean, Sd) UCL	15.9	99% Chebyshev(Mean, Sd) UCL	22.05

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.81	Mean	6.718
Maximum	16.1	Median	2.115
SD	6.732	Std. Error of Mean	2.244
Coefficient of Variation	1.002	Skewness	0.846
Mean of logged Data	1.441	SD of logged Data	0.999

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.89	95% Adjusted-CLT UCL (Chen-1995)	11.08
		95% Modified-t UCL (Johnson-1978)	11

Nonparametric Distribution Free UCLs

95% CLT UCL	10.41	95% Jackknife UCL	10.89
95% Standard Bootstrap UCL	10.24	95% Bootstrap-t UCL	11.43
95% Hall's Bootstrap UCL	8.872	95% Percentile Bootstrap UCL	10.03
95% BCA Bootstrap UCL	11.08		
90% Chebyshev(Mean, Sd) UCL	13.45	95% Chebyshev(Mean, Sd) UCL	16.5
97.5% Chebyshev(Mean, Sd) UCL	20.73	99% Chebyshev(Mean, Sd) UCL	29.05

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.5

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	10.73
Maximum	24.8	Median	4.53
SD	10.41	Std. Error of Mean	3.471
Coefficient of Variation	0.971	Skewness	0.834
Mean of logged Data	1.939	SD of logged Data	0.967

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.18	95% Adjusted-CLT UCL (Chen-1995)	17.47
		95% Modified-t UCL (Johnson-1978)	17.34

Nonparametric Distribution Free UCLs

95% CLT UCL	16.44	95% Jackknife UCL	17.18
95% Standard Bootstrap UCL	16.15	95% Bootstrap-t UCL	17.93
95% Hall's Bootstrap UCL	14.05	95% Percentile Bootstrap UCL	15.58
95% BCA Bootstrap UCL	17.51		
90% Chebyshev(Mean, Sd) UCL	21.14	95% Chebyshev(Mean, Sd) UCL	25.86
97.5% Chebyshev(Mean, Sd) UCL	32.4	99% Chebyshev(Mean, Sd) UCL	45.27

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.79	Mean	5.852
Maximum	11.8	Median	3.205
SD	4.191	Std. Error of Mean	1.397
Coefficient of Variation	0.716	Skewness	0.858
Mean of logged Data	1.557	SD of logged Data	0.661

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.45	95% Adjusted-CLT UCL (Chen-1995)	8.577
		95% Modified-t UCL (Johnson-1978)	8.517

Nonparametric Distribution Free UCLs

95% CLT UCL	8.15	95% Jackknife UCL	8.45
95% Standard Bootstrap UCL	7.989	95% Bootstrap-t UCL	8.784
95% Hall's Bootstrap UCL	7.168	95% Percentile Bootstrap UCL	7.814
95% BCA Bootstrap UCL	8.583		
90% Chebyshev(Mean, Sd) UCL	10.04	95% Chebyshev(Mean, Sd) UCL	11.94
97.5% Chebyshev(Mean, Sd) UCL	14.58	99% Chebyshev(Mean, Sd) UCL	19.75

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.94

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	4.518
Maximum	9.85	Median	2.58
SD	3.422	Std. Error of Mean	1.141
Coefficient of Variation	0.757	Skewness	0.882
Mean of logged Data	1.271	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.639	95% Adjusted-CLT UCL (Chen-1995)	6.752
		95% Modified-t UCL (Johnson-1978)	6.695

Nonparametric Distribution Free UCLs

95% CLT UCL	6.394	95% Jackknife UCL	6.639
95% Standard Bootstrap UCL	6.301	95% Bootstrap-t UCL	7.086
95% Hall's Bootstrap UCL	5.64	95% Percentile Bootstrap UCL	6.205
95% BCA Bootstrap UCL	6.544		
90% Chebyshev(Mean, Sd) UCL	7.939	95% Chebyshev(Mean, Sd) UCL	9.489
97.5% Chebyshev(Mean, Sd) UCL	11.64	99% Chebyshev(Mean, Sd) UCL	15.87

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.489

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.985	Mean	7.933

Maximum	20	Median	2.7
SD	8.024	Std. Error of Mean	2.675
Coefficient of Variation	1.011	Skewness	0.839
Mean of logged Data	1.58	SD of logged Data	1.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.91	95% Adjusted-CLT UCL (Chen-1995)	13.13
		95% Modified-t UCL (Johnson-1978)	13.03

Nonparametric Distribution Free UCLs

95% CLT UCL	12.33	95% Jackknife UCL	12.91
95% Standard Bootstrap UCL	12.11	95% Bootstrap-t UCL	13.77
95% Hall's Bootstrap UCL	10.66	95% Percentile Bootstrap UCL	12.16
95% BCA Bootstrap UCL	13.31		
90% Chebyshev(Mean, Sd) UCL	15.96	95% Chebyshev(Mean, Sd) UCL	19.59
97.5% Chebyshev(Mean, Sd) UCL	24.64	99% Chebyshev(Mean, Sd) UCL	34.55

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	3.158
Maximum	3.25	Median	3.165
SD	0.057	Std. Error of Mean	0.019
Coefficient of Variation	0.018	Skewness	-0.363
Mean of logged Data	1.15	SD of logged Data	0.0181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.193	95% Adjusted-CLT UCL (Chen-1995)	3.187

		95% Modified-t UCL (Johnson-1978)	3.193

Nonparametric Distribution Free UCLs

95% CLT UCL	3.189	95% Jackknife UCL	3.193
95% Standard Bootstrap UCL	3.187	95% Bootstrap-t UCL	3.19
95% Hall's Bootstrap UCL	3.189	95% Percentile Bootstrap UCL	3.186
95% BCA Bootstrap UCL	3.187		
90% Chebyshev(Mean, Sd) UCL	3.215	95% Chebyshev(Mean, Sd) UCL	3.241
97.5% Chebyshev(Mean, Sd) UCL	3.276	99% Chebyshev(Mean, Sd) UCL	3.347

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	7.899
Maximum	21.3	Median	2.115
SD	8.184	Std. Error of Mean	2.728
Coefficient of Variation	1.036	Skewness	0.894
Mean of logged Data	1.552	SD of logged Data	1.065

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.97	95% Adjusted-CLT UCL (Chen-1995)	13.25
		95% Modified-t UCL (Johnson-1978)	13.11

Nonparametric Distribution Free UCLs

95% CLT UCL	12.39	95% Jackknife UCL	12.97
95% Standard Bootstrap UCL	12.08	95% Bootstrap-t UCL	14.05
95% Hall's Bootstrap UCL	10.81	95% Percentile Bootstrap UCL	12.19
95% BCA Bootstrap UCL	13.1		
90% Chebyshev(Mean, Sd) UCL	16.08	95% Chebyshev(Mean, Sd) UCL	19.79
97.5% Chebyshev(Mean, Sd) UCL	24.93	99% Chebyshev(Mean, Sd) UCL	35.04

Suggested UCL to Use

95% Hall's Bootstrap UCL	10.81

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	6.746
Maximum	14.5	Median	3.36
SD	5.14	Std. Error of Mean	1.713
Coefficient of Variation	0.762	Skewness	0.875
Mean of logged Data	1.669	SD of logged Data	0.707

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.932	95% Adjusted-CLT UCL (Chen-1995)	10.1
		95% Modified-t UCL (Johnson-1978)	10.02

Nonparametric Distribution Free UCLs

95% CLT UCL	9.564	95% Jackknife UCL	9.932
95% Standard Bootstrap UCL	9.425	95% Bootstrap-t UCL	10.5
95% Hall's Bootstrap UCL	8.402	95% Percentile Bootstrap UCL	9.293
95% BCA Bootstrap UCL	10.05		
90% Chebyshev(Mean, Sd) UCL	11.89	95% Chebyshev(Mean, Sd) UCL	14.21
97.5% Chebyshev(Mean, Sd) UCL	17.45	99% Chebyshev(Mean, Sd) UCL	23.79

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.915	Mean	0.957

Maximum	1.07	Median	0.955
SD	0.048	Std. Error of Mean	0.016
Coefficient of Variation	0.0502	Skewness	1.806
Mean of logged Data	-0.0454	SD of logged Data	0.0486

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.986	95% Adjusted-CLT UCL (Chen-1995)	0.993
		95% Modified-t UCL (Johnson-1978)	0.988

Nonparametric Distribution Free UCLs

95% CLT UCL	0.983	95% Jackknife UCL	0.986
95% Standard Bootstrap UCL	0.981	95% Bootstrap-t UCL	1.004
95% Hall's Bootstrap UCL	1.108	95% Percentile Bootstrap UCL	0.984
95% BCA Bootstrap UCL	0.992		
90% Chebyshev(Mean, Sd) UCL	1.005	95% Chebyshev(Mean, Sd) UCL	1.026
97.5% Chebyshev(Mean, Sd) UCL	1.057	99% Chebyshev(Mean, Sd) UCL	1.116

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	3.699
Maximum	5.38	Median	3.205
SD	0.838	Std. Error of Mean	0.279
Coefficient of Variation	0.227	Skewness	1.271
Mean of logged Data	1.288	SD of logged Data	0.209

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.218	95% Adjusted-CLT UCL (Chen-1995)	4.285

		95% Modified-t UCL (Johnson-1978)	4.238

Nonparametric Distribution Free UCLs

95% CLT UCL	4.158	95% Jackknife UCL	4.218
95% Standard Bootstrap UCL	4.131	95% Bootstrap-t UCL	4.477
95% Hall's Bootstrap UCL	4.053	95% Percentile Bootstrap UCL	4.164
95% BCA Bootstrap UCL	4.252		
90% Chebyshev(Mean, Sd) UCL	4.537	95% Chebyshev(Mean, Sd) UCL	4.916
97.5% Chebyshev(Mean, Sd) UCL	5.443	99% Chebyshev(Mean, Sd) UCL	6.478

Suggested UCL to Use

95% Student's-t UCL	4.218	or 95% Modified-t UCL	4.238

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	8.235
Maximum	20.8	Median	3.25
SD	7.392	Std. Error of Mean	2.464
Coefficient of Variation	0.898	Skewness	0.961
Mean of logged Data	1.767	SD of logged Data	0.845

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.82	95% Adjusted-CLT UCL (Chen-1995)	13.13
		95% Modified-t UCL (Johnson-1978)	12.95

Nonparametric Distribution Free UCLs

95% CLT UCL	12.29	95% Jackknife UCL	12.82
95% Standard Bootstrap UCL	12.09	95% Bootstrap-t UCL	14.19
95% Hall's Bootstrap UCL	10.71	95% Percentile Bootstrap UCL	11.95
95% BCA Bootstrap UCL	12.78		
90% Chebyshev(Mean, Sd) UCL	15.63	95% Chebyshev(Mean, Sd) UCL	18.98
97.5% Chebyshev(Mean, Sd) UCL	23.62	99% Chebyshev(Mean, Sd) UCL	32.75

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.98

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	15.5	Mean	17.1
Maximum	23.8	Median	16.3
SD	2.566	Std. Error of Mean	0.855
Coefficient of Variation	0.15	Skewness	2.766
Mean of logged Data	2.831	SD of logged Data	0.131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.69	95% Adjusted-CLT UCL (Chen-1995)	19.35
		95% Modified-t UCL (Johnson-1978)	18.82

Nonparametric Distribution Free UCLs

95% CLT UCL	18.51	95% Jackknife UCL	18.69
95% Standard Bootstrap UCL	18.45	95% Bootstrap-t UCL	22.68
95% Hall's Bootstrap UCL	24.27	95% Percentile Bootstrap UCL	18.68
95% BCA Bootstrap UCL	19.58		
90% Chebyshev(Mean, Sd) UCL	19.67	95% Chebyshev(Mean, Sd) UCL	20.83
97.5% Chebyshev(Mean, Sd) UCL	22.44	99% Chebyshev(Mean, Sd) UCL	25.61

Suggested UCL to Use

95% Student's-t UCL	18.69	or 95% Modified-t UCL	18.82

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	10.4	Mean	11.8
Maximum	14.1	Median	11.2
SD	1.372	Std. Error of Mean	0.457
Coefficient of Variation	0.116	Skewness	0.766
Mean of logged Data	2.462	SD of logged Data	0.113

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.65	95% Adjusted-CLT UCL (Chen-1995)	12.68
		95% Modified-t UCL (Johnson-1978)	12.67

Nonparametric Distribution Free UCLs

95% CLT UCL	12.55	95% Jackknife UCL	12.65
95% Standard Bootstrap UCL	12.5	95% Bootstrap-t UCL	12.83
95% Hall's Bootstrap UCL	12.55	95% Percentile Bootstrap UCL	12.58
95% BCA Bootstrap UCL	12.63		
90% Chebyshev(Mean, Sd) UCL	13.17	95% Chebyshev(Mean, Sd) UCL	13.79
97.5% Chebyshev(Mean, Sd) UCL	14.66	99% Chebyshev(Mean, Sd) UCL	16.35

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	52.9	Mean	58.62
Maximum	69	Median	56.9
SD	5.425	Std. Error of Mean	1.808
Coefficient of Variation	0.0925	Skewness	0.934
Mean of logged Data	4.067	SD of logged Data	0.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	61.98	95% Adjusted-CLT UCL (Chen-1995)	62.2
		95% Modified-t UCL (Johnson-1978)	62.08

Nonparametric Distribution Free UCLs

95% CLT UCL	61.6	95% Jackknife UCL	61.98
95% Standard Bootstrap UCL	61.49	95% Bootstrap-t UCL	63.4

95% Hall's Bootstrap UCL	61.9	95% Percentile Bootstrap UCL	61.41
95% BCA Bootstrap UCL	61.67		
90% Chebyshev(Mean, Sd) UCL	64.05	95% Chebyshev(Mean, Sd) UCL	66.5
97.5% Chebyshev(Mean, Sd) UCL	69.91	99% Chebyshev(Mean, Sd) UCL	76.61

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:28:53 AM
From File	Table 1. Parcel Analytical Reults (APN32404625) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.601	Mean	0.906
Maximum	0.995	Median	0.93
SD	0.118	Std. Error of Mean	0.0394
Coefficient of Variation	0.131	Skewness	-2.621
Mean of logged Data	-0.108	SD of logged Data	0.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.979	95% Adjusted-CLT UCL (Chen-1995)	0.934
		95% Modified-t UCL (Johnson-1978)	0.973

Nonparametric Distribution Free UCLs

95% CLT UCL	0.971	95% Jackknife UCL	0.979
95% Standard Bootstrap UCL	0.966	95% Bootstrap-t UCL	0.955
95% Hall's Bootstrap UCL	0.946	95% Percentile Bootstrap UCL	0.954
95% BCA Bootstrap UCL	0.947		
90% Chebyshev(Mean, Sd) UCL	1.024	95% Chebyshev(Mean, Sd) UCL	1.077
97.5% Chebyshev(Mean, Sd) UCL	1.152	99% Chebyshev(Mean, Sd) UCL	1.298

Suggested UCL to Use

95% Student's-t UCL	0.979	or 95% Modified-t UCL	0.973

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	4.623
Maximum	10.6	Median	2.155
SD	3.547	Std. Error of Mean	1.182
Coefficient of Variation	0.767	Skewness	0.905
Mean of logged Data	1.283	SD of logged Data	0.726

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.821	95% Adjusted-CLT UCL (Chen-1995)	6.949
		95% Modified-t UCL (Johnson-1978)	6.881

Nonparametric Distribution Free UCLs

95% CLT UCL	6.568	95% Jackknife UCL	6.821
95% Standard Bootstrap UCL	6.507	95% Bootstrap-t UCL	7.48
95% Hall's Bootstrap UCL	5.941	95% Percentile Bootstrap UCL	6.681
95% BCA Bootstrap UCL	6.804		
90% Chebyshev(Mean, Sd) UCL	8.17	95% Chebyshev(Mean, Sd) UCL	9.776
97.5% Chebyshev(Mean, Sd) UCL	12.01	99% Chebyshev(Mean, Sd) UCL	16.39

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.776

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.55	Mean	5.178
Maximum	12.2	Median	2.075
SD	4.452	Std. Error of Mean	1.484
Coefficient of Variation	0.86	Skewness	0.826
Mean of logged Data	1.309	SD of logged Data	0.858

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.937	95% Adjusted-CLT UCL (Chen-1995)	8.055
		95% Modified-t UCL (Johnson-1978)	8.005

Nonparametric Distribution Free UCLs

95% CLT UCL	7.618	95% Jackknife UCL	7.937
95% Standard Bootstrap UCL	7.473	95% Bootstrap-t UCL	8.694
95% Hall's Bootstrap UCL	6.88	95% Percentile Bootstrap UCL	7.616
95% BCA Bootstrap UCL	8.012		
90% Chebyshev(Mean, Sd) UCL	9.629	95% Chebyshev(Mean, Sd) UCL	11.65
97.5% Chebyshev(Mean, Sd) UCL	14.44	99% Chebyshev(Mean, Sd) UCL	19.94

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.65

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.71	Mean	8.086
Maximum	18.6	Median	3.19
SD	6.695	Std. Error of Mean	2.232
Coefficient of Variation	0.828	Skewness	0.781
Mean of logged Data	1.778	SD of logged Data	0.83

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.24	95% Adjusted-CLT UCL (Chen-1995)	12.38
		95% Modified-t UCL (Johnson-1978)	12.33

Nonparametric Distribution Free UCLs

95% CLT UCL	11.76	95% Jackknife UCL	12.24
95% Standard Bootstrap UCL	11.47	95% Bootstrap-t UCL	12.98
95% Hall's Bootstrap UCL	10.65	95% Percentile Bootstrap UCL	11.91
95% BCA Bootstrap UCL	12.23		
90% Chebyshev(Mean, Sd) UCL	14.78	95% Chebyshev(Mean, Sd) UCL	17.81
97.5% Chebyshev(Mean, Sd) UCL	22.02	99% Chebyshev(Mean, Sd) UCL	30.29

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	17.81

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	5.199
Maximum	9.23	Median	3.315
SD	2.6	Std. Error of Mean	0.867
Coefficient of Variation	0.5	Skewness	0.696
Mean of logged Data	1.542	SD of logged Data	0.481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.811	95% Adjusted-CLT UCL (Chen-1995)	6.839
		95% Modified-t UCL (Johnson-1978)	6.844

Nonparametric Distribution Free UCLs

95% CLT UCL	6.624	95% Jackknife UCL	6.811
95% Standard Bootstrap UCL	6.522	95% Bootstrap-t UCL	7.259
95% Hall's Bootstrap UCL	6.298	95% Percentile Bootstrap UCL	6.556
95% BCA Bootstrap UCL	6.802		
90% Chebyshev(Mean, Sd) UCL	7.799	95% Chebyshev(Mean, Sd) UCL	8.977
97.5% Chebyshev(Mean, Sd) UCL	10.61	99% Chebyshev(Mean, Sd) UCL	13.82

Suggested UCL to Use

95% Student's-t UCL	6.811	or 95% Modified-t UCL	6.844

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	3.776
Maximum	7.47	Median	2.155

SD	2.209	Std. Error of Mean	0.736
Coefficient of Variation	0.585	Skewness	0.759
Mean of logged Data	1.182	SD of logged Data	0.565

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.145	95% Adjusted-CLT UCL (Chen-1995)	5.186
		95% Modified-t UCL (Johnson-1978)	5.176

Nonparametric Distribution Free UCLs

95% CLT UCL	4.987	95% Jackknife UCL	5.145
95% Standard Bootstrap UCL	4.926	95% Bootstrap-t UCL	5.626
95% Hall's Bootstrap UCL	4.875	95% Percentile Bootstrap UCL	4.952
95% BCA Bootstrap UCL	5.138		
90% Chebyshev(Mean, Sd) UCL	5.985	95% Chebyshev(Mean, Sd) UCL	6.985
97.5% Chebyshev(Mean, Sd) UCL	8.374	99% Chebyshev(Mean, Sd) UCL	11.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.985

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	6.7
Maximum	16	Median	2.24
SD	6.097	Std. Error of Mean	2.032
Coefficient of Variation	0.91	Skewness	0.751
Mean of logged Data	1.5	SD of logged Data	0.951

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.48	95% Adjusted-CLT UCL (Chen-1995)	10.59
		95% Modified-t UCL (Johnson-1978)	10.56

Nonparametric Distribution Free UCLs

95% CLT UCL	10.04	95% Jackknife UCL	10.48
95% Standard Bootstrap UCL	9.816	95% Bootstrap-t UCL	11.17
95% Hall's Bootstrap UCL	9.075	95% Percentile Bootstrap UCL	9.994
95% BCA Bootstrap UCL	10.61		
90% Chebyshev(Mean, Sd) UCL	12.8	95% Chebyshev(Mean, Sd) UCL	15.56
97.5% Chebyshev(Mean, Sd) UCL	19.39	99% Chebyshev(Mean, Sd) UCL	26.92

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 15.56

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.41	Mean	3.011
Maximum	3.32	Median	3.1
SD	0.333	Std. Error of Mean	0.111
Coefficient of Variation	0.111	Skewness	-1.216
Mean of logged Data	1.096	SD of logged Data	0.118

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.217	95% Adjusted-CLT UCL (Chen-1995)	3.145
		95% Modified-t UCL (Johnson-1978)	3.209

Nonparametric Distribution Free UCLs

95% CLT UCL	3.193	95% Jackknife UCL	3.217
95% Standard Bootstrap UCL	3.183	95% Bootstrap-t UCL	3.175
95% Hall's Bootstrap UCL	3.151	95% Percentile Bootstrap UCL	3.167
95% BCA Bootstrap UCL	3.152		
90% Chebyshev(Mean, Sd) UCL	3.344	95% Chebyshev(Mean, Sd) UCL	3.494
97.5% Chebyshev(Mean, Sd) UCL	3.704	99% Chebyshev(Mean, Sd) UCL	4.115

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	7.214
Maximum	18.2	Median	2.89
SD	6.95	Std. Error of Mean	2.317
Coefficient of Variation	0.963	Skewness	0.868
Mean of logged Data	1.549	SD of logged Data	0.965

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.52	95% Adjusted-CLT UCL (Chen-1995)	11.74
		95% Modified-t UCL (Johnson-1978)	11.63

Nonparametric Distribution Free UCLs

95% CLT UCL	11.02	95% Jackknife UCL	11.52
95% Standard Bootstrap UCL	10.88	95% Bootstrap-t UCL	12.43
95% Hall's Bootstrap UCL	9.61	95% Percentile Bootstrap UCL	10.73
95% BCA Bootstrap UCL	11.59		
90% Chebyshev(Mean, Sd) UCL	14.16	95% Chebyshev(Mean, Sd) UCL	17.31
97.5% Chebyshev(Mean, Sd) UCL	21.68	99% Chebyshev(Mean, Sd) UCL	30.26

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	5.41
Maximum	10.2	Median	3.315
SD	2.915	Std. Error of Mean	0.972
Coefficient of Variation	0.539	Skewness	0.769

Mean of logged Data	1.566	SD of logged Data	0.514

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.217	95% Adjusted-CLT UCL (Chen-1995)	7.274
		95% Modified-t UCL (Johnson-1978)	7.258

Nonparametric Distribution Free UCLs

95% CLT UCL	7.008	95% Jackknife UCL	7.217
95% Standard Bootstrap UCL	6.884	95% Bootstrap-t UCL	7.75
95% Hall's Bootstrap UCL	6.715	95% Percentile Bootstrap UCL	7.011
95% BCA Bootstrap UCL	7.235		
90% Chebyshev(Mean, Sd) UCL	8.325	95% Chebyshev(Mean, Sd) UCL	9.645
97.5% Chebyshev(Mean, Sd) UCL	11.48	99% Chebyshev(Mean, Sd) UCL	15.08

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.645

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.895	Mean	0.984
Maximum	1.31	Median	0.955
SD	0.126	Std. Error of Mean	0.0419
Coefficient of Variation	0.128	Skewness	2.668
Mean of logged Data	-0.0219	SD of logged Data	0.114

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.062	95% Adjusted-CLT UCL (Chen-1995)	1.093
		95% Modified-t UCL (Johnson-1978)	1.069

Nonparametric Distribution Free UCLs

95% CLT UCL	1.053	95% Jackknife UCL	1.062
95% Standard Bootstrap UCL	1.05	95% Bootstrap-t UCL	1.223
95% Hall's Bootstrap UCL	1.349	95% Percentile Bootstrap UCL	1.061
95% BCA Bootstrap UCL	1.079		
90% Chebyshev(Mean, Sd) UCL	1.11	95% Chebyshev(Mean, Sd) UCL	1.167
97.5% Chebyshev(Mean, Sd) UCL	1.246	99% Chebyshev(Mean, Sd) UCL	1.402

Suggested UCL to Use

95% Student's-t UCL	1.062	or 95% Modified-t UCL	1.069

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	3.763
Maximum	5.38	Median	3.245
SD	0.895	Std. Error of Mean	0.298
Coefficient of Variation	0.238	Skewness	1.078
Mean of logged Data	1.302	SD of logged Data	0.221

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.318	95% Adjusted-CLT UCL (Chen-1995)	4.368
		95% Modified-t UCL (Johnson-1978)	4.335

Nonparametric Distribution Free UCLs

95% CLT UCL	4.254	95% Jackknife UCL	4.318
95% Standard Bootstrap UCL	4.226	95% Bootstrap-t UCL	4.65
95% Hall's Bootstrap UCL	4.103	95% Percentile Bootstrap UCL	4.251
95% BCA Bootstrap UCL	4.372		
90% Chebyshev(Mean, Sd) UCL	4.658	95% Chebyshev(Mean, Sd) UCL	5.063
97.5% Chebyshev(Mean, Sd) UCL	5.626	99% Chebyshev(Mean, Sd) UCL	6.731

Suggested UCL to Use

95% Student's-t UCL	4.318	or 95% Modified-t UCL	4.335

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.32	Mean	7.328
Maximum	17	Median	3.19
SD	6.394	Std. Error of Mean	2.131
Coefficient of Variation	0.873	Skewness	0.863
Mean of logged Data	1.662	SD of logged Data	0.837

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.29	95% Adjusted-CLT UCL (Chen-1995)	11.49
		95% Modified-t UCL (Johnson-1978)	11.39

Nonparametric Distribution Free UCLs

95% CLT UCL	10.83	95% Jackknife UCL	11.29
95% Standard Bootstrap UCL	10.65	95% Bootstrap-t UCL	11.96
95% Hall's Bootstrap UCL	9.424	95% Percentile Bootstrap UCL	10.6
95% BCA Bootstrap UCL	11.44		
90% Chebyshev(Mean, Sd) UCL	13.72	95% Chebyshev(Mean, Sd) UCL	16.62
97.5% Chebyshev(Mean, Sd) UCL	20.64	99% Chebyshev(Mean, Sd) UCL	28.53

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.62

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13	Mean	14.93
Maximum	16.3	Median	15.3
SD	1.229	Std. Error of Mean	0.41
Coefficient of Variation	0.0823	Skewness	-0.699
Mean of logged Data	2.7	SD of logged Data	0.0845

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.7	95% Adjusted-CLT UCL (Chen-1995)	15.51
		95% Modified-t UCL (Johnson-1978)	15.68

Nonparametric Distribution Free UCLs

95% CLT UCL	15.61	95% Jackknife UCL	15.7
95% Standard Bootstrap UCL	15.57	95% Bootstrap-t UCL	15.59
95% Hall's Bootstrap UCL	15.5	95% Percentile Bootstrap UCL	15.56
95% BCA Bootstrap UCL	15.52		
90% Chebyshev(Mean, Sd) UCL	16.16	95% Chebyshev(Mean, Sd) UCL	16.72
97.5% Chebyshev(Mean, Sd) UCL	17.49	99% Chebyshev(Mean, Sd) UCL	19.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.85	Mean	16.06
Maximum	54.9	Median	11.1
SD	14.6	Std. Error of Mean	4.866
Coefficient of Variation	0.909	Skewness	2.974
Mean of logged Data	2.59	SD of logged Data	0.538

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.11	95% Adjusted-CLT UCL (Chen-1995)	29.22
		95% Modified-t UCL (Johnson-1978)	25.91

Nonparametric Distribution Free UCLs

95% CLT UCL	24.06	95% Jackknife UCL	25.11
95% Standard Bootstrap UCL	23.44	95% Bootstrap-t UCL	104.5

95% Hall's Bootstrap UCL	75.78	95% Percentile Bootstrap UCL	25.69
95% BCA Bootstrap UCL	30.61		
90% Chebyshev(Mean, Sd) UCL	30.66	95% Chebyshev(Mean, Sd) UCL	37.27
97.5% Chebyshev(Mean, Sd) UCL	46.45	99% Chebyshev(Mean, Sd) UCL	64.48

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	37.27

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	50.4	Mean	51.68
Maximum	54.2	Median	51.2
SD	1.367	Std. Error of Mean	0.456
Coefficient of Variation	0.0265	Skewness	1.031
Mean of logged Data	3.945	SD of logged Data	0.0262

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.53	95% Adjusted-CLT UCL (Chen-1995)	52.59
		95% Modified-t UCL (Johnson-1978)	52.55

Nonparametric Distribution Free UCLs

95% CLT UCL	52.43	95% Jackknife UCL	52.53
95% Standard Bootstrap UCL	52.39	95% Bootstrap-t UCL	53.04
95% Hall's Bootstrap UCL	53.23	95% Percentile Bootstrap UCL	52.43
95% BCA Bootstrap UCL	52.5		
90% Chebyshev(Mean, Sd) UCL	53.05	95% Chebyshev(Mean, Sd) UCL	53.66
97.5% Chebyshev(Mean, Sd) UCL	54.52	99% Chebyshev(Mean, Sd) UCL	56.21

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:30:48 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404629A) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.604	Mean	1.258
Maximum	2.11	Median	0.984
SD	0.556	Std. Error of Mean	0.185
Coefficient of Variation	0.442	Skewness	0.354
Mean of logged Data	0.138	SD of logged Data	0.46

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.602	95% Adjusted-CLT UCL (Chen-1995)	1.586
		95% Modified-t UCL (Johnson-1978)	1.606

Nonparametric Distribution Free UCLs

95% CLT UCL	1.563	95% Jackknife UCL	1.602
95% Standard Bootstrap UCL	1.537	95% Bootstrap-t UCL	1.61
95% Hall's Bootstrap UCL	1.534	95% Percentile Bootstrap UCL	1.549
95% BCA Bootstrap UCL	1.589		
90% Chebyshev(Mean, Sd) UCL	1.814	95% Chebyshev(Mean, Sd) UCL	2.066
97.5% Chebyshev(Mean, Sd) UCL	2.416	99% Chebyshev(Mean, Sd) UCL	3.103

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.453	Mean	0.57
Maximum	0.799	Median	0.515
SD	0.132	Std. Error of Mean	0.0438
Coefficient of Variation	0.231	Skewness	1.281
Mean of logged Data	-0.583	SD of logged Data	0.212

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.652	95% Adjusted-CLT UCL (Chen-1995)	0.662
		95% Modified-t UCL (Johnson-1978)	0.655

Nonparametric Distribution Free UCLs

95% CLT UCL	0.642	95% Jackknife UCL	0.652
95% Standard Bootstrap UCL	0.638	95% Bootstrap-t UCL	0.772
95% Hall's Bootstrap UCL	0.77	95% Percentile Bootstrap UCL	0.641
95% BCA Bootstrap UCL	0.664		
90% Chebyshev(Mean, Sd) UCL	0.702	95% Chebyshev(Mean, Sd) UCL	0.761
97.5% Chebyshev(Mean, Sd) UCL	0.844	99% Chebyshev(Mean, Sd) UCL	1.007

Suggested UCL to Use

95% Student's-t UCL	0.652	or 95% Modified-t UCL	0.655

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.59	Mean	2.101
Maximum	3.48	Median	2
SD	0.555	Std. Error of Mean	0.185
Coefficient of Variation	0.264	Skewness	2.208
Mean of logged Data	0.717	SD of logged Data	0.228

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.445	95% Adjusted-CLT UCL (Chen-1995)	2.551
		95% Modified-t UCL (Johnson-1978)	2.468

Nonparametric Distribution Free UCLs

95% CLT UCL	2.405	95% Jackknife UCL	2.445
95% Standard Bootstrap UCL	2.399	95% Bootstrap-t UCL	2.716
95% Hall's Bootstrap UCL	3.825	95% Percentile Bootstrap UCL	2.422
95% BCA Bootstrap UCL	2.492		
90% Chebyshev(Mean, Sd) UCL	2.656	95% Chebyshev(Mean, Sd) UCL	2.908
97.5% Chebyshev(Mean, Sd) UCL	3.257	99% Chebyshev(Mean, Sd) UCL	3.942

Suggested UCL to Use

95% Student's-t UCL	2.445	or 95% Modified-t UCL	2.468

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	17.33
Maximum	78.3	Median	10.3
SD	24.35	Std. Error of Mean	8.115
Coefficient of Variation	1.405	Skewness	2.379
Mean of logged Data	2.101	SD of logged Data	1.312

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.42	95% Adjusted-CLT UCL (Chen-1995)	37.55
		95% Modified-t UCL (Johnson-1978)	33.49

Nonparametric Distribution Free UCLs

95% CLT UCL	30.68	95% Jackknife UCL	32.42
95% Standard Bootstrap UCL	29.88	95% Bootstrap-t UCL	57.82
95% Hall's Bootstrap UCL	80.25	95% Percentile Bootstrap UCL	31.93
95% BCA Bootstrap UCL	37.27		
90% Chebyshev(Mean, Sd) UCL	41.68	95% Chebyshev(Mean, Sd) UCL	52.7
97.5% Chebyshev(Mean, Sd) UCL	68.01	99% Chebyshev(Mean, Sd) UCL	98.08

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	23.91
Maximum	106	Median	14.3
SD	32.93	Std. Error of Mean	10.98
Coefficient of Variation	1.378	Skewness	2.331
Mean of logged Data	2.391	SD of logged Data	1.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.32	95% Adjusted-CLT UCL (Chen-1995)	51.08
		95% Modified-t UCL (Johnson-1978)	45.74

Nonparametric Distribution Free UCLs

95% CLT UCL	41.96	95% Jackknife UCL	44.32
95% Standard Bootstrap UCL	40.88	95% Bootstrap-t UCL	72.46
95% Hall's Bootstrap UCL	111.9	95% Percentile Bootstrap UCL	43.26
95% BCA Bootstrap UCL	50.3		
90% Chebyshev(Mean, Sd) UCL	56.84	95% Chebyshev(Mean, Sd) UCL	71.76
97.5% Chebyshev(Mean, Sd) UCL	92.46	99% Chebyshev(Mean, Sd) UCL	133.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	35.8
Maximum	164	Median	19.9
SD	51.11	Std. Error of Mean	17.04
Coefficient of Variation	1.428	Skewness	2.394
Mean of logged Data	2.781	SD of logged Data	1.374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	67.48	95% Adjusted-CLT UCL (Chen-1995)	78.35
		95% Modified-t UCL (Johnson-1978)	69.74

Nonparametric Distribution Free UCLs

95% CLT UCL	63.82	95% Jackknife UCL	67.48
95% Standard Bootstrap UCL	61.97	95% Bootstrap-t UCL	121.2
95% Hall's Bootstrap UCL	172.8	95% Percentile Bootstrap UCL	64.33
95% BCA Bootstrap UCL	77.06		
90% Chebyshev(Mean, Sd) UCL	86.9	95% Chebyshev(Mean, Sd) UCL	110.1
97.5% Chebyshev(Mean, Sd) UCL	142.2	99% Chebyshev(Mean, Sd) UCL	205.3

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.61	Mean	21.49
Maximum	82.3	Median	13.5
SD	26.13	Std. Error of Mean	8.711
Coefficient of Variation	1.216	Skewness	1.856
Mean of logged Data	2.399	SD of logged Data	1.265

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.69	95% Adjusted-CLT UCL (Chen-1995)	41.58
		95% Modified-t UCL (Johnson-1978)	38.59

Nonparametric Distribution Free UCLs

95% CLT UCL	35.82	95% Jackknife UCL	37.69

95% Standard Bootstrap UCL	35.01	95% Bootstrap-t UCL	54.63
95% Hall's Bootstrap UCL	91.77	95% Percentile Bootstrap UCL	35.59
95% BCA Bootstrap UCL	39.33		
90% Chebyshev(Mean, Sd) UCL	47.62	95% Chebyshev(Mean, Sd) UCL	59.46
97.5% Chebyshev(Mean, Sd) UCL	75.89	99% Chebyshev(Mean, Sd) UCL	108.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	13.6
Maximum	62.2	Median	6.64
SD	19.2	Std. Error of Mean	6.401
Coefficient of Variation	1.412	Skewness	2.47
Mean of logged Data	1.931	SD of logged Data	1.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.5	95% Adjusted-CLT UCL (Chen-1995)	29.76
		95% Modified-t UCL (Johnson-1978)	26.38

Nonparametric Distribution Free UCLs

95% CLT UCL	24.13	95% Jackknife UCL	25.5
95% Standard Bootstrap UCL	23.77	95% Bootstrap-t UCL	45.49
95% Hall's Bootstrap UCL	61.33	95% Percentile Bootstrap UCL	25.03
95% BCA Bootstrap UCL	31.2		
90% Chebyshev(Mean, Sd) UCL	32.8	95% Chebyshev(Mean, Sd) UCL	41.5
97.5% Chebyshev(Mean, Sd) UCL	53.58	99% Chebyshev(Mean, Sd) UCL	77.29

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	27.91
Maximum	123	Median	17.1
SD	38.33	Std. Error of Mean	12.78
Coefficient of Variation	1.373	Skewness	2.291
Mean of logged Data	2.513	SD of logged Data	1.438

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.67	95% Adjusted-CLT UCL (Chen-1995)	59.35
		95% Modified-t UCL (Johnson-1978)	53.3

Nonparametric Distribution Free UCLs

95% CLT UCL	48.93	95% Jackknife UCL	51.67
95% Standard Bootstrap UCL	47.23	95% Bootstrap-t UCL	83.95
95% Hall's Bootstrap UCL	130.5	95% Percentile Bootstrap UCL	50.11
95% BCA Bootstrap UCL	61.03		
90% Chebyshev(Mean, Sd) UCL	66.24	95% Chebyshev(Mean, Sd) UCL	83.6
97.5% Chebyshev(Mean, Sd) UCL	107.7	99% Chebyshev(Mean, Sd) UCL	155

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.83	Mean	6.456
Maximum	22.4	Median	3.25
SD	6.303	Std. Error of Mean	2.101
Coefficient of Variation	0.976	Skewness	2.478
Mean of logged Data	1.599	SD of logged Data	0.692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.36	95% Adjusted-CLT UCL (Chen-1995)	11.77
		95% Modified-t UCL (Johnson-1978)	10.65

Nonparametric Distribution Free UCLs

95% CLT UCL	9.911	95% Jackknife UCL	10.36
95% Standard Bootstrap UCL	9.737	95% Bootstrap-t UCL	17.08
95% Hall's Bootstrap UCL	20.79	95% Percentile Bootstrap UCL	10.04
95% BCA Bootstrap UCL	12.33		
90% Chebyshev(Mean, Sd) UCL	12.76	95% Chebyshev(Mean, Sd) UCL	15.61
97.5% Chebyshev(Mean, Sd) UCL	19.58	99% Chebyshev(Mean, Sd) UCL	27.36

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	15.61

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.985	Mean	19.78
Maximum	80.8	Median	13.8
SD	24.94	Std. Error of Mean	8.313
Coefficient of Variation	1.261	Skewness	2.167
Mean of logged Data	2.284	SD of logged Data	1.328

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.23	95% Adjusted-CLT UCL (Chen-1995)	39.87
		95% Modified-t UCL (Johnson-1978)	36.23

Nonparametric Distribution Free UCLs

95% CLT UCL	33.45	95% Jackknife UCL	35.23
95% Standard Bootstrap UCL	32.54	95% Bootstrap-t UCL	51.93
95% Hall's Bootstrap UCL	86.21	95% Percentile Bootstrap UCL	34.11
95% BCA Bootstrap UCL	41.04		
90% Chebyshev(Mean, Sd) UCL	44.71	95% Chebyshev(Mean, Sd) UCL	56.01
97.5% Chebyshev(Mean, Sd) UCL	71.69	99% Chebyshev(Mean, Sd) UCL	102.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.01	Mean	1.237
Maximum	1.3	Median	1.285
SD	0.0916	Std. Error of Mean	0.0305
Coefficient of Variation	0.0741	Skewness	-2.266
Mean of logged Data	0.21	SD of logged Data	0.0797

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.293	95% Adjusted-CLT UCL (Chen-1995)	1.262
		95% Modified-t UCL (Johnson-1978)	1.29

Nonparametric Distribution Free UCLs

95% CLT UCL	1.287	95% Jackknife UCL	1.293
95% Standard Bootstrap UCL	1.286	95% Bootstrap-t UCL	1.277
95% Hall's Bootstrap UCL	1.269	95% Percentile Bootstrap UCL	1.277
95% BCA Bootstrap UCL	1.269		
90% Chebyshev(Mean, Sd) UCL	1.328	95% Chebyshev(Mean, Sd) UCL	1.37
97.5% Chebyshev(Mean, Sd) UCL	1.427	99% Chebyshev(Mean, Sd) UCL	1.54

Suggested UCL to Use

95% Student's-t UCL	1.293	or 95% Modified-t UCL	1.29

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.59	Mean	19.78
Maximum	86.4	Median	11.2
SD	26.76	Std. Error of Mean	8.919
Coefficient of Variation	1.353	Skewness	2.336
Mean of logged Data	2.317	SD of logged Data	1.21

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.36	95% Adjusted-CLT UCL (Chen-1995)	41.87
		95% Modified-t UCL (Johnson-1978)	37.52

Nonparametric Distribution Free UCLs

95% CLT UCL	34.45	95% Jackknife UCL	36.36
95% Standard Bootstrap UCL	33.23	95% Bootstrap-t UCL	64.18
95% Hall's Bootstrap UCL	90.9	95% Percentile Bootstrap UCL	35.25
95% BCA Bootstrap UCL	42.78		
90% Chebyshev(Mean, Sd) UCL	46.54	95% Chebyshev(Mean, Sd) UCL	58.66
97.5% Chebyshev(Mean, Sd) UCL	75.48	99% Chebyshev(Mean, Sd) UCL	108.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.899	Mean	1.771
Maximum	2.66	Median	1.8
SD	0.712	Std. Error of Mean	0.237
Coefficient of Variation	0.402	Skewness	0.027
Mean of logged Data	0.492	SD of logged Data	0.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.213	95% Adjusted-CLT UCL (Chen-1995)	2.164
		95% Modified-t UCL (Johnson-1978)	2.213

Nonparametric Distribution Free UCLs

95% CLT UCL	2.162	95% Jackknife UCL	2.213
95% Standard Bootstrap UCL	2.134	95% Bootstrap-t UCL	2.225
95% Hall's Bootstrap UCL	2.079	95% Percentile Bootstrap UCL	2.14
95% BCA Bootstrap UCL	2.136		
90% Chebyshev(Mean, Sd) UCL	2.483	95% Chebyshev(Mean, Sd) UCL	2.806
97.5% Chebyshev(Mean, Sd) UCL	3.254	99% Chebyshev(Mean, Sd) UCL	4.133

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.055	Mean	6.397
Maximum	17	Median	5.16
SD	4.551	Std. Error of Mean	1.517
Coefficient of Variation	0.712	Skewness	1.823
Mean of logged Data	1.677	SD of logged Data	0.605

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.218	95% Adjusted-CLT UCL (Chen-1995)	9.877
		95% Modified-t UCL (Johnson-1978)	9.371

Nonparametric Distribution Free UCLs

95% CLT UCL	8.892	95% Jackknife UCL	9.218
95% Standard Bootstrap UCL	8.688	95% Bootstrap-t UCL	11.56
95% Hall's Bootstrap UCL	18.06	95% Percentile Bootstrap UCL	9.124
95% BCA Bootstrap UCL	9.603		
90% Chebyshev(Mean, Sd) UCL	10.95	95% Chebyshev(Mean, Sd) UCL	13.01
97.5% Chebyshev(Mean, Sd) UCL	15.87	99% Chebyshev(Mean, Sd) UCL	21.49

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.29	Mean	19.51
Maximum	76.3	Median	15
SD	23.31	Std. Error of Mean	7.771
Coefficient of Variation	1.195	Skewness	2.125
Mean of logged Data	2.373	SD of logged Data	1.2

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.96	95% Adjusted-CLT UCL (Chen-1995)	38.18
		95% Modified-t UCL (Johnson-1978)	34.88

Nonparametric Distribution Free UCLs

95% CLT UCL	32.3	95% Jackknife UCL	33.96
95% Standard Bootstrap UCL	31.72	95% Bootstrap-t UCL	47.39
95% Hall's Bootstrap UCL	81.84	95% Percentile Bootstrap UCL	32.32
95% BCA Bootstrap UCL	36.58		
90% Chebyshev(Mean, Sd) UCL	42.83	95% Chebyshev(Mean, Sd) UCL	53.39
97.5% Chebyshev(Mean, Sd) UCL	68.04	99% Chebyshev(Mean, Sd) UCL	96.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.685	Mean	0.762
Maximum	1.08	Median	0.74

SD	0.122	Std. Error of Mean	0.0406
Coefficient of Variation	0.16	Skewness	2.774
Mean of logged Data	-0.282	SD of logged Data	0.139

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.837	95% Adjusted-CLT UCL (Chen-1995)	0.869
		95% Modified-t UCL (Johnson-1978)	0.843

Nonparametric Distribution Free UCLs

95% CLT UCL	0.828	95% Jackknife UCL	0.837
95% Standard Bootstrap UCL	0.824	95% Bootstrap-t UCL	1.014
95% Hall's Bootstrap UCL	1.118	95% Percentile Bootstrap UCL	0.836
95% BCA Bootstrap UCL	0.882		
90% Chebyshev(Mean, Sd) UCL	0.883	95% Chebyshev(Mean, Sd) UCL	0.939
97.5% Chebyshev(Mean, Sd) UCL	1.015	99% Chebyshev(Mean, Sd) UCL	1.166

Suggested UCL to Use

95% Student's-t UCL	0.837	or 95% Modified-t UCL	0.843

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	11.8	Mean	13.63
Maximum	17	Median	12.8
SD	1.911	Std. Error of Mean	0.637
Coefficient of Variation	0.14	Skewness	0.924
Mean of logged Data	2.604	SD of logged Data	0.135

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.82	95% Adjusted-CLT UCL (Chen-1995)	14.89
		95% Modified-t UCL (Johnson-1978)	14.85

Nonparametric Distribution Free UCLs

95% CLT UCL	14.68	95% Jackknife UCL	14.82
95% Standard Bootstrap UCL	14.63	95% Bootstrap-t UCL	15.56
95% Hall's Bootstrap UCL	14.93	95% Percentile Bootstrap UCL	14.62
95% BCA Bootstrap UCL	14.7		
90% Chebyshev(Mean, Sd) UCL	15.54	95% Chebyshev(Mean, Sd) UCL	16.41
97.5% Chebyshev(Mean, Sd) UCL	17.61	99% Chebyshev(Mean, Sd) UCL	19.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.54	Mean	59.06
Maximum	291	Median	27.5
SD	89.01	Std. Error of Mean	29.67
Coefficient of Variation	1.507	Skewness	2.754
Mean of logged Data	3.483	SD of logged Data	1.035

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	114.2	95% Adjusted-CLT UCL (Chen-1995)	137
		95% Modified-t UCL (Johnson-1978)	118.8

Nonparametric Distribution Free UCLs

95% CLT UCL	107.9	95% Jackknife UCL	114.2
95% Standard Bootstrap UCL	104.9	95% Bootstrap-t UCL	334.5
95% Hall's Bootstrap UCL	324.5	95% Percentile Bootstrap UCL	115.1
95% BCA Bootstrap UCL	147.7		
90% Chebyshev(Mean, Sd) UCL	148.1	95% Chebyshev(Mean, Sd) UCL	188.4
97.5% Chebyshev(Mean, Sd) UCL	244.4	99% Chebyshev(Mean, Sd) UCL	354.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42.6	Mean	70.33
Maximum	113	Median	66.4
SD	24.94	Std. Error of Mean	8.314
Coefficient of Variation	0.355	Skewness	0.457
Mean of logged Data	4.197	SD of logged Data	0.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	85.79	95% Adjusted-CLT UCL (Chen-1995)	85.36
		95% Modified-t UCL (Johnson-1978)	86.01

Nonparametric Distribution Free UCLs

95% CLT UCL	84.01	95% Jackknife UCL	85.79
95% Standard Bootstrap UCL	83.17	95% Bootstrap-t UCL	87.31
95% Hall's Bootstrap UCL	84.34	95% Percentile Bootstrap UCL	83.26
95% BCA Bootstrap UCL	83.63		
90% Chebyshev(Mean, Sd) UCL	95.28	95% Chebyshev(Mean, Sd) UCL	106.6
97.5% Chebyshev(Mean, Sd) UCL	122.3	99% Chebyshev(Mean, Sd) UCL	153.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:34:39 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404638) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.839	Mean	3.676
Maximum	8.68	Median	1.26
SD	3.517	Std. Error of Mean	1.172
Coefficient of Variation	0.957	Skewness	0.783
Mean of logged Data	0.853	SD of logged Data	1.008

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.856	95% Adjusted-CLT UCL (Chen-1995)	5.931
		95% Modified-t UCL (Johnson-1978)	5.907

Nonparametric Distribution Free UCLs

95% CLT UCL	5.604	95% Jackknife UCL	5.856
95% Standard Bootstrap UCL	5.504	95% Bootstrap-t UCL	6.323
95% Hall's Bootstrap UCL	4.984	95% Percentile Bootstrap UCL	5.723
95% BCA Bootstrap UCL	5.804		
90% Chebyshev(Mean, Sd) UCL	7.193	95% Chebyshev(Mean, Sd) UCL	8.786
97.5% Chebyshev(Mean, Sd) UCL	11	99% Chebyshev(Mean, Sd) UCL	15.34

Suggested UCL to Use

95% Hall's Bootstrap UCL	4.984

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.494	Mean	2.323
Maximum	8.03	Median	0.755
SD	2.686	Std. Error of Mean	0.895
Coefficient of Variation	1.156	Skewness	1.536
Mean of logged Data	0.272	SD of logged Data	1.115

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.988	95% Adjusted-CLT UCL (Chen-1995)	4.286
		95% Modified-t UCL (Johnson-1978)	4.064

Nonparametric Distribution Free UCLs

95% CLT UCL	3.796	95% Jackknife UCL	3.988
95% Standard Bootstrap UCL	3.704	95% Bootstrap-t UCL	6.619
95% Hall's Bootstrap UCL	10.15	95% Percentile Bootstrap UCL	3.905
95% BCA Bootstrap UCL	4.247		
90% Chebyshev(Mean, Sd) UCL	5.009	95% Chebyshev(Mean, Sd) UCL	6.226
97.5% Chebyshev(Mean, Sd) UCL	7.915	99% Chebyshev(Mean, Sd) UCL	11.23

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	7.877
Maximum	24.8	Median	2.08
SD	8.615	Std. Error of Mean	2.872
Coefficient of Variation	1.094	Skewness	1.249
Mean of logged Data	1.533	SD of logged Data	1.069

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.22	95% Adjusted-CLT UCL (Chen-1995)	13.88
		95% Modified-t UCL (Johnson-1978)	13.42

Nonparametric Distribution Free UCLs

95% CLT UCL	12.6	95% Jackknife UCL	13.22
95% Standard Bootstrap UCL	12.3	95% Bootstrap-t UCL	17.86
95% Hall's Bootstrap UCL	12.06	95% Percentile Bootstrap UCL	12.3
95% BCA Bootstrap UCL	13.36		
90% Chebyshev(Mean, Sd) UCL	16.49	95% Chebyshev(Mean, Sd) UCL	20.39
97.5% Chebyshev(Mean, Sd) UCL	25.81	99% Chebyshev(Mean, Sd) UCL	36.45

Suggested UCL to Use

95% Hall's Bootstrap UCL	12.06

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	33.78
Maximum	108	Median	18.3
SD	37.46	Std. Error of Mean	12.49
Coefficient of Variation	1.109	Skewness	1.112
Mean of logged Data	2.66	SD of logged Data	1.61

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57	95% Adjusted-CLT UCL (Chen-1995)	59.27
		95% Modified-t UCL (Johnson-1978)	57.77

Nonparametric Distribution Free UCLs

95% CLT UCL	54.32	95% Jackknife UCL	57
95% Standard Bootstrap UCL	53.29	95% Bootstrap-t UCL	67.53
95% Hall's Bootstrap UCL	57.37	95% Percentile Bootstrap UCL	53.83
95% BCA Bootstrap UCL	58.58		
90% Chebyshev(Mean, Sd) UCL	71.24	95% Chebyshev(Mean, Sd) UCL	88.21
97.5% Chebyshev(Mean, Sd) UCL	111.8	99% Chebyshev(Mean, Sd) UCL	158

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	43.01
Maximum	133	Median	23.1
SD	47.58	Std. Error of Mean	15.86
Coefficient of Variation	1.106	Skewness	0.991
Mean of logged Data	2.827	SD of logged Data	1.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	72.5	95% Adjusted-CLT UCL (Chen-1995)	74.7
		95% Modified-t UCL (Johnson-1978)	73.38

Nonparametric Distribution Free UCLs

95% CLT UCL	69.1	95% Jackknife UCL	72.5
95% Standard Bootstrap UCL	67.39	95% Bootstrap-t UCL	85.13
95% Hall's Bootstrap UCL	67.57	95% Percentile Bootstrap UCL	68.67
95% BCA Bootstrap UCL	71.41		
90% Chebyshev(Mean, Sd) UCL	90.59	95% Chebyshev(Mean, Sd) UCL	112.1
97.5% Chebyshev(Mean, Sd) UCL	142.1	99% Chebyshev(Mean, Sd) UCL	200.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	64.3

Maximum	195	Median	28.5
SD	72.74	Std. Error of Mean	24.25
Coefficient of Variation	1.131	Skewness	0.945
Mean of logged Data	3.214	SD of logged Data	1.71

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	109.4	95% Adjusted-CLT UCL (Chen-1995)	112.3
		95% Modified-t UCL (Johnson-1978)	110.7

Nonparametric Distribution Free UCLs

95% CLT UCL	104.2	95% Jackknife UCL	109.4
95% Standard Bootstrap UCL	102.3	95% Bootstrap-t UCL	125.5
95% Hall's Bootstrap UCL	99.57	95% Percentile Bootstrap UCL	104.1
95% BCA Bootstrap UCL	105.3		
90% Chebyshev(Mean, Sd) UCL	137	95% Chebyshev(Mean, Sd) UCL	170
97.5% Chebyshev(Mean, Sd) UCL	215.7	99% Chebyshev(Mean, Sd) UCL	305.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	35.22
Maximum	105	Median	16.5
SD	38.34	Std. Error of Mean	12.78
Coefficient of Variation	1.088	Skewness	0.955
Mean of logged Data	2.816	SD of logged Data	1.431

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.98	95% Adjusted-CLT UCL (Chen-1995)	60.58

		95% Modified-t UCL (Johnson-1978)	59.66

Nonparametric Distribution Free UCLs

95% CLT UCL	56.24	95% Jackknife UCL	58.98
95% Standard Bootstrap UCL	54.71	95% Bootstrap-t UCL	67.35
95% Hall's Bootstrap UCL	52.08	95% Percentile Bootstrap UCL	56.15
95% BCA Bootstrap UCL	59.06		
90% Chebyshev(Mean, Sd) UCL	73.56	95% Chebyshev(Mean, Sd) UCL	90.92
97.5% Chebyshev(Mean, Sd) UCL	115	99% Chebyshev(Mean, Sd) UCL	162.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	25.31
Maximum	78.2	Median	11.9
SD	27.91	Std. Error of Mean	9.303
Coefficient of Variation	1.103	Skewness	1.023
Mean of logged Data	2.449	SD of logged Data	1.48

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.61	95% Adjusted-CLT UCL (Chen-1995)	44
		95% Modified-t UCL (Johnson-1978)	43.13

Nonparametric Distribution Free UCLs

95% CLT UCL	40.61	95% Jackknife UCL	42.61
95% Standard Bootstrap UCL	39.5	95% Bootstrap-t UCL	48.86
95% Hall's Bootstrap UCL	39.24	95% Percentile Bootstrap UCL	40.52
95% BCA Bootstrap UCL	43.14		
90% Chebyshev(Mean, Sd) UCL	53.21	95% Chebyshev(Mean, Sd) UCL	65.86
97.5% Chebyshev(Mean, Sd) UCL	83.4	99% Chebyshev(Mean, Sd) UCL	117.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	55.5
Maximum	157	Median	29
SD	62.09	Std. Error of Mean	20.7
Coefficient of Variation	1.119	Skewness	0.836
Mean of logged Data	2.978	SD of logged Data	1.846

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	93.98	95% Adjusted-CLT UCL (Chen-1995)	95.7
		95% Modified-t UCL (Johnson-1978)	94.95

Nonparametric Distribution Free UCLs

95% CLT UCL	89.54	95% Jackknife UCL	93.98
95% Standard Bootstrap UCL	86.86	95% Bootstrap-t UCL	106.7
95% Hall's Bootstrap UCL	86.89	95% Percentile Bootstrap UCL	88.41
95% BCA Bootstrap UCL	91.19		
90% Chebyshev(Mean, Sd) UCL	117.6	95% Chebyshev(Mean, Sd) UCL	145.7
97.5% Chebyshev(Mean, Sd) UCL	184.7	99% Chebyshev(Mean, Sd) UCL	261.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.98	Mean	9.461
Maximum	26.5	Median	4.45
SD	8.745	Std. Error of Mean	2.915
Coefficient of Variation	0.924	Skewness	1.159
Mean of logged Data	1.883	SD of logged Data	0.886

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.88	95% Adjusted-CLT UCL (Chen-1995)	15.46
		95% Modified-t UCL (Johnson-1978)	15.07

Nonparametric Distribution Free UCLs

95% CLT UCL	14.26	95% Jackknife UCL	14.88
95% Standard Bootstrap UCL	13.96	95% Bootstrap-t UCL	17.48
95% Hall's Bootstrap UCL	13.61	95% Percentile Bootstrap UCL	14.44
95% BCA Bootstrap UCL	14.96		
90% Chebyshev(Mean, Sd) UCL	18.21	95% Chebyshev(Mean, Sd) UCL	22.17
97.5% Chebyshev(Mean, Sd) UCL	27.66	99% Chebyshev(Mean, Sd) UCL	38.46

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.005	Mean	78.88
Maximum	252	Median	31.4
SD	97.51	Std. Error of Mean	32.5
Coefficient of Variation	1.236	Skewness	1.063
Mean of logged Data	3.134	SD of logged Data	2.012

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	139.3	95% Adjusted-CLT UCL (Chen-1995)	144.6
		95% Modified-t UCL (Johnson-1978)	141.2

Nonparametric Distribution Free UCLs

95% CLT UCL	132.3	95% Jackknife UCL	139.3
95% Standard Bootstrap UCL	128.9	95% Bootstrap-t UCL	165.3

95% Hall's Bootstrap UCL	137.3	95% Percentile Bootstrap UCL	132.6
95% BCA Bootstrap UCL	141.1		
90% Chebyshev(Mean, Sd) UCL	176.4	95% Chebyshev(Mean, Sd) UCL	220.6
97.5% Chebyshev(Mean, Sd) UCL	281.9	99% Chebyshev(Mean, Sd) UCL	402.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.205	Mean	2.514
Maximum	7.86	Median	1.265
SD	2.27	Std. Error of Mean	0.757
Coefficient of Variation	0.903	Skewness	2.043
Mean of logged Data	0.669	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.921	95% Adjusted-CLT UCL (Chen-1995)	4.309
		95% Modified-t UCL (Johnson-1978)	4.007

Nonparametric Distribution Free UCLs

95% CLT UCL	3.758	95% Jackknife UCL	3.921
95% Standard Bootstrap UCL	3.697	95% Bootstrap-t UCL	8.18
95% Hall's Bootstrap UCL	9.11	95% Percentile Bootstrap UCL	3.813
95% BCA Bootstrap UCL	4.299		
90% Chebyshev(Mean, Sd) UCL	4.784	95% Chebyshev(Mean, Sd) UCL	5.812
97.5% Chebyshev(Mean, Sd) UCL	7.239	99% Chebyshev(Mean, Sd) UCL	10.04

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.812

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	36.01
Maximum	109	Median	16.6
SD	39.05	Std. Error of Mean	13.02
Coefficient of Variation	1.084	Skewness	0.996
Mean of logged Data	2.839	SD of logged Data	1.439

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.21	95% Adjusted-CLT UCL (Chen-1995)	62.03
		95% Modified-t UCL (Johnson-1978)	60.93

Nonparametric Distribution Free UCLs

95% CLT UCL	57.42	95% Jackknife UCL	60.21
95% Standard Bootstrap UCL	56.31	95% Bootstrap-t UCL	71.73
95% Hall's Bootstrap UCL	55.21	95% Percentile Bootstrap UCL	58.73
95% BCA Bootstrap UCL	59.01		
90% Chebyshev(Mean, Sd) UCL	75.06	95% Chebyshev(Mean, Sd) UCL	92.74
97.5% Chebyshev(Mean, Sd) UCL	117.3	99% Chebyshev(Mean, Sd) UCL	165.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.76	Mean	10.73
Maximum	30.8	Median	3.06
SD	12.3	Std. Error of Mean	4.099
Coefficient of Variation	1.146	Skewness	0.977
Mean of logged Data	1.72	SD of logged Data	1.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.36	95% Adjusted-CLT UCL (Chen-1995)	18.9
		95% Modified-t UCL (Johnson-1978)	18.58

Nonparametric Distribution Free UCLs

95% CLT UCL	17.48	95% Jackknife UCL	18.36
95% Standard Bootstrap UCL	17.08	95% Bootstrap-t UCL	22.08
95% Hall's Bootstrap UCL	15.29	95% Percentile Bootstrap UCL	17.44
95% BCA Bootstrap UCL	18.53		
90% Chebyshev(Mean, Sd) UCL	23.03	95% Chebyshev(Mean, Sd) UCL	28.6
97.5% Chebyshev(Mean, Sd) UCL	36.33	99% Chebyshev(Mean, Sd) UCL	51.52

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	43.62
Maximum	153	Median	13.5
SD	56.31	Std. Error of Mean	18.77
Coefficient of Variation	1.291	Skewness	1.269
Mean of logged Data	2.797	SD of logged Data	1.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	78.52	95% Adjusted-CLT UCL (Chen-1995)	82.97
		95% Modified-t UCL (Johnson-1978)	79.84

Nonparametric Distribution Free UCLs

95% CLT UCL	74.49	95% Jackknife UCL	78.52
95% Standard Bootstrap UCL	73.79	95% Bootstrap-t UCL	112.8
95% Hall's Bootstrap UCL	79.36	95% Percentile Bootstrap UCL	72.65
95% BCA Bootstrap UCL	80		
90% Chebyshev(Mean, Sd) UCL	99.93	95% Chebyshev(Mean, Sd) UCL	125.4
97.5% Chebyshev(Mean, Sd) UCL	160.8	99% Chebyshev(Mean, Sd) UCL	230.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.085	Mean	78.08
Maximum	236	Median	34.9
SD	93.12	Std. Error of Mean	31.04
Coefficient of Variation	1.193	Skewness	0.985
Mean of logged Data	3.289	SD of logged Data	1.812

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	135.8	95% Adjusted-CLT UCL (Chen-1995)	140
		95% Modified-t UCL (Johnson-1978)	137.5

Nonparametric Distribution Free UCLs

95% CLT UCL	129.1	95% Jackknife UCL	135.8
95% Standard Bootstrap UCL	125.1	95% Bootstrap-t UCL	172.3
95% Hall's Bootstrap UCL	130.3	95% Percentile Bootstrap UCL	131
95% BCA Bootstrap UCL	136.6		
90% Chebyshev(Mean, Sd) UCL	171.2	95% Chebyshev(Mean, Sd) UCL	213.4
97.5% Chebyshev(Mean, Sd) UCL	271.9	99% Chebyshev(Mean, Sd) UCL	386.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	13.2	Mean	20.98

Maximum	60.6	Median	14.1
SD	15.34	Std. Error of Mean	5.114
Coefficient of Variation	0.731	Skewness	2.674
Mean of logged Data	2.9	SD of logged Data	0.498

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.49	95% Adjusted-CLT UCL (Chen-1995)	34.26
		95% Modified-t UCL (Johnson-1978)	31.25

Nonparametric Distribution Free UCLs

95% CLT UCL	29.39	95% Jackknife UCL	30.49
95% Standard Bootstrap UCL	28.88	95% Bootstrap-t UCL	66.59
95% Hall's Bootstrap UCL	66.12	95% Percentile Bootstrap UCL	30.2
95% BCA Bootstrap UCL	35.21		
90% Chebyshev(Mean, Sd) UCL	36.32	95% Chebyshev(Mean, Sd) UCL	43.27
97.5% Chebyshev(Mean, Sd) UCL	52.92	99% Chebyshev(Mean, Sd) UCL	71.87

Suggested UCL to Use

95% Student's-t UCL	30.49	or 95% Modified-t UCL	31.25

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.63	Mean	22.9
Maximum	42.6	Median	17.9
SD	13.14	Std. Error of Mean	4.38
Coefficient of Variation	0.574	Skewness	0.409
Mean of logged Data	2.97	SD of logged Data	0.614

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	31.04	95% Adjusted-CLT UCL (Chen-1995)	30.74

		95% Modified-t UCL (Johnson-1978)	31.14

Nonparametric Distribution Free UCLs

95% CLT UCL	30.1	95% Jackknife UCL	31.04
95% Standard Bootstrap UCL	29.78	95% Bootstrap-t UCL	32.21
95% Hall's Bootstrap UCL	29.12	95% Percentile Bootstrap UCL	29.87
95% BCA Bootstrap UCL	29.98		
90% Chebyshev(Mean, Sd) UCL	36.04	95% Chebyshev(Mean, Sd) UCL	41.99
97.5% Chebyshev(Mean, Sd) UCL	50.25	99% Chebyshev(Mean, Sd) UCL	66.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45.3	Mean	80.87
Maximum	150	Median	50.3
SD	49.65	Std. Error of Mean	16.55
Coefficient of Variation	0.614	Skewness	0.855
Mean of logged Data	4.241	SD of logged Data	0.563

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	111.6	95% Adjusted-CLT UCL (Chen-1995)	113.1
		95% Modified-t UCL (Johnson-1978)	112.4

Nonparametric Distribution Free UCLs

95% CLT UCL	108.1	95% Jackknife UCL	111.6
95% Standard Bootstrap UCL	106	95% Bootstrap-t UCL	115.1
95% Hall's Bootstrap UCL	96.39	95% Percentile Bootstrap UCL	104.5
95% BCA Bootstrap UCL	113.4		
90% Chebyshev(Mean, Sd) UCL	130.5	95% Chebyshev(Mean, Sd) UCL	153
97.5% Chebyshev(Mean, Sd) UCL	184.2	99% Chebyshev(Mean, Sd) UCL	245.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	153

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:36:25 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404639)mz - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.782	Mean	1.708
Maximum	6.5	Median	0.965
SD	2.117	Std. Error of Mean	0.8
Coefficient of Variation	1.239	Skewness	2.624
Mean of logged Data	0.177	SD of logged Data	0.761

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.263	95% Adjusted-CLT UCL (Chen-1995)	3.872
		95% Modified-t UCL (Johnson-1978)	3.396

Nonparametric Distribution Free UCLs

95% CLT UCL	3.025	95% Jackknife UCL	3.263
95% Standard Bootstrap UCL	2.955	95% Bootstrap-t UCL	20.55
95% Hall's Bootstrap UCL	13.26	95% Percentile Bootstrap UCL	3.269
95% BCA Bootstrap UCL	4.103		
90% Chebyshev(Mean, Sd) UCL	4.109	95% Chebyshev(Mean, Sd) UCL	5.196
97.5% Chebyshev(Mean, Sd) UCL	6.706	99% Chebyshev(Mean, Sd) UCL	9.671

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.196

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0

Minimum	0.505	Mean	2.719
Maximum	14	Median	1.12
SD	4.985	Std. Error of Mean	1.884
Coefficient of Variation	1.834	Skewness	2.622
Mean of logged Data	0.156	SD of logged Data	1.169

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.38	95% Adjusted-CLT UCL (Chen-1995)	7.813
		95% Modified-t UCL (Johnson-1978)	6.691

Nonparametric Distribution Free UCLs

95% CLT UCL	5.818	95% Jackknife UCL	6.38
95% Standard Bootstrap UCL	5.618	95% Bootstrap-t UCL	36.57
95% Hall's Bootstrap UCL	31.86	95% Percentile Bootstrap UCL	6.397
95% BCA Bootstrap UCL	6.676		
90% Chebyshev(Mean, Sd) UCL	8.371	95% Chebyshev(Mean, Sd) UCL	10.93
97.5% Chebyshev(Mean, Sd) UCL	14.49	99% Chebyshev(Mean, Sd) UCL	21.47

Suggested UCL to Use

95% Hall's Bootstrap UCL	31.86

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	10.11
Maximum	47	Median	3.54
SD	16.42	Std. Error of Mean	6.204
Coefficient of Variation	1.624	Skewness	2.548
Mean of logged Data	1.601	SD of logged Data	1.13

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.17	95% Adjusted-CLT UCL (Chen-1995)	26.7
		95% Modified-t UCL (Johnson-1978)	23.16

Nonparametric Distribution Free UCLs

95% CLT UCL	20.32	95% Jackknife UCL	22.17
95% Standard Bootstrap UCL	19.98	95% Bootstrap-t UCL	73.96
95% Hall's Bootstrap UCL	68.63	95% Percentile Bootstrap UCL	22.03
95% BCA Bootstrap UCL	23.48		
90% Chebyshev(Mean, Sd) UCL	28.72	95% Chebyshev(Mean, Sd) UCL	37.15
97.5% Chebyshev(Mean, Sd) UCL	48.86	99% Chebyshev(Mean, Sd) UCL	71.84

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	78.36
Maximum	420	Median	36.1
SD	151.8	Std. Error of Mean	57.38
Coefficient of Variation	1.937	Skewness	2.562
Mean of logged Data	2.864	SD of logged Data	1.963

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	189.8	95% Adjusted-CLT UCL (Chen-1995)	232.1
		95% Modified-t UCL (Johnson-1978)	199.1

Nonparametric Distribution Free UCLs

95% CLT UCL	172.7	95% Jackknife UCL	189.8
95% Standard Bootstrap UCL	163.8	95% Bootstrap-t UCL	634.6
95% Hall's Bootstrap UCL	723.7	95% Percentile Bootstrap UCL	187.5
95% BCA Bootstrap UCL	198.2		
90% Chebyshev(Mean, Sd) UCL	250.5	95% Chebyshev(Mean, Sd) UCL	328.5
97.5% Chebyshev(Mean, Sd) UCL	436.7	99% Chebyshev(Mean, Sd) UCL	649.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.8	Mean	65.08
Maximum	290	Median	48.8
SD	102.1	Std. Error of Mean	38.59
Coefficient of Variation	1.569	Skewness	2.339
Mean of logged Data	2.957	SD of logged Data	1.918

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	140.1	95% Adjusted-CLT UCL (Chen-1995)	165
		95% Modified-t UCL (Johnson-1978)	145.8

Nonparametric Distribution Free UCLs

95% CLT UCL	128.6	95% Jackknife UCL	140.1
95% Standard Bootstrap UCL	123.5	95% Bootstrap-t UCL	270.9
95% Hall's Bootstrap UCL	395.3	95% Percentile Bootstrap UCL	134.3
95% BCA Bootstrap UCL	174.8		
90% Chebyshev(Mean, Sd) UCL	180.8	95% Chebyshev(Mean, Sd) UCL	233.3
97.5% Chebyshev(Mean, Sd) UCL	306.1	99% Chebyshev(Mean, Sd) UCL	449

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.14	Mean	111.3

Maximum	560	Median	65.1
SD	200.4	Std. Error of Mean	75.74
Coefficient of Variation	1.801	Skewness	2.508
Mean of logged Data	3.349	SD of logged Data	1.924

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	258.5	95% Adjusted-CLT UCL (Chen-1995)	312.6
		95% Modified-t UCL (Johnson-1978)	270.4

Nonparametric Distribution Free UCLs

95% CLT UCL	235.9	95% Jackknife UCL	258.5
95% Standard Bootstrap UCL	227.2	95% Bootstrap-t UCL	682.5
95% Hall's Bootstrap UCL	868.6	95% Percentile Bootstrap UCL	253.2
95% BCA Bootstrap UCL	322.1		
90% Chebyshev(Mean, Sd) UCL	338.5	95% Chebyshev(Mean, Sd) UCL	441.4
97.5% Chebyshev(Mean, Sd) UCL	584.3	99% Chebyshev(Mean, Sd) UCL	864.9

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.14	Mean	60.2
Maximum	300	Median	35.1
SD	107	Std. Error of Mean	40.46
Coefficient of Variation	1.778	Skewness	2.513
Mean of logged Data	2.91	SD of logged Data	1.697

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	138.8	95% Adjusted-CLT UCL (Chen-1995)	167.8

		95% Modified-t UCL (Johnson-1978)	145.2

Nonparametric Distribution Free UCLs

95% CLT UCL	126.8	95% Jackknife UCL	138.8
95% Standard Bootstrap UCL	120.8	95% Bootstrap-t UCL	389.6
95% Hall's Bootstrap UCL	473.7	95% Percentile Bootstrap UCL	135.2
95% BCA Bootstrap UCL	150		
90% Chebyshev(Mean, Sd) UCL	181.6	95% Chebyshev(Mean, Sd) UCL	236.6
97.5% Chebyshev(Mean, Sd) UCL	312.9	99% Chebyshev(Mean, Sd) UCL	462.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	46
Maximum	240	Median	23.9
SD	86.29	Std. Error of Mean	32.61
Coefficient of Variation	1.876	Skewness	2.552
Mean of logged Data	2.532	SD of logged Data	1.757

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	109.4	95% Adjusted-CLT UCL (Chen-1995)	133.2
		95% Modified-t UCL (Johnson-1978)	114.6

Nonparametric Distribution Free UCLs

95% CLT UCL	99.64	95% Jackknife UCL	109.4
95% Standard Bootstrap UCL	94.41	95% Bootstrap-t UCL	334.8
95% Hall's Bootstrap UCL	399.7	95% Percentile Bootstrap UCL	107.7
95% BCA Bootstrap UCL	138.2		
90% Chebyshev(Mean, Sd) UCL	143.8	95% Chebyshev(Mean, Sd) UCL	188.2
97.5% Chebyshev(Mean, Sd) UCL	249.7	99% Chebyshev(Mean, Sd) UCL	370.5

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	87.65
Maximum	450	Median	50
SD	161.5	Std. Error of Mean	61.05
Coefficient of Variation	1.843	Skewness	2.527
Mean of logged Data	3.037	SD of logged Data	1.99

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	206.3	95% Adjusted-CLT UCL (Chen-1995)	250.4
		95% Modified-t UCL (Johnson-1978)	216

Nonparametric Distribution Free UCLs

95% CLT UCL	188.1	95% Jackknife UCL	206.3
95% Standard Bootstrap UCL	180.7	95% Bootstrap-t UCL	581.1
95% Hall's Bootstrap UCL	717.7	95% Percentile Bootstrap UCL	202.5
95% BCA Bootstrap UCL	265.2		
90% Chebyshev(Mean, Sd) UCL	270.8	95% Chebyshev(Mean, Sd) UCL	353.8
97.5% Chebyshev(Mean, Sd) UCL	468.9	99% Chebyshev(Mean, Sd) UCL	695.1

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.14	Mean	16.83
Maximum	79	Median	9.41
SD	27.61	Std. Error of Mean	10.43
Coefficient of Variation	1.64	Skewness	2.568
Mean of logged Data	2.099	SD of logged Data	1.145

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.11	95% Adjusted-CLT UCL (Chen-1995)	44.82
		95% Modified-t UCL (Johnson-1978)	38.8

Nonparametric Distribution Free UCLs

95% CLT UCL	34	95% Jackknife UCL	37.11
95% Standard Bootstrap UCL	32.47	95% Bootstrap-t UCL	117.4
95% Hall's Bootstrap UCL	134	95% Percentile Bootstrap UCL	36.71
95% BCA Bootstrap UCL	39.38		
90% Chebyshev(Mean, Sd) UCL	48.14	95% Chebyshev(Mean, Sd) UCL	62.32
97.5% Chebyshev(Mean, Sd) UCL	82	99% Chebyshev(Mean, Sd) UCL	120.7

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2.04	Mean	133.2
Maximum	710	Median	57.3
SD	256.6	Std. Error of Mean	96.97
Coefficient of Variation	1.926	Skewness	2.55
Mean of logged Data	3.26	SD of logged Data	2.163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	321.7	95% Adjusted-CLT UCL (Chen-1995)	392.6
		95% Modified-t UCL (Johnson-1978)	337.3

Nonparametric Distribution Free UCLs

95% CLT UCL	292.7	95% Jackknife UCL	321.7
95% Standard Bootstrap UCL	283.1	95% Bootstrap-t UCL	1032

95% Hall's Bootstrap UCL	1147	95% Percentile Bootstrap UCL	318.1
95% BCA Bootstrap UCL	339.3		
90% Chebyshev(Mean, Sd) UCL	424.2	95% Chebyshev(Mean, Sd) UCL	555.9
97.5% Chebyshev(Mean, Sd) UCL	738.8	99% Chebyshev(Mean, Sd) UCL	1098

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	1.215	Mean	2.211
Maximum	7.9	Median	1.29
SD	2.509	Std. Error of Mean	0.948
Coefficient of Variation	1.135	Skewness	2.645
Mean of logged Data	0.495	SD of logged Data	0.694

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.053	95% Adjusted-CLT UCL (Chen-1995)	4.783
		95% Modified-t UCL (Johnson-1978)	4.211

Nonparametric Distribution Free UCLs

95% CLT UCL	3.771	95% Jackknife UCL	4.053
95% Standard Bootstrap UCL	3.65	95% Bootstrap-t UCL	81.86
95% Hall's Bootstrap UCL	63.43	95% Percentile Bootstrap UCL	4.104
95% BCA Bootstrap UCL	5.051		
90% Chebyshev(Mean, Sd) UCL	5.056	95% Chebyshev(Mean, Sd) UCL	6.344
97.5% Chebyshev(Mean, Sd) UCL	8.133	99% Chebyshev(Mean, Sd) UCL	11.65

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.344

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.14	Mean	60.51
Maximum	290	Median	38.9
SD	102.9	Std. Error of Mean	38.88
Coefficient of Variation	1.7	Skewness	2.467
Mean of logged Data	2.96	SD of logged Data	1.698

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	136.1	95% Adjusted-CLT UCL (Chen-1995)	163.2
		95% Modified-t UCL (Johnson-1978)	142.1

Nonparametric Distribution Free UCLs

95% CLT UCL	124.5	95% Jackknife UCL	136.1
95% Standard Bootstrap UCL	121.9	95% Bootstrap-t UCL	319
95% Hall's Bootstrap UCL	423.6	95% Percentile Bootstrap UCL	136.4
95% BCA Bootstrap UCL	147.9		
90% Chebyshev(Mean, Sd) UCL	177.2	95% Chebyshev(Mean, Sd) UCL	230
97.5% Chebyshev(Mean, Sd) UCL	303.3	99% Chebyshev(Mean, Sd) UCL	447.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.94	Mean	3.346
Maximum	15	Median	1.47
SD	5.162	Std. Error of Mean	1.951
Coefficient of Variation	1.543	Skewness	2.597
Mean of logged Data	0.627	SD of logged Data	0.979

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.137	95% Adjusted-CLT UCL (Chen-1995)	8.601
		95% Modified-t UCL (Johnson-1978)	7.456

Nonparametric Distribution Free UCLs

95% CLT UCL	6.555	95% Jackknife UCL	7.137
95% Standard Bootstrap UCL	6.339	95% Bootstrap-t UCL	29.47
95% Hall's Bootstrap UCL	27.29	95% Percentile Bootstrap UCL	7.119
95% BCA Bootstrap UCL	9.198		
90% Chebyshev(Mean, Sd) UCL	9.199	95% Chebyshev(Mean, Sd) UCL	11.85
97.5% Chebyshev(Mean, Sd) UCL	15.53	99% Chebyshev(Mean, Sd) UCL	22.76

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	11.85

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.14	Mean	57.56
Maximum	300	Median	22.5
SD	107.9	Std. Error of Mean	40.78
Coefficient of Variation	1.874	Skewness	2.546
Mean of logged Data	2.783	SD of logged Data	1.713

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	136.8	95% Adjusted-CLT UCL (Chen-1995)	166.6
		95% Modified-t UCL (Johnson-1978)	143.3

Nonparametric Distribution Free UCLs

95% CLT UCL	124.6	95% Jackknife UCL	136.8
95% Standard Bootstrap UCL	119.1	95% Bootstrap-t UCL	453.3
95% Hall's Bootstrap UCL	454.7	95% Percentile Bootstrap UCL	136
95% BCA Bootstrap UCL	146.6		
90% Chebyshev(Mean, Sd) UCL	179.9	95% Chebyshev(Mean, Sd) UCL	235.3
97.5% Chebyshev(Mean, Sd) UCL	312.2	99% Chebyshev(Mean, Sd) UCL	463.3

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	3.14	Mean	135.7
Maximum	740	Median	55.3
SD	268.2	Std. Error of Mean	101.4
Coefficient of Variation	1.977	Skewness	2.574
Mean of logged Data	3.36	SD of logged Data	1.994

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	332.7	95% Adjusted-CLT UCL (Chen-1995)	407.8
		95% Modified-t UCL (Johnson-1978)	349.1

Nonparametric Distribution Free UCLs

95% CLT UCL	302.4	95% Jackknife UCL	332.7
95% Standard Bootstrap UCL	289.4	95% Bootstrap-t UCL	1212
95% Hall's Bootstrap UCL	1289	95% Percentile Bootstrap UCL	328.1
95% BCA Bootstrap UCL	354.7		
90% Chebyshev(Mean, Sd) UCL	439.8	95% Chebyshev(Mean, Sd) UCL	577.6
97.5% Chebyshev(Mean, Sd) UCL	768.8	99% Chebyshev(Mean, Sd) UCL	1144

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	7	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.72	Mean	0.928

Maximum	2.1	Median	0.73
SD	0.517	Std. Error of Mean	0.195
Coefficient of Variation	0.557	Skewness	2.644
Mean of logged Data	-0.161	SD of logged Data	0.398

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.308	95% Adjusted-CLT UCL (Chen-1995)	1.458
		95% Modified-t UCL (Johnson-1978)	1.34

Nonparametric Distribution Free UCLs

95% CLT UCL	1.249	95% Jackknife UCL	1.308
95% Standard Bootstrap UCL	1.227	95% Bootstrap-t UCL	16.02
95% Hall's Bootstrap UCL	8.756	95% Percentile Bootstrap UCL	1.316
95% BCA Bootstrap UCL	1.512		
90% Chebyshev(Mean, Sd) UCL	1.514	95% Chebyshev(Mean, Sd) UCL	1.78
97.5% Chebyshev(Mean, Sd) UCL	2.148	99% Chebyshev(Mean, Sd) UCL	2.872

Suggested UCL to Use

95% Student's-t UCL	1.308	or 95% Modified-t UCL	1.34

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	7	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	8.4	Mean	13.37
Maximum	14.3	Median	14.2
SD	2.197	Std. Error of Mean	0.83
Coefficient of Variation	0.164	Skewness	-2.623
Mean of logged Data	2.578	SD of logged Data	0.199

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.98	95% Adjusted-CLT UCL (Chen-1995)	13.86

		95% Modified-t UCL (Johnson-1978)	14.85

Nonparametric Distribution Free UCLs

95% CLT UCL	14.74	95% Jackknife UCL	14.98
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A		
90% Chebyshev(Mean, Sd) UCL	15.86	95% Chebyshev(Mean, Sd) UCL	16.99
97.5% Chebyshev(Mean, Sd) UCL	18.56	99% Chebyshev(Mean, Sd) UCL	21.63

Suggested UCL to Use

95% Student's-t UCL	14.98	or 95% Modified-t UCL	14.85

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	10.6	Mean	18.9
Maximum	40.6	Median	15.7
SD	10.73	Std. Error of Mean	4.055
Coefficient of Variation	0.568	Skewness	1.694
Mean of logged Data	2.827	SD of logged Data	0.488

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.**

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.78	95% Adjusted-CLT UCL (Chen-1995)	28.34
		95% Modified-t UCL (Johnson-1978)	27.21

Nonparametric Distribution Free UCLs

95% CLT UCL	25.57	95% Jackknife UCL	26.78
95% Standard Bootstrap UCL	25.2	95% Bootstrap-t UCL	38.83
95% Hall's Bootstrap UCL	57.81	95% Percentile Bootstrap UCL	25.81
95% BCA Bootstrap UCL	27.54		
90% Chebyshev(Mean, Sd) UCL	31.07	95% Chebyshev(Mean, Sd) UCL	36.58
97.5% Chebyshev(Mean, Sd) UCL	44.22	99% Chebyshev(Mean, Sd) UCL	59.25

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	37.3	Mean	46.51
Maximum	48.8	Median	48.1
SD	4.099	Std. Error of Mean	1.549
Coefficient of Variation	0.0881	Skewness	-2.552
Mean of logged Data	3.836	SD of logged Data	0.0964

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.52	95% Adjusted-CLT UCL (Chen-1995)	47.47
		95% Modified-t UCL (Johnson-1978)	49.28

Nonparametric Distribution Free UCLs

95% CLT UCL	49.06	95% Jackknife UCL	49.52
95% Standard Bootstrap UCL	48.92	95% Bootstrap-t UCL	48.57
95% Hall's Bootstrap UCL	47.99	95% Percentile Bootstrap UCL	48.26
95% BCA Bootstrap UCL	48.11		
90% Chebyshev(Mean, Sd) UCL	51.16	95% Chebyshev(Mean, Sd) UCL	53.27
97.5% Chebyshev(Mean, Sd) UCL	56.19	99% Chebyshev(Mean, Sd) UCL	61.93

Suggested UCL to Use

95% Student's-t UCL	49.52	or 95% Modified-t UCL	49.28

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:38:26 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404640)mz - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.94	Mean	14.31
Maximum	160	Median	1.33
SD	43.83	Std. Error of Mean	12.16
Coefficient of Variation	3.062	Skewness	3.589
Mean of logged Data	0.83	SD of logged Data	1.443

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.98	95% Adjusted-CLT UCL (Chen-1995)	47.24
		95% Modified-t UCL (Johnson-1978)	38

Nonparametric Distribution Free UCLs

95% CLT UCL	34.31	95% Jackknife UCL	35.98
95% Standard Bootstrap UCL	33.37	95% Bootstrap-t UCL	776
95% Hall's Bootstrap UCL	371.7	95% Percentile Bootstrap UCL	38.24
95% BCA Bootstrap UCL	51.41		
90% Chebyshev(Mean, Sd) UCL	50.78	95% Chebyshev(Mean, Sd) UCL	67.3
97.5% Chebyshev(Mean, Sd) UCL	90.23	99% Chebyshev(Mean, Sd) UCL	135.3

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	67.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.5	Mean	47.16
Maximum	550	Median	3.32
SD	151.3	Std. Error of Mean	41.96
Coefficient of Variation	3.208	Skewness	3.59

Mean of logged Data	1.203	SD of logged Data	2.05

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	121.9	95% Adjusted-CLT UCL (Chen-1995)	160.8
		95% Modified-t UCL (Johnson-1978)	128.9

Nonparametric Distribution Free UCLs

95% CLT UCL	116.2	95% Jackknife UCL	121.9
95% Standard Bootstrap UCL	113.9	95% Bootstrap-t UCL	2353
95% Hall's Bootstrap UCL	882.5	95% Percentile Bootstrap UCL	130.1
95% BCA Bootstrap UCL	175.8		
90% Chebyshev(Mean, Sd) UCL	173	95% Chebyshev(Mean, Sd) UCL	230
97.5% Chebyshev(Mean, Sd) UCL	309.2	99% Chebyshev(Mean, Sd) UCL	464.6

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2.035	Mean	107.2
Maximum	1200	Median	5.97
SD	329.3	Std. Error of Mean	91.32
Coefficient of Variation	3.073	Skewness	3.572
Mean of logged Data	2.305	SD of logged Data	1.903

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	269.9	95% Adjusted-CLT UCL (Chen-1995)	354
		95% Modified-t UCL (Johnson-1978)	285

Nonparametric Distribution Free UCLs

95% CLT UCL	257.4	95% Jackknife UCL	269.9
95% Standard Bootstrap UCL	248.4	95% Bootstrap-t UCL	2745
95% Hall's Bootstrap UCL	2210	95% Percentile Bootstrap UCL	284.5
95% BCA Bootstrap UCL	378.8		
90% Chebyshev(Mean, Sd) UCL	381.1	95% Chebyshev(Mean, Sd) UCL	505.2
97.5% Chebyshev(Mean, Sd) UCL	677.4	99% Chebyshev(Mean, Sd) UCL	1016

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2.075	Mean	711.8
Maximum	8000	Median	34.7
SD	2196	Std. Error of Mean	609
Coefficient of Variation	3.085	Skewness	3.571
Mean of logged Data	3.867	SD of logged Data	2.251

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1797	95% Adjusted-CLT UCL (Chen-1995)	2358
		95% Modified-t UCL (Johnson-1978)	1898

Nonparametric Distribution Free UCLs

95% CLT UCL	1714	95% Jackknife UCL	1797
95% Standard Bootstrap UCL	1680	95% Bootstrap-t UCL	18050
95% Hall's Bootstrap UCL	12720	95% Percentile Bootstrap UCL	1921
95% BCA Bootstrap UCL	2624		
90% Chebyshev(Mean, Sd) UCL	2539	95% Chebyshev(Mean, Sd) UCL	3366
97.5% Chebyshev(Mean, Sd) UCL	4515	99% Chebyshev(Mean, Sd) UCL	6772

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	1.47	Mean	552.1
Maximum	5700	Median	39.5
SD	1560	Std. Error of Mean	432.6
Coefficient of Variation	2.825	Skewness	3.506
Mean of logged Data	3.972	SD of logged Data	2.197

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1323	95% Adjusted-CLT UCL (Chen-1995)	1713
		95% Modified-t UCL (Johnson-1978)	1393

Nonparametric Distribution Free UCLs

95% CLT UCL	1264	95% Jackknife UCL	1323
95% Standard Bootstrap UCL	1228	95% Bootstrap-t UCL	9402
95% Hall's Bootstrap UCL	6297	95% Percentile Bootstrap UCL	1397
95% BCA Bootstrap UCL	1871		
90% Chebyshev(Mean, Sd) UCL	1850	95% Chebyshev(Mean, Sd) UCL	2438
97.5% Chebyshev(Mean, Sd) UCL	3253	99% Chebyshev(Mean, Sd) UCL	4856

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.19	Mean	261.5
Maximum	1600	Median	41.9
SD	472.2	Std. Error of Mean	131
Coefficient of Variation	1.806	Skewness	2.378
Mean of logged Data	4.091	SD of logged Data	1.869

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	494.9	95% Adjusted-CLT UCL (Chen-1995)	569.2
		95% Modified-t UCL (Johnson-1978)	509.3

Nonparametric Distribution Free UCLs

95% CLT UCL	476.9	95% Jackknife UCL	494.9
95% Standard Bootstrap UCL	473.2	95% Bootstrap-t UCL	1292
95% Hall's Bootstrap UCL	1395	95% Percentile Bootstrap UCL	498.9
95% BCA Bootstrap UCL	605.4		
90% Chebyshev(Mean, Sd) UCL	654.4	95% Chebyshev(Mean, Sd) UCL	832.4
97.5% Chebyshev(Mean, Sd) UCL	1079	99% Chebyshev(Mean, Sd) UCL	1565

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.19	Mean	536.7
Maximum	6000	Median	21.4
SD	1647	Std. Error of Mean	456.7
Coefficient of Variation	3.068	Skewness	3.568
Mean of logged Data	3.669	SD of logged Data	2.145

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1351	95% Adjusted-CLT UCL (Chen-1995)	1771
		95% Modified-t UCL (Johnson-1978)	1426

Nonparametric Distribution Free UCLs

95% CLT UCL	1288	95% Jackknife UCL	1351
95% Standard Bootstrap UCL	1264	95% Bootstrap-t UCL	13302
95% Hall's Bootstrap UCL	8803	95% Percentile Bootstrap UCL	1440
95% BCA Bootstrap UCL	1920		
90% Chebyshev(Mean, Sd) UCL	1907	95% Chebyshev(Mean, Sd) UCL	2527
97.5% Chebyshev(Mean, Sd) UCL	3389	99% Chebyshev(Mean, Sd) UCL	5081

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2.075	Mean	379.4
Maximum	4200	Median	17.8
SD	1152	Std. Error of Mean	319.5
Coefficient of Variation	3.037	Skewness	3.563
Mean of logged Data	3.384	SD of logged Data	2.139

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	948.8	95% Adjusted-CLT UCL (Chen-1995)	1242
		95% Modified-t UCL (Johnson-1978)	1001

Nonparametric Distribution Free UCLs

95% CLT UCL	904.9	95% Jackknife UCL	948.8
95% Standard Bootstrap UCL	882.6	95% Bootstrap-t UCL	9039
95% Hall's Bootstrap UCL	6348	95% Percentile Bootstrap UCL	1008
95% BCA Bootstrap UCL	1331		
90% Chebyshev(Mean, Sd) UCL	1338	95% Chebyshev(Mean, Sd) UCL	1772
97.5% Chebyshev(Mean, Sd) UCL	2375	99% Chebyshev(Mean, Sd) UCL	3558

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2.075	Mean	974.9
Maximum	11000	Median	49.9
SD	3021	Std. Error of Mean	837.8
Coefficient of Variation	3.099	Skewness	3.57
Mean of logged Data	4.159	SD of logged Data	2.267

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2468	95% Adjusted-CLT UCL (Chen-1995)	3239
		95% Modified-t UCL (Johnson-1978)	2606

Nonparametric Distribution Free UCLs

95% CLT UCL	2353	95% Jackknife UCL	2468
95% Standard Bootstrap UCL	2317	95% Bootstrap-t UCL	30570
95% Hall's Bootstrap UCL	18288	95% Percentile Bootstrap UCL	2630
95% BCA Bootstrap UCL	3533		
90% Chebyshev(Mean, Sd) UCL	3488	95% Chebyshev(Mean, Sd) UCL	4627
97.5% Chebyshev(Mean, Sd) UCL	6207	99% Chebyshev(Mean, Sd) UCL	9311

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.135	Mean	145.1
Maximum	1600	Median	6.52
SD	438.8	Std. Error of Mean	121.7
Coefficient of Variation	3.024	Skewness	3.56
Mean of logged Data	2.651	SD of logged Data	1.893

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	362	95% Adjusted-CLT UCL (Chen-1995)	473.7
		95% Modified-t UCL (Johnson-1978)	382

Nonparametric Distribution Free UCLs

95% CLT UCL	345.3	95% Jackknife UCL	362
95% Standard Bootstrap UCL	338.2	95% Bootstrap-t UCL	3707
95% Hall's Bootstrap UCL	2402	95% Percentile Bootstrap UCL	385.3
95% BCA Bootstrap UCL	518.4		
90% Chebyshev(Mean, Sd) UCL	510.2	95% Chebyshev(Mean, Sd) UCL	675.6
97.5% Chebyshev(Mean, Sd) UCL	905.1	99% Chebyshev(Mean, Sd) UCL	1356

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2.19	Mean	1233
Maximum	14000	Median	51.6
SD	3846	Std. Error of Mean	1067
Coefficient of Variation	3.118	Skewness	3.573
Mean of logged Data	4.318	SD of logged Data	2.308

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3135	95% Adjusted-CLT UCL (Chen-1995)	4117
		95% Modified-t UCL (Johnson-1978)	3311

Nonparametric Distribution Free UCLs

95% CLT UCL	2988	95% Jackknife UCL	3135
95% Standard Bootstrap UCL	2953	95% Bootstrap-t UCL	37650
95% Hall's Bootstrap UCL	25727	95% Percentile Bootstrap UCL	3296
95% BCA Bootstrap UCL	4394		
90% Chebyshev(Mean, Sd) UCL	4433	95% Chebyshev(Mean, Sd) UCL	5883
97.5% Chebyshev(Mean, Sd) UCL	7895	99% Chebyshev(Mean, Sd) UCL	11846

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	1.19	Mean	23.14
Maximum	270	Median	1.325
SD	74.22	Std. Error of Mean	20.59
Coefficient of Variation	3.208	Skewness	3.597
Mean of logged Data	1.007	SD of logged Data	1.542

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.82	95% Adjusted-CLT UCL (Chen-1995)	78.94
		95% Modified-t UCL (Johnson-1978)	63.25

Nonparametric Distribution Free UCLs

95% CLT UCL	57	95% Jackknife UCL	59.82
95% Standard Bootstrap UCL	56.39	95% Bootstrap-t UCL	1163
95% Hall's Bootstrap UCL	1075	95% Percentile Bootstrap UCL	64.4
95% BCA Bootstrap UCL	85.23		
90% Chebyshev(Mean, Sd) UCL	84.89	95% Chebyshev(Mean, Sd) UCL	112.9
97.5% Chebyshev(Mean, Sd) UCL	151.7	99% Chebyshev(Mean, Sd) UCL	228

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 228

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.19	Mean	477.9
Maximum	5100	Median	24.1
SD	1397	Std. Error of Mean	387.4
Coefficient of Variation	2.923	Skewness	3.534
Mean of logged Data	3.748	SD of logged Data	2.108

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1168	95% Adjusted-CLT UCL (Chen-1995)	1521
		95% Modified-t UCL (Johnson-1978)	1232

Nonparametric Distribution Free UCLs

95% CLT UCL	1115	95% Jackknife UCL	1168
95% Standard Bootstrap UCL	1096	95% Bootstrap-t UCL	8985
95% Hall's Bootstrap UCL	6333	95% Percentile Bootstrap UCL	1225
95% BCA Bootstrap UCL	1676		
90% Chebyshev(Mean, Sd) UCL	1640	95% Chebyshev(Mean, Sd) UCL	2167
97.5% Chebyshev(Mean, Sd) UCL	2898	99% Chebyshev(Mean, Sd) UCL	4333

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.94	Mean	40.57
Maximum	460	Median	3.07
SD	126.3	Std. Error of Mean	35.02
Coefficient of Variation	3.113	Skewness	3.58
Mean of logged Data	1.446	SD of logged Data	1.783

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	103	95% Adjusted-CLT UCL (Chen-1995)	135.3

		95% Modified-t UCL (Johnson-1978)	108.8

Nonparametric Distribution Free UCLs

95% CLT UCL	98.18	95% Jackknife UCL	103
95% Standard Bootstrap UCL	96.09	95% Bootstrap-t UCL	1856
95% Hall's Bootstrap UCL	675.3	95% Percentile Bootstrap UCL	110.6
95% BCA Bootstrap UCL	147.7		
90% Chebyshev(Mean, Sd) UCL	145.6	95% Chebyshev(Mean, Sd) UCL	193.2
97.5% Chebyshev(Mean, Sd) UCL	259.3	99% Chebyshev(Mean, Sd) UCL	389.1

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.19	Mean	546.5
Maximum	6200	Median	25.8
SD	1703	Std. Error of Mean	472.2
Coefficient of Variation	3.116	Skewness	3.576
Mean of logged Data	3.599	SD of logged Data	2.201

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1388	95% Adjusted-CLT UCL (Chen-1995)	1824
		95% Modified-t UCL (Johnson-1978)	1466

Nonparametric Distribution Free UCLs

95% CLT UCL	1323	95% Jackknife UCL	1388
95% Standard Bootstrap UCL	1272	95% Bootstrap-t UCL	14617
95% Hall's Bootstrap UCL	11417	95% Percentile Bootstrap UCL	1476
95% BCA Bootstrap UCL	1987		
90% Chebyshev(Mean, Sd) UCL	1963	95% Chebyshev(Mean, Sd) UCL	2605
97.5% Chebyshev(Mean, Sd) UCL	3496	99% Chebyshev(Mean, Sd) UCL	5245

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.19	Mean	1394
Maximum	16000	Median	60.4
SD	4398	Std. Error of Mean	1220
Coefficient of Variation	3.156	Skewness	3.579
Mean of logged Data	4.41	SD of logged Data	2.281

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3568	95% Adjusted-CLT UCL (Chen-1995)	4694
		95% Modified-t UCL (Johnson-1978)	3770

Nonparametric Distribution Free UCLs

95% CLT UCL	3400	95% Jackknife UCL	3568
95% Standard Bootstrap UCL	3342	95% Bootstrap-t UCL	50964
95% Hall's Bootstrap UCL	30392	95% Percentile Bootstrap UCL	3795
95% BCA Bootstrap UCL	5075		
90% Chebyshev(Mean, Sd) UCL	5053	95% Chebyshev(Mean, Sd) UCL	6711
97.5% Chebyshev(Mean, Sd) UCL	9012	99% Chebyshev(Mean, Sd) UCL	13531

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	13	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	7.62	Mean	10.66
Maximum	12.05	Median	11.6
SD	1.739	Std. Error of Mean	0.482
Coefficient of Variation	0.163	Skewness	-1.187
Mean of logged Data	2.352	SD of logged Data	0.181

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.52	95% Adjusted-CLT UCL (Chen-1995)	11.28
		95% Modified-t UCL (Johnson-1978)	11.49

Nonparametric Distribution Free UCLs

95% CLT UCL	11.45	95% Jackknife UCL	11.52
95% Standard Bootstrap UCL	11.42	95% Bootstrap-t UCL	11.37
95% Hall's Bootstrap UCL	11.26	95% Percentile Bootstrap UCL	11.39
95% BCA Bootstrap UCL	11.33		
90% Chebyshev(Mean, Sd) UCL	12.1	95% Chebyshev(Mean, Sd) UCL	12.76
97.5% Chebyshev(Mean, Sd) UCL	13.67	99% Chebyshev(Mean, Sd) UCL	15.46

Suggested UCL to Use

95% Student's-t UCL	11.52	or 95% Modified-t UCL	11.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	7.29	Mean	20.61
Maximum	108	Median	10.8
SD	27.34	Std. Error of Mean	7.582
Coefficient of Variation	1.327	Skewness	3.149
Mean of logged Data	2.626	SD of logged Data	0.791

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.12	95% Adjusted-CLT UCL (Chen-1995)	40.16
		95% Modified-t UCL (Johnson-1978)	35.23

Nonparametric Distribution Free UCLs

95% CLT UCL	33.08	95% Jackknife UCL	34.12
95% Standard Bootstrap UCL	32.93	95% Bootstrap-t UCL	62.21
95% Hall's Bootstrap UCL	73.79	95% Percentile Bootstrap UCL	34.68
95% BCA Bootstrap UCL	42.56		
90% Chebyshev(Mean, Sd) UCL	43.35	95% Chebyshev(Mean, Sd) UCL	53.66
97.5% Chebyshev(Mean, Sd) UCL	67.96	99% Chebyshev(Mean, Sd) UCL	96.05

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	53.66

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	29.5	Mean	45.26
Maximum	61.9	Median	45.1
SD	12.77	Std. Error of Mean	3.543
Coefficient of Variation	0.282	Skewness	0.0959
Mean of logged Data	3.774	SD of logged Data	0.29

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.58	95% Adjusted-CLT UCL (Chen-1995)	51.19
		95% Modified-t UCL (Johnson-1978)	51.59

Nonparametric Distribution Free UCLs

95% CLT UCL	51.09	95% Jackknife UCL	51.58
95% Standard Bootstrap UCL	50.69	95% Bootstrap-t UCL	51.95
95% Hall's Bootstrap UCL	50.7	95% Percentile Bootstrap UCL	50.86
95% BCA Bootstrap UCL	50.88		
90% Chebyshev(Mean, Sd) UCL	55.89	95% Chebyshev(Mean, Sd) UCL	60.7
97.5% Chebyshev(Mean, Sd) UCL	67.39	99% Chebyshev(Mean, Sd) UCL	80.51

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 8:57:21 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404658) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.648	Mean	1.722
Maximum	3.75	Median	1.11
SD	1.257	Std. Error of Mean	0.419
Coefficient of Variation	0.73	Skewness	0.997
Mean of logged Data	0.321	SD of logged Data	0.693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.501	95% Adjusted-CLT UCL (Chen-1995)	2.56
		95% Modified-t UCL (Johnson-1978)	2.525

Nonparametric Distribution Free UCLs

95% CLT UCL	2.411	95% Jackknife UCL	2.501
95% Standard Bootstrap UCL	2.374	95% Bootstrap-t UCL	2.927
95% Hall's Bootstrap UCL	2.432	95% Percentile Bootstrap UCL	2.392
95% BCA Bootstrap UCL	2.498		
90% Chebyshev(Mean, Sd) UCL	2.979	95% Chebyshev(Mean, Sd) UCL	3.549
97.5% Chebyshev(Mean, Sd) UCL	4.339	99% Chebyshev(Mean, Sd) UCL	5.892

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.423	Mean	1.747
Maximum	8.68	Median	0.737
SD	2.643	Std. Error of Mean	0.881
Coefficient of Variation	1.513	Skewness	2.818
Mean of logged Data	-3.048E-4	SD of logged Data	0.968

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.386	95% Adjusted-CLT UCL (Chen-1995)	4.081
		95% Modified-t UCL (Johnson-1978)	3.524

Nonparametric Distribution Free UCLs

95% CLT UCL	3.196	95% Jackknife UCL	3.386
95% Standard Bootstrap UCL	3.12	95% Bootstrap-t UCL	8.746
95% Hall's Bootstrap UCL	9.036	95% Percentile Bootstrap UCL	3.368
95% BCA Bootstrap UCL	4.251		
90% Chebyshev(Mean, Sd) UCL	4.39	95% Chebyshev(Mean, Sd) UCL	5.588
97.5% Chebyshev(Mean, Sd) UCL	7.25	99% Chebyshev(Mean, Sd) UCL	10.51

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	2	Mean	3.93
Maximum	8.1	Median	2.125
SD	2.685	Std. Error of Mean	0.895
Coefficient of Variation	0.683	Skewness	0.946
Mean of logged Data	1.18	SD of logged Data	0.63

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	5.594	95% Adjusted-CLT UCL (Chen-1995)	5.704
		95% Modified-t UCL (Johnson-1978)	5.641

Nonparametric Distribution Free UCLs

95% CLT UCL	5.402	95% Jackknife UCL	5.594
95% Standard Bootstrap UCL	5.341	95% Bootstrap-t UCL	6.498
95% Hall's Bootstrap UCL	5.05	95% Percentile Bootstrap UCL	5.372
95% BCA Bootstrap UCL	5.611		
90% Chebyshev(Mean, Sd) UCL	6.615	95% Chebyshev(Mean, Sd) UCL	7.832
97.5% Chebyshev(Mean, Sd) UCL	9.52	99% Chebyshev(Mean, Sd) UCL	12.84

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.832

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2	Mean	23.41
Maximum	61.2	Median	13.3
SD	22.42	Std. Error of Mean	7.474
Coefficient of Variation	0.958	Skewness	0.635
Mean of logged Data	2.471	SD of logged Data	1.433

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.31	95% Adjusted-CLT UCL (Chen-1995)	37.4
		95% Modified-t UCL (Johnson-1978)	37.58

Nonparametric Distribution Free UCLs

95% CLT UCL	35.71	95% Jackknife UCL	37.31
95% Standard Bootstrap UCL	35.2	95% Bootstrap-t UCL	40.71
95% Hall's Bootstrap UCL	34.68	95% Percentile Bootstrap UCL	35.38
95% BCA Bootstrap UCL	36.34		
90% Chebyshev(Mean, Sd) UCL	45.84	95% Chebyshev(Mean, Sd) UCL	55.99
97.5% Chebyshev(Mean, Sd) UCL	70.09	99% Chebyshev(Mean, Sd) UCL	97.78

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.96	Mean	33.18
Maximum	91.7	Median	21.1
SD	32.52	Std. Error of Mean	10.84
Coefficient of Variation	0.98	Skewness	0.718
Mean of logged Data	2.709	SD of logged Data	1.604

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	53.34	95% Adjusted-CLT UCL (Chen-1995)	53.79
		95% Modified-t UCL (Johnson-1978)	53.78

Nonparametric Distribution Free UCLs

95% CLT UCL	51.02	95% Jackknife UCL	53.34
95% Standard Bootstrap UCL	49.91	95% Bootstrap-t UCL	59.88
95% Hall's Bootstrap UCL	51.73	95% Percentile Bootstrap UCL	51.2
95% BCA Bootstrap UCL	52.08		
90% Chebyshev(Mean, Sd) UCL	65.71	95% Chebyshev(Mean, Sd) UCL	80.44
97.5% Chebyshev(Mean, Sd) UCL	100.9	99% Chebyshev(Mean, Sd) UCL	141.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.08	Mean	44.81
Maximum	121	Median	30.9
SD	43.44	Std. Error of Mean	14.48
Coefficient of Variation	0.969	Skewness	0.695
Mean of logged Data	3.058	SD of logged Data	1.534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	71.74	95% Adjusted-CLT UCL (Chen-1995)	72.21
		95% Modified-t UCL (Johnson-1978)	72.3

Nonparametric Distribution Free UCLs

95% CLT UCL	68.63	95% Jackknife UCL	71.74
95% Standard Bootstrap UCL	67.16	95% Bootstrap-t UCL	77.71
95% Hall's Bootstrap UCL	68.11	95% Percentile Bootstrap UCL	68.74
95% BCA Bootstrap UCL	71.24		
90% Chebyshev(Mean, Sd) UCL	88.25	95% Chebyshev(Mean, Sd) UCL	107.9
97.5% Chebyshev(Mean, Sd) UCL	135.2	99% Chebyshev(Mean, Sd) UCL	188.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.08	Mean	26.38
Maximum	68	Median	23.2
SD	23.89	Std. Error of Mean	7.964
Coefficient of Variation	0.906	Skewness	0.66
Mean of logged Data	2.709	SD of logged Data	1.276

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.19	95% Adjusted-CLT UCL (Chen-1995)	41.35
		95% Modified-t UCL (Johnson-1978)	41.48

Nonparametric Distribution Free UCLs

95% CLT UCL	39.48	95% Jackknife UCL	41.19

95% Standard Bootstrap UCL	38.4	95% Bootstrap-t UCL	43.12
95% Hall's Bootstrap UCL	39.57	95% Percentile Bootstrap UCL	39.16
95% BCA Bootstrap UCL	39.36		
90% Chebyshev(Mean, Sd) UCL	50.27	95% Chebyshev(Mean, Sd) UCL	61.09
97.5% Chebyshev(Mean, Sd) UCL	76.11	99% Chebyshev(Mean, Sd) UCL	105.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2	Mean	17.91
Maximum	44	Median	11.6
SD	16.16	Std. Error of Mean	5.388
Coefficient of Variation	0.902	Skewness	0.561
Mean of logged Data	2.309	SD of logged Data	1.297

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.93	95% Adjusted-CLT UCL (Chen-1995)	27.85
		95% Modified-t UCL (Johnson-1978)	28.1

Nonparametric Distribution Free UCLs

95% CLT UCL	26.78	95% Jackknife UCL	27.93
95% Standard Bootstrap UCL	26.27	95% Bootstrap-t UCL	30.09
95% Hall's Bootstrap UCL	25.77	95% Percentile Bootstrap UCL	26.4
95% BCA Bootstrap UCL	27.21		
90% Chebyshev(Mean, Sd) UCL	34.08	95% Chebyshev(Mean, Sd) UCL	41.4
97.5% Chebyshev(Mean, Sd) UCL	51.56	99% Chebyshev(Mean, Sd) UCL	71.52

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2	Mean	33.01
Maximum	87.1	Median	19.7
SD	32.39	Std. Error of Mean	10.8
Coefficient of Variation	0.981	Skewness	0.651
Mean of logged Data	2.72	SD of logged Data	1.573

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	53.08	95% Adjusted-CLT UCL (Chen-1995)	53.27
		95% Modified-t UCL (Johnson-1978)	53.47

Nonparametric Distribution Free UCLs

95% CLT UCL	50.76	95% Jackknife UCL	53.08
95% Standard Bootstrap UCL	49.63	95% Bootstrap-t UCL	57.99
95% Hall's Bootstrap UCL	48.96	95% Percentile Bootstrap UCL	50.16
95% BCA Bootstrap UCL	51.21		
90% Chebyshev(Mean, Sd) UCL	65.39	95% Chebyshev(Mean, Sd) UCL	80.06
97.5% Chebyshev(Mean, Sd) UCL	100.4	99% Chebyshev(Mean, Sd) UCL	140.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.08	Mean	6.657
Maximum	15.9	Median	4.95
SD	4.581	Std. Error of Mean	1.527
Coefficient of Variation	0.688	Skewness	1.243
Mean of logged Data	1.71	SD of logged Data	0.625

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.496	95% Adjusted-CLT UCL (Chen-1995)	9.844
		95% Modified-t UCL (Johnson-1978)	9.602

Nonparametric Distribution Free UCLs

95% CLT UCL	9.168	95% Jackknife UCL	9.496
95% Standard Bootstrap UCL	9.051	95% Bootstrap-t UCL	11.16
95% Hall's Bootstrap UCL	9.233	95% Percentile Bootstrap UCL	9.068
95% BCA Bootstrap UCL	9.658		
90% Chebyshev(Mean, Sd) UCL	11.24	95% Chebyshev(Mean, Sd) UCL	13.31
97.5% Chebyshev(Mean, Sd) UCL	16.19	99% Chebyshev(Mean, Sd) UCL	21.85

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2	Mean	37.04
Maximum	96.9	Median	21.5
SD	36.43	Std. Error of Mean	12.14
Coefficient of Variation	0.984	Skewness	0.624
Mean of logged Data	2.82	SD of logged Data	1.594

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.62	95% Adjusted-CLT UCL (Chen-1995)	59.71
		95% Modified-t UCL (Johnson-1978)	60.04

Nonparametric Distribution Free UCLs

95% CLT UCL	57.01	95% Jackknife UCL	59.62
95% Standard Bootstrap UCL	55.97	95% Bootstrap-t UCL	63.75
95% Hall's Bootstrap UCL	54.37	95% Percentile Bootstrap UCL	55.96
95% BCA Bootstrap UCL	57.96		
90% Chebyshev(Mean, Sd) UCL	73.47	95% Chebyshev(Mean, Sd) UCL	89.97
97.5% Chebyshev(Mean, Sd) UCL	112.9	99% Chebyshev(Mean, Sd) UCL	157.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.08	Mean	30.41
Maximum	80.2	Median	22.8
SD	28.22	Std. Error of Mean	9.406
Coefficient of Variation	0.928	Skewness	0.7
Mean of logged Data	2.804	SD of logged Data	1.344

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.9	95% Adjusted-CLT UCL (Chen-1995)	48.23
		95% Modified-t UCL (Johnson-1978)	48.27

Nonparametric Distribution Free UCLs

95% CLT UCL	45.88	95% Jackknife UCL	47.9
95% Standard Bootstrap UCL	44.42	95% Bootstrap-t UCL	51.63
95% Hall's Bootstrap UCL	46.45	95% Percentile Bootstrap UCL	45.52
95% BCA Bootstrap UCL	46.84		
90% Chebyshev(Mean, Sd) UCL	58.63	95% Chebyshev(Mean, Sd) UCL	71.41
97.5% Chebyshev(Mean, Sd) UCL	89.15	99% Chebyshev(Mean, Sd) UCL	124

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.935	Mean	2.61
Maximum	5.22	Median	2.47
SD	1.583	Std. Error of Mean	0.528
Coefficient of Variation	0.607	Skewness	0.356
Mean of logged Data	0.77	SD of logged Data	0.676

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.591	95% Adjusted-CLT UCL (Chen-1995)	3.545
		95% Modified-t UCL (Johnson-1978)	3.601

Nonparametric Distribution Free UCLs

95% CLT UCL	3.478	95% Jackknife UCL	3.591
95% Standard Bootstrap UCL	3.431	95% Bootstrap-t UCL	3.625
95% Hall's Bootstrap UCL	3.4	95% Percentile Bootstrap UCL	3.382
95% BCA Bootstrap UCL	3.485		
90% Chebyshev(Mean, Sd) UCL	4.193	95% Chebyshev(Mean, Sd) UCL	4.91
97.5% Chebyshev(Mean, Sd) UCL	5.905	99% Chebyshev(Mean, Sd) UCL	7.86

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.08	Mean	15.97
Maximum	39.6	Median	8.13
SD	14.32	Std. Error of Mean	4.775
Coefficient of Variation	0.897	Skewness	0.68
Mean of logged Data	2.321	SD of logged Data	1.061

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	24.85	95% Adjusted-CLT UCL (Chen-1995)	24.98
		95% Modified-t UCL (Johnson-1978)	25.03

Nonparametric Distribution Free UCLs

95% CLT UCL	23.83	95% Jackknife UCL	24.85
95% Standard Bootstrap UCL	23.48	95% Bootstrap-t UCL	27.95
95% Hall's Bootstrap UCL	22.78	95% Percentile Bootstrap UCL	23.93
95% BCA Bootstrap UCL	24.14		
90% Chebyshev(Mean, Sd) UCL	30.3	95% Chebyshev(Mean, Sd) UCL	36.79
97.5% Chebyshev(Mean, Sd) UCL	45.79	99% Chebyshev(Mean, Sd) UCL	63.48

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.78	Mean	37.23
Maximum	95.3	Median	22.1
SD	35.95	Std. Error of Mean	11.98
Coefficient of Variation	0.966	Skewness	0.616
Mean of logged Data	2.911	SD of logged Data	1.467

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.51	95% Adjusted-CLT UCL (Chen-1995)	59.56
		95% Modified-t UCL (Johnson-1978)	59.92

Nonparametric Distribution Free UCLs

95% CLT UCL	56.93	95% Jackknife UCL	59.51
95% Standard Bootstrap UCL	55.7	95% Bootstrap-t UCL	64.36
95% Hall's Bootstrap UCL	54.46	95% Percentile Bootstrap UCL	57.14
95% BCA Bootstrap UCL	60.03		
90% Chebyshev(Mean, Sd) UCL	73.17	95% Chebyshev(Mean, Sd) UCL	89.45
97.5% Chebyshev(Mean, Sd) UCL	112.1	99% Chebyshev(Mean, Sd) UCL	156.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	14.5	Mean	49.37
Maximum	94.4	Median	49.7
SD	30.9	Std. Error of Mean	10.3
Coefficient of Variation	0.626	Skewness	0.104
Mean of logged Data	3.666	SD of logged Data	0.78

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	68.52	95% Adjusted-CLT UCL (Chen-1995)	66.69
		95% Modified-t UCL (Johnson-1978)	68.58

Nonparametric Distribution Free UCLs

95% CLT UCL	66.31	95% Jackknife UCL	68.52
95% Standard Bootstrap UCL	65.12	95% Bootstrap-t UCL	68.78
95% Hall's Bootstrap UCL	64.81	95% Percentile Bootstrap UCL	65.34
95% BCA Bootstrap UCL	64.89		
90% Chebyshev(Mean, Sd) UCL	80.27	95% Chebyshev(Mean, Sd) UCL	94.27
97.5% Chebyshev(Mean, Sd) UCL	113.7	99% Chebyshev(Mean, Sd) UCL	151.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.675	Mean	57.65
Maximum	105	Median	57.6
SD	27.23	Std. Error of Mean	9.078
Coefficient of Variation	0.472	Skewness	-0.371
Mean of logged Data	3.815	SD of logged Data	0.978

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	74.53	95% Adjusted-CLT UCL (Chen-1995)	71.38
		95% Modified-t UCL (Johnson-1978)	74.35

Nonparametric Distribution Free UCLs

95% CLT UCL	72.58	95% Jackknife UCL	74.53
95% Standard Bootstrap UCL	71.64	95% Bootstrap-t UCL	73.02
95% Hall's Bootstrap UCL	74.01	95% Percentile Bootstrap UCL	71.6
95% BCA Bootstrap UCL	70.68		
90% Chebyshev(Mean, Sd) UCL	84.89	95% Chebyshev(Mean, Sd) UCL	97.22
97.5% Chebyshev(Mean, Sd) UCL	114.3	99% Chebyshev(Mean, Sd) UCL	148

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:00:28 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404659) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.89	Mean	8.11
Maximum	12.2	Median	7.58
SD	2.635	Std. Error of Mean	0.878
Coefficient of Variation	0.325	Skewness	0.441
Mean of logged Data	2.046	SD of logged Data	0.324

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.743	95% Adjusted-CLT UCL (Chen-1995)	9.693
		95% Modified-t UCL (Johnson-1978)	9.765

Nonparametric Distribution Free UCLs

95% CLT UCL	9.555	95% Jackknife UCL	9.743
95% Standard Bootstrap UCL	9.454	95% Bootstrap-t UCL	9.951
95% Hall's Bootstrap UCL	9.394	95% Percentile Bootstrap UCL	9.526
95% BCA Bootstrap UCL	9.68		
90% Chebyshev(Mean, Sd) UCL	10.74	95% Chebyshev(Mean, Sd) UCL	11.94
97.5% Chebyshev(Mean, Sd) UCL	13.59	99% Chebyshev(Mean, Sd) UCL	16.85

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.323	Mean	1.209
Maximum	2.56	Median	0.839
SD	0.859	Std. Error of Mean	0.286
Coefficient of Variation	0.71	Skewness	0.491
Mean of logged Data	-0.0731	SD of logged Data	0.8

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.742	95% Adjusted-CLT UCL (Chen-1995)	1.731
		95% Modified-t UCL (Johnson-1978)	1.75

Nonparametric Distribution Free UCLs

95% CLT UCL	1.68	95% Jackknife UCL	1.742
95% Standard Bootstrap UCL	1.653	95% Bootstrap-t UCL	1.829
95% Hall's Bootstrap UCL	1.607	95% Percentile Bootstrap UCL	1.664
95% BCA Bootstrap UCL	1.716		
90% Chebyshev(Mean, Sd) UCL	2.069	95% Chebyshev(Mean, Sd) UCL	2.458
97.5% Chebyshev(Mean, Sd) UCL	2.998	99% Chebyshev(Mean, Sd) UCL	4.059

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.61	Mean	3.984
Maximum	8.5	Median	2.155
SD	2.817	Std. Error of Mean	0.939
Coefficient of Variation	0.707	Skewness	0.924
Mean of logged Data	1.178	SD of logged Data	0.657

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	5.731	95% Adjusted-CLT UCL (Chen-1995)	5.838
		95% Modified-t UCL (Johnson-1978)	5.779

Nonparametric Distribution Free UCLs

95% CLT UCL	5.529	95% Jackknife UCL	5.731
95% Standard Bootstrap UCL	5.407	95% Bootstrap-t UCL	6.381
95% Hall's Bootstrap UCL	5.035	95% Percentile Bootstrap UCL	5.529
95% BCA Bootstrap UCL	5.623		
90% Chebyshev(Mean, Sd) UCL	6.802	95% Chebyshev(Mean, Sd) UCL	8.078
97.5% Chebyshev(Mean, Sd) UCL	9.849	99% Chebyshev(Mean, Sd) UCL	13.33

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 8.078

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.105	Mean	22.74
Maximum	64.4	Median	15.6
SD	22.81	Std. Error of Mean	7.604
Coefficient of Variation	1.003	Skewness	0.931
Mean of logged Data	2.452	SD of logged Data	1.395

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	36.88	95% Adjusted-CLT UCL (Chen-1995)	37.77
		95% Modified-t UCL (Johnson-1978)	37.28

Nonparametric Distribution Free UCLs

95% CLT UCL	35.25	95% Jackknife UCL	36.88
95% Standard Bootstrap UCL	34.37	95% Bootstrap-t UCL	43.25
95% Hall's Bootstrap UCL	41.73	95% Percentile Bootstrap UCL	35.28
95% BCA Bootstrap UCL	36.74		
90% Chebyshev(Mean, Sd) UCL	45.55	95% Chebyshev(Mean, Sd) UCL	55.89
97.5% Chebyshev(Mean, Sd) UCL	70.23	99% Chebyshev(Mean, Sd) UCL	98.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.105	Mean	33.63
Maximum	98.4	Median	23.9
SD	35.04	Std. Error of Mean	11.68
Coefficient of Variation	1.042	Skewness	0.953
Mean of logged Data	2.708	SD of logged Data	1.584

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.35	95% Adjusted-CLT UCL (Chen-1995)	56.81
		95% Modified-t UCL (Johnson-1978)	55.97

Nonparametric Distribution Free UCLs

95% CLT UCL	52.84	95% Jackknife UCL	55.35
95% Standard Bootstrap UCL	52.38	95% Bootstrap-t UCL	67.25
95% Hall's Bootstrap UCL	64.19	95% Percentile Bootstrap UCL	54.06
95% BCA Bootstrap UCL	55.42		
90% Chebyshev(Mean, Sd) UCL	68.67	95% Chebyshev(Mean, Sd) UCL	84.54
97.5% Chebyshev(Mean, Sd) UCL	106.6	99% Chebyshev(Mean, Sd) UCL	149.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.24	Mean	42.51
Maximum	125	Median	29.1
SD	44.04	Std. Error of Mean	14.68
Coefficient of Variation	1.036	Skewness	0.978
Mean of logged Data	3.005	SD of logged Data	1.489

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	69.81	95% Adjusted-CLT UCL (Chen-1995)	71.77
		95% Modified-t UCL (Johnson-1978)	70.61

Nonparametric Distribution Free UCLs

95% CLT UCL	66.66	95% Jackknife UCL	69.81
95% Standard Bootstrap UCL	64.87	95% Bootstrap-t UCL	82.21
95% Hall's Bootstrap UCL	77.5	95% Percentile Bootstrap UCL	66.1
95% BCA Bootstrap UCL	70.04		
90% Chebyshev(Mean, Sd) UCL	86.55	95% Chebyshev(Mean, Sd) UCL	106.5
97.5% Chebyshev(Mean, Sd) UCL	134.2	99% Chebyshev(Mean, Sd) UCL	188.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.24	Mean	26.47
Maximum	79.5	Median	17.1
SD	27.51	Std. Error of Mean	9.17
Coefficient of Variation	1.039	Skewness	1.098
Mean of logged Data	2.659	SD of logged Data	1.275

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.53	95% Adjusted-CLT UCL (Chen-1995)	45.14
		95% Modified-t UCL (Johnson-1978)	44.09

Nonparametric Distribution Free UCLs

95% CLT UCL	41.56	95% Jackknife UCL	43.53

95% Standard Bootstrap UCL	40.69	95% Bootstrap-t UCL	52.66
95% Hall's Bootstrap UCL	46.7	95% Percentile Bootstrap UCL	41.94
95% BCA Bootstrap UCL	43.88		
90% Chebyshev(Mean, Sd) UCL	53.99	95% Chebyshev(Mean, Sd) UCL	66.45
97.5% Chebyshev(Mean, Sd) UCL	83.74	99% Chebyshev(Mean, Sd) UCL	117.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.105	Mean	17.24
Maximum	48.9	Median	12.8
SD	16.77	Std. Error of Mean	5.591
Coefficient of Variation	0.973	Skewness	0.965
Mean of logged Data	2.268	SD of logged Data	1.261

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.64	95% Adjusted-CLT UCL (Chen-1995)	28.36
		95% Modified-t UCL (Johnson-1978)	27.94

Nonparametric Distribution Free UCLs

95% CLT UCL	26.44	95% Jackknife UCL	27.64
95% Standard Bootstrap UCL	25.99	95% Bootstrap-t UCL	32.85
95% Hall's Bootstrap UCL	31.11	95% Percentile Bootstrap UCL	27
95% BCA Bootstrap UCL	28.03		
90% Chebyshev(Mean, Sd) UCL	34.01	95% Chebyshev(Mean, Sd) UCL	41.61
97.5% Chebyshev(Mean, Sd) UCL	52.16	99% Chebyshev(Mean, Sd) UCL	72.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.105	Mean	32.37
Maximum	91.6	Median	22.6
SD	32.62	Std. Error of Mean	10.87
Coefficient of Variation	1.008	Skewness	0.859
Mean of logged Data	2.7	SD of logged Data	1.562

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.59	95% Adjusted-CLT UCL (Chen-1995)	53.59
		95% Modified-t UCL (Johnson-1978)	53.11

Nonparametric Distribution Free UCLs

95% CLT UCL	50.26	95% Jackknife UCL	52.59
95% Standard Bootstrap UCL	49.28	95% Bootstrap-t UCL	57.91
95% Hall's Bootstrap UCL	56.24	95% Percentile Bootstrap UCL	50.14
95% BCA Bootstrap UCL	51.91		
90% Chebyshev(Mean, Sd) UCL	65	95% Chebyshev(Mean, Sd) UCL	79.77
97.5% Chebyshev(Mean, Sd) UCL	100.3	99% Chebyshev(Mean, Sd) UCL	140.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.8	Mean	7.433
Maximum	18.7	Median	4.75
SD	5.701	Std. Error of Mean	1.9
Coefficient of Variation	0.767	Skewness	1.171
Mean of logged Data	1.766	SD of logged Data	0.715

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.97	95% Adjusted-CLT UCL (Chen-1995)	11.35
		95% Modified-t UCL (Johnson-1978)	11.09

Nonparametric Distribution Free UCLs

95% CLT UCL	10.56	95% Jackknife UCL	10.97
95% Standard Bootstrap UCL	10.34	95% Bootstrap-t UCL	12.78
95% Hall's Bootstrap UCL	10.42	95% Percentile Bootstrap UCL	10.55
95% BCA Bootstrap UCL	11.08		
90% Chebyshev(Mean, Sd) UCL	13.13	95% Chebyshev(Mean, Sd) UCL	15.72
97.5% Chebyshev(Mean, Sd) UCL	19.3	99% Chebyshev(Mean, Sd) UCL	26.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.105	Mean	36.48
Maximum	108	Median	25.6
SD	38.34	Std. Error of Mean	12.78
Coefficient of Variation	1.051	Skewness	1.01
Mean of logged Data	2.771	SD of logged Data	1.617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	60.25	95% Adjusted-CLT UCL (Chen-1995)	62.1
		95% Modified-t UCL (Johnson-1978)	60.97

Nonparametric Distribution Free UCLs

95% CLT UCL	57.51	95% Jackknife UCL	60.25
95% Standard Bootstrap UCL	56.22	95% Bootstrap-t UCL	76.26
95% Hall's Bootstrap UCL	80.88	95% Percentile Bootstrap UCL	56.56
95% BCA Bootstrap UCL	60.01		
90% Chebyshev(Mean, Sd) UCL	74.82	95% Chebyshev(Mean, Sd) UCL	92.19
97.5% Chebyshev(Mean, Sd) UCL	116.3	99% Chebyshev(Mean, Sd) UCL	163.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.31	Mean	2.702
Maximum	5.25	Median	1.54
SD	1.89	Std. Error of Mean	0.63
Coefficient of Variation	0.699	Skewness	0.844
Mean of logged Data	0.793	SD of logged Data	0.648

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.873	95% Adjusted-CLT UCL (Chen-1995)	3.927
		95% Modified-t UCL (Johnson-1978)	3.902

Nonparametric Distribution Free UCLs

95% CLT UCL	3.738	95% Jackknife UCL	3.873
95% Standard Bootstrap UCL	3.689	95% Bootstrap-t UCL	3.995
95% Hall's Bootstrap UCL	3.296	95% Percentile Bootstrap UCL	3.588
95% BCA Bootstrap UCL	3.953		
90% Chebyshev(Mean, Sd) UCL	4.591	95% Chebyshev(Mean, Sd) UCL	5.447
97.5% Chebyshev(Mean, Sd) UCL	6.635	99% Chebyshev(Mean, Sd) UCL	8.969

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.447

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.24	Mean	29.46
Maximum	88.8	Median	21.1
SD	30.68	Std. Error of Mean	10.23
Coefficient of Variation	1.041	Skewness	1.126
Mean of logged Data	2.742	SD of logged Data	1.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.48	95% Adjusted-CLT UCL (Chen-1995)	50.39
		95% Modified-t UCL (Johnson-1978)	49.12

Nonparametric Distribution Free UCLs

95% CLT UCL	46.29	95% Jackknife UCL	48.48
95% Standard Bootstrap UCL	45.43	95% Bootstrap-t UCL	62.01
95% Hall's Bootstrap UCL	67.75	95% Percentile Bootstrap UCL	45.95
95% BCA Bootstrap UCL	48.71		
90% Chebyshev(Mean, Sd) UCL	60.15	95% Chebyshev(Mean, Sd) UCL	74.05
97.5% Chebyshev(Mean, Sd) UCL	93.34	99% Chebyshev(Mean, Sd) UCL	131.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.93	Mean	10.74
Maximum	17	Median	10.9
SD	4.103	Std. Error of Mean	1.368
Coefficient of Variation	0.382	Skewness	-0.0301
Mean of logged Data	2.295	SD of logged Data	0.447

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	12.97
		95% Modified-t UCL (Johnson-1978)	13.28

Nonparametric Distribution Free UCLs

95% CLT UCL	12.99	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	12.87	95% Bootstrap-t UCL	13.27
95% Hall's Bootstrap UCL	13.64	95% Percentile Bootstrap UCL	12.82
95% BCA Bootstrap UCL	12.74		
90% Chebyshev(Mean, Sd) UCL	14.84	95% Chebyshev(Mean, Sd) UCL	16.7
97.5% Chebyshev(Mean, Sd) UCL	19.28	99% Chebyshev(Mean, Sd) UCL	24.35

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.24	Mean	16.74
Maximum	47.4	Median	11
SD	16.06	Std. Error of Mean	5.355
Coefficient of Variation	0.96	Skewness	1.164
Mean of logged Data	2.364	SD of logged Data	1.049

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.7	95% Adjusted-CLT UCL (Chen-1995)	27.77
		95% Modified-t UCL (Johnson-1978)	27.04

Nonparametric Distribution Free UCLs

95% CLT UCL	25.55	95% Jackknife UCL	26.7
95% Standard Bootstrap UCL	25.11	95% Bootstrap-t UCL	35.22
95% Hall's Bootstrap UCL	40.55	95% Percentile Bootstrap UCL	25.67
95% BCA Bootstrap UCL	27.12		
90% Chebyshev(Mean, Sd) UCL	32.8	95% Chebyshev(Mean, Sd) UCL	40.08
97.5% Chebyshev(Mean, Sd) UCL	50.18	99% Chebyshev(Mean, Sd) UCL	70.02

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.24	Mean	37.35
Maximum	106	Median	26.5
SD	37.59	Std. Error of Mean	12.53
Coefficient of Variation	1.006	Skewness	0.948
Mean of logged Data	2.932	SD of logged Data	1.423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.66	95% Adjusted-CLT UCL (Chen-1995)	62.2
		95% Modified-t UCL (Johnson-1978)	61.32

Nonparametric Distribution Free UCLs

95% CLT UCL	57.97	95% Jackknife UCL	60.66
95% Standard Bootstrap UCL	56.79	95% Bootstrap-t UCL	75.19
95% Hall's Bootstrap UCL	70.81	95% Percentile Bootstrap UCL	57.72
95% BCA Bootstrap UCL	59.2		
90% Chebyshev(Mean, Sd) UCL	74.95	95% Chebyshev(Mean, Sd) UCL	91.98
97.5% Chebyshev(Mean, Sd) UCL	115.6	99% Chebyshev(Mean, Sd) UCL	162

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0

Minimum	14.3	Mean	15.97
Maximum	24.3	Median	15.1
SD	3.17	Std. Error of Mean	1.057
Coefficient of Variation	0.199	Skewness	2.842
Mean of logged Data	2.757	SD of logged Data	0.166

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.93	95% Adjusted-CLT UCL (Chen-1995)	18.77
		95% Modified-t UCL (Johnson-1978)	18.1

Nonparametric Distribution Free UCLs

95% CLT UCL	17.7	95% Jackknife UCL	17.93
95% Standard Bootstrap UCL	17.55	95% Bootstrap-t UCL	24.8
95% Hall's Bootstrap UCL	25.67	95% Percentile Bootstrap UCL	17.96
95% BCA Bootstrap UCL	19.06		
90% Chebyshev(Mean, Sd) UCL	19.14	95% Chebyshev(Mean, Sd) UCL	20.57
97.5% Chebyshev(Mean, Sd) UCL	22.57	99% Chebyshev(Mean, Sd) UCL	26.48

Suggested UCL to Use

95% Student's-t UCL	17.93	or 95% Modified-t UCL	18.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.4	Mean	39.73
Maximum	70.4	Median	41.5
SD	25.19	Std. Error of Mean	8.397
Coefficient of Variation	0.634	Skewness	-0.0396
Mean of logged Data	3.438	SD of logged Data	0.797

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	55.35	95% Adjusted-CLT UCL (Chen-1995)	53.43
		95% Modified-t UCL (Johnson-1978)	55.33

Nonparametric Distribution Free UCLs

95% CLT UCL	53.55	95% Jackknife UCL	55.35
95% Standard Bootstrap UCL	53.01	95% Bootstrap-t UCL	55.36
95% Hall's Bootstrap UCL	50.45	95% Percentile Bootstrap UCL	52.39
95% BCA Bootstrap UCL	51.97		
90% Chebyshev(Mean, Sd) UCL	64.93	95% Chebyshev(Mean, Sd) UCL	76.34
97.5% Chebyshev(Mean, Sd) UCL	92.18	99% Chebyshev(Mean, Sd) UCL	123.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	46.9	Mean	53.73
Maximum	64.7	Median	49.3
SD	7.793	Std. Error of Mean	2.598
Coefficient of Variation	0.145	Skewness	0.824
Mean of logged Data	3.975	SD of logged Data	0.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	58.56	95% Adjusted-CLT UCL (Chen-1995)	58.77
		95% Modified-t UCL (Johnson-1978)	58.68

Nonparametric Distribution Free UCLs

95% CLT UCL	58.01	95% Jackknife UCL	58.56
95% Standard Bootstrap UCL	57.75	95% Bootstrap-t UCL	59.27
95% Hall's Bootstrap UCL	56.34	95% Percentile Bootstrap UCL	57.49
95% BCA Bootstrap UCL	58.88		
90% Chebyshev(Mean, Sd) UCL	61.53	95% Chebyshev(Mean, Sd) UCL	65.06
97.5% Chebyshev(Mean, Sd) UCL	69.96	99% Chebyshev(Mean, Sd) UCL	79.58

Suggested UCL to Use

95% Student's-t UCL	58.56	or 95% Modified-t UCL	58.68

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 6:15:41 PM
From File	Table 1. Parcel Analytical Results (Kingman APN 32404665) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.789	Mean	1.739
Maximum	6.82	Median	0.96
SD	1.949	Std. Error of Mean	0.65
Coefficient of Variation	1.121	Skewness	2.764
Mean of logged Data	0.252	SD of logged Data	0.701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.947	95% Adjusted-CLT UCL (Chen-1995)	3.447
		95% Modified-t UCL (Johnson-1978)	3.047

Nonparametric Distribution Free UCLs

95% CLT UCL	2.807	95% Jackknife UCL	2.947
95% Standard Bootstrap UCL	2.755	95% Bootstrap-t UCL	8.882
95% Hall's Bootstrap UCL	8.004	95% Percentile Bootstrap UCL	2.978
95% BCA Bootstrap UCL	3.671		
90% Chebyshev(Mean, Sd) UCL	3.688	95% Chebyshev(Mean, Sd) UCL	4.571
97.5% Chebyshev(Mean, Sd) UCL	5.796	99% Chebyshev(Mean, Sd) UCL	8.203

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4.571

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	0.5	Mean	0.609
Maximum	1.24	Median	0.53
SD	0.238	Std. Error of Mean	0.0794
Coefficient of Variation	0.391	Skewness	2.922
Mean of logged Data	-0.541	SD of logged Data	0.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.757	95% Adjusted-CLT UCL (Chen-1995)	0.823
		95% Modified-t UCL (Johnson-1978)	0.77

Nonparametric Distribution Free UCLs

95% CLT UCL	0.74	95% Jackknife UCL	0.757
95% Standard Bootstrap UCL	0.733	95% Bootstrap-t UCL	2.264
95% Hall's Bootstrap UCL	1.584	95% Percentile Bootstrap UCL	0.763
95% BCA Bootstrap UCL	0.844		
90% Chebyshev(Mean, Sd) UCL	0.848	95% Chebyshev(Mean, Sd) UCL	0.955
97.5% Chebyshev(Mean, Sd) UCL	1.105	99% Chebyshev(Mean, Sd) UCL	1.399

Suggested UCL to Use

95% Student's-t UCL	0.757	or 95% Modified-t UCL	0.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	2.908
Maximum	9.21	Median	2.115
SD	2.365	Std. Error of Mean	0.788
Coefficient of Variation	0.813	Skewness	2.991
Mean of logged Data	0.914	SD of logged Data	0.492

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	4.374	95% Adjusted-CLT UCL (Chen-1995)	5.044
		95% Modified-t UCL (Johnson-1978)	4.505

Nonparametric Distribution Free UCLs

95% CLT UCL	4.205	95% Jackknife UCL	4.374
95% Standard Bootstrap UCL	4.152	95% Bootstrap-t UCL	42.78
95% Hall's Bootstrap UCL	19.37	95% Percentile Bootstrap UCL	4.461
95% BCA Bootstrap UCL	5.262		
90% Chebyshev(Mean, Sd) UCL	5.273	95% Chebyshev(Mean, Sd) UCL	6.344
97.5% Chebyshev(Mean, Sd) UCL	7.831	99% Chebyshev(Mean, Sd) UCL	10.75

Suggested UCL to Use

95% Student's-t UCL	4.374	or 95% Modified-t UCL	4.505

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	10.57
Maximum	46.1	Median	4.65
SD	14.14	Std. Error of Mean	4.713
Coefficient of Variation	1.337	Skewness	2.44
Mean of logged Data	1.818	SD of logged Data	1.014

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	19.34	95% Adjusted-CLT UCL (Chen-1995)	22.42
		95% Modified-t UCL (Johnson-1978)	19.98

Nonparametric Distribution Free UCLs

95% CLT UCL	18.32	95% Jackknife UCL	19.34
95% Standard Bootstrap UCL	17.91	95% Bootstrap-t UCL	45.43
95% Hall's Bootstrap UCL	47	95% Percentile Bootstrap UCL	18.95
95% BCA Bootstrap UCL	22.76		
90% Chebyshev(Mean, Sd) UCL	24.71	95% Chebyshev(Mean, Sd) UCL	31.12
97.5% Chebyshev(Mean, Sd) UCL	40.01	99% Chebyshev(Mean, Sd) UCL	57.47

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.8	Mean	13.28
Maximum	54	Median	6.17
SD	16.68	Std. Error of Mean	5.559
Coefficient of Variation	1.255	Skewness	2.198
Mean of logged Data	2.021	SD of logged Data	1.102

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.62	95% Adjusted-CLT UCL (Chen-1995)	26.78
		95% Modified-t UCL (Johnson-1978)	24.3

Nonparametric Distribution Free UCLs

95% CLT UCL	22.43	95% Jackknife UCL	23.62
95% Standard Bootstrap UCL	22.01	95% Bootstrap-t UCL	39.8
95% Hall's Bootstrap UCL	53.79	95% Percentile Bootstrap UCL	23.59
95% BCA Bootstrap UCL	27.67		
90% Chebyshev(Mean, Sd) UCL	29.96	95% Chebyshev(Mean, Sd) UCL	37.51
97.5% Chebyshev(Mean, Sd) UCL	48	99% Chebyshev(Mean, Sd) UCL	68.59

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	18.54
Maximum	76.7	Median	8.38
SD	23.54	Std. Error of Mean	7.846
Coefficient of Variation	1.27	Skewness	2.292
Mean of logged Data	2.379	SD of logged Data	1.053

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.13	95% Adjusted-CLT UCL (Chen-1995)	37.85
		95% Modified-t UCL (Johnson-1978)	34.13

Nonparametric Distribution Free UCLs

95% CLT UCL	31.44	95% Jackknife UCL	33.13
95% Standard Bootstrap UCL	30.49	95% Bootstrap-t UCL	61.12
95% Hall's Bootstrap UCL	76.25	95% Percentile Bootstrap UCL	32.37
95% BCA Bootstrap UCL	39.94		
90% Chebyshev(Mean, Sd) UCL	42.08	95% Chebyshev(Mean, Sd) UCL	52.74
97.5% Chebyshev(Mean, Sd) UCL	67.54	99% Chebyshev(Mean, Sd) UCL	96.61

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	11.02
Maximum	43	Median	5.1
SD	12.84	Std. Error of Mean	4.279
Coefficient of Variation	1.165	Skewness	2.36
Mean of logged Data	1.994	SD of logged Data	0.87

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.98	95% Adjusted-CLT UCL (Chen-1995)	21.65
		95% Modified-t UCL (Johnson-1978)	19.54

Nonparametric Distribution Free UCLs

95% CLT UCL	18.06	95% Jackknife UCL	18.98

95% Standard Bootstrap UCL	17.64	95% Bootstrap-t UCL	34.24
95% Hall's Bootstrap UCL	40.73	95% Percentile Bootstrap UCL	18.12
95% BCA Bootstrap UCL	22.1		
90% Chebyshev(Mean, Sd) UCL	23.86	95% Chebyshev(Mean, Sd) UCL	29.67
97.5% Chebyshev(Mean, Sd) UCL	37.74	99% Chebyshev(Mean, Sd) UCL	53.59

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	7.994
Maximum	31.2	Median	4.11
SD	9.267	Std. Error of Mean	3.089
Coefficient of Variation	1.159	Skewness	2.398
Mean of logged Data	1.675	SD of logged Data	0.877

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.74	95% Adjusted-CLT UCL (Chen-1995)	15.71
		95% Modified-t UCL (Johnson-1978)	14.15

Nonparametric Distribution Free UCLs

95% CLT UCL	13.08	95% Jackknife UCL	13.74
95% Standard Bootstrap UCL	12.79	95% Bootstrap-t UCL	26.13
95% Hall's Bootstrap UCL	30.75	95% Percentile Bootstrap UCL	13.43
95% BCA Bootstrap UCL	15.77		
90% Chebyshev(Mean, Sd) UCL	17.26	95% Chebyshev(Mean, Sd) UCL	21.46
97.5% Chebyshev(Mean, Sd) UCL	27.28	99% Chebyshev(Mean, Sd) UCL	38.73

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.02	Mean	13.22
Maximum	52.7	Median	6.26
SD	16.25	Std. Error of Mean	5.417
Coefficient of Variation	1.229	Skewness	2.175
Mean of logged Data	2.047	SD of logged Data	1.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.3	95% Adjusted-CLT UCL (Chen-1995)	26.33
		95% Modified-t UCL (Johnson-1978)	23.95

Nonparametric Distribution Free UCLs

95% CLT UCL	22.13	95% Jackknife UCL	23.3
95% Standard Bootstrap UCL	21.41	95% Bootstrap-t UCL	42.31
95% Hall's Bootstrap UCL	55.69	95% Percentile Bootstrap UCL	22.87
95% BCA Bootstrap UCL	27.65		
90% Chebyshev(Mean, Sd) UCL	29.47	95% Chebyshev(Mean, Sd) UCL	36.84
97.5% Chebyshev(Mean, Sd) UCL	47.05	99% Chebyshev(Mean, Sd) UCL	67.12

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	4.272
Maximum	11.1	Median	3.305
SD	2.593	Std. Error of Mean	0.864
Coefficient of Variation	0.607	Skewness	2.868
Mean of logged Data	1.354	SD of logged Data	0.409

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.879	95% Adjusted-CLT UCL (Chen-1995)	6.576
		95% Modified-t UCL (Johnson-1978)	6.017

Nonparametric Distribution Free UCLs

95% CLT UCL	5.693	95% Jackknife UCL	5.879
95% Standard Bootstrap UCL	5.591	95% Bootstrap-t UCL	33.21
95% Hall's Bootstrap UCL	16.17	95% Percentile Bootstrap UCL	5.886
95% BCA Bootstrap UCL	6.767		
90% Chebyshev(Mean, Sd) UCL	6.865	95% Chebyshev(Mean, Sd) UCL	8.039
97.5% Chebyshev(Mean, Sd) UCL	9.669	99% Chebyshev(Mean, Sd) UCL	12.87

Suggested UCL to Use

95% Student's-t UCL	5.879	or 95% Modified-t UCL	6.017

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.12	Mean	18.92
Maximum	94.3	Median	7.5
SD	29.69	Std. Error of Mean	9.897
Coefficient of Variation	1.569	Skewness	2.522
Mean of logged Data	2.133	SD of logged Data	1.282

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	37.32	95% Adjusted-CLT UCL (Chen-1995)	44.09
		95% Modified-t UCL (Johnson-1978)	38.71

Nonparametric Distribution Free UCLs

95% CLT UCL	35.2	95% Jackknife UCL	37.32
95% Standard Bootstrap UCL	34.23	95% Bootstrap-t UCL	93.53
95% Hall's Bootstrap UCL	92.64	95% Percentile Bootstrap UCL	37.02
95% BCA Bootstrap UCL	45.14		
90% Chebyshev(Mean, Sd) UCL	48.61	95% Chebyshev(Mean, Sd) UCL	62.06
97.5% Chebyshev(Mean, Sd) UCL	80.72	99% Chebyshev(Mean, Sd) UCL	117.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.11	Mean	12.67
Maximum	50.2	Median	5.56
SD	15.12	Std. Error of Mean	5.039
Coefficient of Variation	1.193	Skewness	2.332
Mean of logged Data	2.1	SD of logged Data	0.915

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.04	95% Adjusted-CLT UCL (Chen-1995)	25.14
		95% Modified-t UCL (Johnson-1978)	22.69

Nonparametric Distribution Free UCLs

95% CLT UCL	20.95	95% Jackknife UCL	22.04
95% Standard Bootstrap UCL	20.59	95% Bootstrap-t UCL	39.82
95% Hall's Bootstrap UCL	48.07	95% Percentile Bootstrap UCL	21.35
95% BCA Bootstrap UCL	25.97		
90% Chebyshev(Mean, Sd) UCL	27.78	95% Chebyshev(Mean, Sd) UCL	34.63
97.5% Chebyshev(Mean, Sd) UCL	44.13	99% Chebyshev(Mean, Sd) UCL	62.8

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.96	Mean	2.71
Maximum	8.6	Median	1.15
SD	3.097	Std. Error of Mean	1.032
Coefficient of Variation	1.143	Skewness	1.617
Mean of logged Data	0.563	SD of logged Data	0.889

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.63	95% Adjusted-CLT UCL (Chen-1995)	5.003
		95% Modified-t UCL (Johnson-1978)	4.722

Nonparametric Distribution Free UCLs

95% CLT UCL	4.408	95% Jackknife UCL	4.63
95% Standard Bootstrap UCL	4.281	95% Bootstrap-t UCL	21.72
95% Hall's Bootstrap UCL	27.76	95% Percentile Bootstrap UCL	4.373
95% BCA Bootstrap UCL	5.037		
90% Chebyshev(Mean, Sd) UCL	5.807	95% Chebyshev(Mean, Sd) UCL	7.21
97.5% Chebyshev(Mean, Sd) UCL	9.157	99% Chebyshev(Mean, Sd) UCL	12.98

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.49	Mean	9.89
Maximum	47.5	Median	3.305
SD	14.66	Std. Error of Mean	4.887
Coefficient of Variation	1.482	Skewness	2.624
Mean of logged Data	1.713	SD of logged Data	0.988

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	18.98	95% Adjusted-CLT UCL (Chen-1995)	22.49
		95% Modified-t UCL (Johnson-1978)	19.69

Nonparametric Distribution Free UCLs

95% CLT UCL	17.93	95% Jackknife UCL	18.98
95% Standard Bootstrap UCL	17.39	95% Bootstrap-t UCL	65.53
95% Hall's Bootstrap UCL	67.22	95% Percentile Bootstrap UCL	19.01
95% BCA Bootstrap UCL	23.8		
90% Chebyshev(Mean, Sd) UCL	24.55	95% Chebyshev(Mean, Sd) UCL	31.19
97.5% Chebyshev(Mean, Sd) UCL	40.41	99% Chebyshev(Mean, Sd) UCL	58.51

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	31.19

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.14	Mean	17.32
Maximum	80.1	Median	7.34
SD	25.13	Std. Error of Mean	8.376
Coefficient of Variation	1.451	Skewness	2.394
Mean of logged Data	2.153	SD of logged Data	1.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	32.89	95% Adjusted-CLT UCL (Chen-1995)	38.24
		95% Modified-t UCL (Johnson-1978)	34.01

Nonparametric Distribution Free UCLs

95% CLT UCL	31.1	95% Jackknife UCL	32.89
95% Standard Bootstrap UCL	29.96	95% Bootstrap-t UCL	75.32
95% Hall's Bootstrap UCL	83.12	95% Percentile Bootstrap UCL	32.25
95% BCA Bootstrap UCL	39.16		
90% Chebyshev(Mean, Sd) UCL	42.45	95% Chebyshev(Mean, Sd) UCL	53.83
97.5% Chebyshev(Mean, Sd) UCL	69.63	99% Chebyshev(Mean, Sd) UCL	100.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	12	Mean	17.09
Maximum	22.8	Median	16.4
SD	3.361	Std. Error of Mean	1.12
Coefficient of Variation	0.197	Skewness	0.47
Mean of logged Data	2.821	SD of logged Data	0.196

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.17	95% Adjusted-CLT UCL (Chen-1995)	19.12
		95% Modified-t UCL (Johnson-1978)	19.2

Nonparametric Distribution Free UCLs

95% CLT UCL	18.93	95% Jackknife UCL	19.17
95% Standard Bootstrap UCL	18.77	95% Bootstrap-t UCL	19.68
95% Hall's Bootstrap UCL	20.2	95% Percentile Bootstrap UCL	18.93
95% BCA Bootstrap UCL	18.87		
90% Chebyshev(Mean, Sd) UCL	20.45	95% Chebyshev(Mean, Sd) UCL	21.97
97.5% Chebyshev(Mean, Sd) UCL	24.08	99% Chebyshev(Mean, Sd) UCL	28.23

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	41.5	Mean	51.99
Maximum	75.6	Median	45.8
SD	12.09	Std. Error of Mean	4.028
Coefficient of Variation	0.232	Skewness	1.162
Mean of logged Data	3.929	SD of logged Data	0.216

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.48	95% Adjusted-CLT UCL (Chen-1995)	60.28
		95% Modified-t UCL (Johnson-1978)	59.74

Nonparametric Distribution Free UCLs

95% CLT UCL	58.61	95% Jackknife UCL	59.48
95% Standard Bootstrap UCL	58.25	95% Bootstrap-t UCL	63.57
95% Hall's Bootstrap UCL	58.22	95% Percentile Bootstrap UCL	58.47
95% BCA Bootstrap UCL	59.63		
90% Chebyshev(Mean, Sd) UCL	64.07	95% Chebyshev(Mean, Sd) UCL	69.55
97.5% Chebyshev(Mean, Sd) UCL	77.15	99% Chebyshev(Mean, Sd) UCL	92.07

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:09:23 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404666) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.841	Mean	1.542
Maximum	3.16	Median	1.03
SD	0.838	Std. Error of Mean	0.279
Coefficient of Variation	0.544	Skewness	1.115
Mean of logged Data	0.317	SD of logged Data	0.494

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.062	95% Adjusted-CLT UCL (Chen-1995)	2.113
		95% Modified-t UCL (Johnson-1978)	2.079

Nonparametric Distribution Free UCLs

95% CLT UCL	2.002	95% Jackknife UCL	2.062
95% Standard Bootstrap UCL	1.981	95% Bootstrap-t UCL	2.313
95% Hall's Bootstrap UCL	1.959	95% Percentile Bootstrap UCL	1.999
95% BCA Bootstrap UCL	2.048		
90% Chebyshev(Mean, Sd) UCL	2.381	95% Chebyshev(Mean, Sd) UCL	2.761
97.5% Chebyshev(Mean, Sd) UCL	3.288	99% Chebyshev(Mean, Sd) UCL	4.323

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.299	Mean	0.895
Maximum	2.07	Median	0.614
SD	0.564	Std. Error of Mean	0.188
Coefficient of Variation	0.63	Skewness	1.192
Mean of logged Data	-0.278	SD of logged Data	0.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.244	95% Adjusted-CLT UCL (Chen-1995)	1.283
		95% Modified-t UCL (Johnson-1978)	1.256

Nonparametric Distribution Free UCLs

95% CLT UCL	1.204	95% Jackknife UCL	1.244
95% Standard Bootstrap UCL	1.187	95% Bootstrap-t UCL	1.368
95% Hall's Bootstrap UCL	1.31	95% Percentile Bootstrap UCL	1.197
95% BCA Bootstrap UCL	1.274		
90% Chebyshev(Mean, Sd) UCL	1.458	95% Chebyshev(Mean, Sd) UCL	1.713
97.5% Chebyshev(Mean, Sd) UCL	2.068	99% Chebyshev(Mean, Sd) UCL	2.764

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.89	Mean	4.611
Maximum	20.6	Median	2.12
SD	6.122	Std. Error of Mean	2.041
Coefficient of Variation	1.328	Skewness	2.788
Mean of logged Data	1.122	SD of logged Data	0.796

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	8.406	95% Adjusted-CLT UCL (Chen-1995)	9.994
		95% Modified-t UCL (Johnson-1978)	8.722

Nonparametric Distribution Free UCLs

95% CLT UCL	7.968	95% Jackknife UCL	8.406
95% Standard Bootstrap UCL	7.752	95% Bootstrap-t UCL	51.87
95% Hall's Bootstrap UCL	48.41	95% Percentile Bootstrap UCL	8.313
95% BCA Bootstrap UCL	10.42		
90% Chebyshev(Mean, Sd) UCL	10.73	95% Chebyshev(Mean, Sd) UCL	13.51
97.5% Chebyshev(Mean, Sd) UCL	17.36	99% Chebyshev(Mean, Sd) UCL	24.92

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 13.51

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	23.21
Maximum	105	Median	12.9
SD	32.71	Std. Error of Mean	10.9
Coefficient of Variation	1.409	Skewness	2.393
Mean of logged Data	2.408	SD of logged Data	1.311

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.49	95% Adjusted-CLT UCL (Chen-1995)	50.44
		95% Modified-t UCL (Johnson-1978)	44.94

Nonparametric Distribution Free UCLs

95% CLT UCL	41.15	95% Jackknife UCL	43.49
95% Standard Bootstrap UCL	40.02	95% Bootstrap-t UCL	99.18
95% Hall's Bootstrap UCL	128.7	95% Percentile Bootstrap UCL	41.9
95% BCA Bootstrap UCL	51.2		
90% Chebyshev(Mean, Sd) UCL	55.92	95% Chebyshev(Mean, Sd) UCL	70.74
97.5% Chebyshev(Mean, Sd) UCL	91.31	99% Chebyshev(Mean, Sd) UCL	131.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	28
Maximum	121	Median	15.5
SD	38.11	Std. Error of Mean	12.7
Coefficient of Variation	1.361	Skewness	2.216
Mean of logged Data	2.565	SD of logged Data	1.381

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	51.63	95% Adjusted-CLT UCL (Chen-1995)	58.93
		95% Modified-t UCL (Johnson-1978)	53.19

Nonparametric Distribution Free UCLs

95% CLT UCL	48.9	95% Jackknife UCL	51.63
95% Standard Bootstrap UCL	47.83	95% Bootstrap-t UCL	106.4
95% Hall's Bootstrap UCL	149.3	95% Percentile Bootstrap UCL	49.86
95% BCA Bootstrap UCL	55.75		
90% Chebyshev(Mean, Sd) UCL	66.11	95% Chebyshev(Mean, Sd) UCL	83.38
97.5% Chebyshev(Mean, Sd) UCL	107.3	99% Chebyshev(Mean, Sd) UCL	154.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	37.76
Maximum	172	Median	18
SD	54.81	Std. Error of Mean	18.27
Coefficient of Variation	1.451	Skewness	2.234
Mean of logged Data	2.741	SD of logged Data	1.463

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.74	95% Adjusted-CLT UCL (Chen-1995)	82.35
		95% Modified-t UCL (Johnson-1978)	74

Nonparametric Distribution Free UCLs

95% CLT UCL	67.81	95% Jackknife UCL	71.74
95% Standard Bootstrap UCL	65.3	95% Bootstrap-t UCL	132.3
95% Hall's Bootstrap UCL	196.1	95% Percentile Bootstrap UCL	68.94
95% BCA Bootstrap UCL	84.31		
90% Chebyshev(Mean, Sd) UCL	92.57	95% Chebyshev(Mean, Sd) UCL	117.4
97.5% Chebyshev(Mean, Sd) UCL	151.9	99% Chebyshev(Mean, Sd) UCL	219.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	24.11
Maximum	103	Median	10.2
SD	32.15	Std. Error of Mean	10.72
Coefficient of Variation	1.333	Skewness	2.249
Mean of logged Data	2.53	SD of logged Data	1.197

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.03	95% Adjusted-CLT UCL (Chen-1995)	50.32
		95% Modified-t UCL (Johnson-1978)	45.37

Nonparametric Distribution Free UCLs

95% CLT UCL	41.73	95% Jackknife UCL	44.03

95% Standard Bootstrap UCL	40.64	95% Bootstrap-t UCL	83.83
95% Hall's Bootstrap UCL	114.7	95% Percentile Bootstrap UCL	42.17
95% BCA Bootstrap UCL	50.05		
90% Chebyshev(Mean, Sd) UCL	56.25	95% Chebyshev(Mean, Sd) UCL	70.82
97.5% Chebyshev(Mean, Sd) UCL	91.03	99% Chebyshev(Mean, Sd) UCL	130.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	18.31
Maximum	71.3	Median	11.3
SD	22.15	Std. Error of Mean	7.383
Coefficient of Variation	1.21	Skewness	2.036
Mean of logged Data	2.27	SD of logged Data	1.255

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.04	95% Adjusted-CLT UCL (Chen-1995)	35.81
		95% Modified-t UCL (Johnson-1978)	32.87

Nonparametric Distribution Free UCLs

95% CLT UCL	30.45	95% Jackknife UCL	32.04
95% Standard Bootstrap UCL	29.85	95% Bootstrap-t UCL	50.73
95% Hall's Bootstrap UCL	86.96	95% Percentile Bootstrap UCL	30.33
95% BCA Bootstrap UCL	33.7		
90% Chebyshev(Mean, Sd) UCL	40.46	95% Chebyshev(Mean, Sd) UCL	50.49
97.5% Chebyshev(Mean, Sd) UCL	64.42	99% Chebyshev(Mean, Sd) UCL	91.77

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	32.18
Maximum	133	Median	18.8
SD	41.52	Std. Error of Mean	13.84
Coefficient of Variation	1.29	Skewness	2.155
Mean of logged Data	2.722	SD of logged Data	1.415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57.92	95% Adjusted-CLT UCL (Chen-1995)	65.57
		95% Modified-t UCL (Johnson-1978)	59.58

Nonparametric Distribution Free UCLs

95% CLT UCL	54.95	95% Jackknife UCL	57.92
95% Standard Bootstrap UCL	53.11	95% Bootstrap-t UCL	103
95% Hall's Bootstrap UCL	161.1	95% Percentile Bootstrap UCL	55.18
95% BCA Bootstrap UCL	64.67		
90% Chebyshev(Mean, Sd) UCL	73.7	95% Chebyshev(Mean, Sd) UCL	92.51
97.5% Chebyshev(Mean, Sd) UCL	118.6	99% Chebyshev(Mean, Sd) UCL	169.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	6.611
Maximum	24.4	Median	3.275
SD	7.024	Std. Error of Mean	2.341
Coefficient of Variation	1.063	Skewness	2.517
Mean of logged Data	1.588	SD of logged Data	0.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.96	95% Adjusted-CLT UCL (Chen-1995)	12.56
		95% Modified-t UCL (Johnson-1978)	11.29

Nonparametric Distribution Free UCLs

95% CLT UCL	10.46	95% Jackknife UCL	10.96
95% Standard Bootstrap UCL	10.3	95% Bootstrap-t UCL	30.76
95% Hall's Bootstrap UCL	27.37	95% Percentile Bootstrap UCL	10.8
95% BCA Bootstrap UCL	13.25		
90% Chebyshev(Mean, Sd) UCL	13.63	95% Chebyshev(Mean, Sd) UCL	16.82
97.5% Chebyshev(Mean, Sd) UCL	21.23	99% Chebyshev(Mean, Sd) UCL	29.91

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	44.34
Maximum	218	Median	19.6
SD	68.71	Std. Error of Mean	22.9
Coefficient of Variation	1.55	Skewness	2.485
Mean of logged Data	2.858	SD of logged Data	1.534

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	86.93	95% Adjusted-CLT UCL (Chen-1995)	102.3
		95% Modified-t UCL (Johnson-1978)	90.09

Nonparametric Distribution Free UCLs

95% CLT UCL	82.01	95% Jackknife UCL	86.93
95% Standard Bootstrap UCL	80.09	95% Bootstrap-t UCL	220.8
95% Hall's Bootstrap UCL	251.6	95% Percentile Bootstrap UCL	85.71
95% BCA Bootstrap UCL	102.5		
90% Chebyshev(Mean, Sd) UCL	113	95% Chebyshev(Mean, Sd) UCL	144.2
97.5% Chebyshev(Mean, Sd) UCL	187.4	99% Chebyshev(Mean, Sd) UCL	272.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.205	Mean	1.358
Maximum	1.87	Median	1.305
SD	0.207	Std. Error of Mean	0.069
Coefficient of Variation	0.152	Skewness	2.273
Mean of logged Data	0.297	SD of logged Data	0.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.486	95% Adjusted-CLT UCL (Chen-1995)	1.527
		95% Modified-t UCL (Johnson-1978)	1.495

Nonparametric Distribution Free UCLs

95% CLT UCL	1.471	95% Jackknife UCL	1.486
95% Standard Bootstrap UCL	1.466	95% Bootstrap-t UCL	1.666
95% Hall's Bootstrap UCL	1.92	95% Percentile Bootstrap UCL	1.481
95% BCA Bootstrap UCL	1.541		
90% Chebyshev(Mean, Sd) UCL	1.565	95% Chebyshev(Mean, Sd) UCL	1.659
97.5% Chebyshev(Mean, Sd) UCL	1.789	99% Chebyshev(Mean, Sd) UCL	2.044

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.1	Mean	24.41
Maximum	103	Median	11.5
SD	32.03	Std. Error of Mean	10.68
Coefficient of Variation	1.312	Skewness	2.246
Mean of logged Data	2.559	SD of logged Data	1.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.26	95% Adjusted-CLT UCL (Chen-1995)	50.51
		95% Modified-t UCL (Johnson-1978)	45.6

Nonparametric Distribution Free UCLs

95% CLT UCL	41.97	95% Jackknife UCL	44.26
95% Standard Bootstrap UCL	40.76	95% Bootstrap-t UCL	82.69
95% Hall's Bootstrap UCL	118.1	95% Percentile Bootstrap UCL	42.48
95% BCA Bootstrap UCL	50.55		
90% Chebyshev(Mean, Sd) UCL	56.44	95% Chebyshev(Mean, Sd) UCL	70.95
97.5% Chebyshev(Mean, Sd) UCL	91.08	99% Chebyshev(Mean, Sd) UCL	130.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.965	Mean	3.526
Maximum	8.75	Median	2.43
SD	2.6	Std. Error of Mean	0.867
Coefficient of Variation	0.737	Skewness	1.21
Mean of logged Data	1.031	SD of logged Data	0.717

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	5.138	95% Adjusted-CLT UCL (Chen-1995)	5.325
		95% Modified-t UCL (Johnson-1978)	5.196

Nonparametric Distribution Free UCLs

95% CLT UCL	4.952	95% Jackknife UCL	5.138
95% Standard Bootstrap UCL	4.885	95% Bootstrap-t UCL	6.254
95% Hall's Bootstrap UCL	5.353	95% Percentile Bootstrap UCL	4.934
95% BCA Bootstrap UCL	5.126		
90% Chebyshev(Mean, Sd) UCL	6.127	95% Chebyshev(Mean, Sd) UCL	7.305
97.5% Chebyshev(Mean, Sd) UCL	8.939	99% Chebyshev(Mean, Sd) UCL	12.15

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.23	Mean	21.89
Maximum	110	Median	8.55
SD	34.37	Std. Error of Mean	11.46
Coefficient of Variation	1.57	Skewness	2.608
Mean of logged Data	2.326	SD of logged Data	1.235

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.19	95% Adjusted-CLT UCL (Chen-1995)	51.38
		95% Modified-t UCL (Johnson-1978)	44.85

Nonparametric Distribution Free UCLs

95% CLT UCL	40.73	95% Jackknife UCL	43.19
95% Standard Bootstrap UCL	39.65	95% Bootstrap-t UCL	120.7
95% Hall's Bootstrap UCL	118.3	95% Percentile Bootstrap UCL	42.18
95% BCA Bootstrap UCL	54.77		
90% Chebyshev(Mean, Sd) UCL	56.26	95% Chebyshev(Mean, Sd) UCL	71.82
97.5% Chebyshev(Mean, Sd) UCL	93.43	99% Chebyshev(Mean, Sd) UCL	135.9

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	41.78
Maximum	190	Median	18.7
SD	59.81	Std. Error of Mean	19.94
Coefficient of Variation	1.432	Skewness	2.329
Mean of logged Data	2.933	SD of logged Data	1.382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.86	95% Adjusted-CLT UCL (Chen-1995)	91.11
		95% Modified-t UCL (Johnson-1978)	81.43

Nonparametric Distribution Free UCLs

95% CLT UCL	74.58	95% Jackknife UCL	78.86
95% Standard Bootstrap UCL	72.66	95% Bootstrap-t UCL	179.7
95% Hall's Bootstrap UCL	221.9	95% Percentile Bootstrap UCL	77.04
95% BCA Bootstrap UCL	89.38		
90% Chebyshev(Mean, Sd) UCL	101.6	95% Chebyshev(Mean, Sd) UCL	128.7
97.5% Chebyshev(Mean, Sd) UCL	166.3	99% Chebyshev(Mean, Sd) UCL	240.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.7	Mean	14.92
Maximum	30	Median	11.4
SD	7.052	Std. Error of Mean	2.351
Coefficient of Variation	0.473	Skewness	1.744
Mean of logged Data	2.626	SD of logged Data	0.387

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.29	95% Adjusted-CLT UCL (Chen-1995)	20.25
		95% Modified-t UCL (Johnson-1978)	19.52

Nonparametric Distribution Free UCLs

95% CLT UCL	18.79	95% Jackknife UCL	19.29
95% Standard Bootstrap UCL	18.53	95% Bootstrap-t UCL	40.27
95% Hall's Bootstrap UCL	49.42	95% Percentile Bootstrap UCL	18.74
95% BCA Bootstrap UCL	20.57		
90% Chebyshev(Mean, Sd) UCL	21.97	95% Chebyshev(Mean, Sd) UCL	25.17
97.5% Chebyshev(Mean, Sd) UCL	29.6	99% Chebyshev(Mean, Sd) UCL	38.31

Suggested UCL to Use

95% Student's-t UCL	19.29	or 95% Modified-t UCL	19.52

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	7.65	Mean	13.95
Maximum	19.1	Median	14.9
SD	4.24	Std. Error of Mean	1.413
Coefficient of Variation	0.304	Skewness	-0.304
Mean of logged Data	2.589	SD of logged Data	0.335

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.58	95% Adjusted-CLT UCL (Chen-1995)	16.12
		95% Modified-t UCL (Johnson-1978)	16.55

Nonparametric Distribution Free UCLs

95% CLT UCL	16.27	95% Jackknife UCL	16.58

95% Standard Bootstrap UCL	16.21	95% Bootstrap-t UCL	16.43
95% Hall's Bootstrap UCL	16	95% Percentile Bootstrap UCL	16.06
95% BCA Bootstrap UCL	16.12		
90% Chebyshev(Mean, Sd) UCL	18.19	95% Chebyshev(Mean, Sd) UCL	20.11
97.5% Chebyshev(Mean, Sd) UCL	22.78	99% Chebyshev(Mean, Sd) UCL	28.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	37.6	Mean	57.72
Maximum	97	Median	43.9
SD	24.48	Std. Error of Mean	8.16
Coefficient of Variation	0.424	Skewness	0.895
Mean of logged Data	3.983	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	72.9	95% Adjusted-CLT UCL (Chen-1995)	73.75
		95% Modified-t UCL (Johnson-1978)	73.3

Nonparametric Distribution Free UCLs

95% CLT UCL	71.14	95% Jackknife UCL	72.9
95% Standard Bootstrap UCL	70.56	95% Bootstrap-t UCL	77.02
95% Hall's Bootstrap UCL	66.65	95% Percentile Bootstrap UCL	70.5
95% BCA Bootstrap UCL	73.03		
90% Chebyshev(Mean, Sd) UCL	82.2	95% Chebyshev(Mean, Sd) UCL	93.29
97.5% Chebyshev(Mean, Sd) UCL	108.7	99% Chebyshev(Mean, Sd) UCL	138.9

Suggested UCL to Use

95% Student's-t UCL	72.9	or 95% Modified-t UCL	73.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:40:29 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32404688) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.837	Mean	1.346
Maximum	2	Median	1.04
SD	0.49	Std. Error of Mean	0.163
Coefficient of Variation	0.364	Skewness	0.522
Mean of logged Data	0.239	SD of logged Data	0.356

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.649	95% Adjusted-CLT UCL (Chen-1995)	1.645
		95% Modified-t UCL (Johnson-1978)	1.654

Nonparametric Distribution Free UCLs

95% CLT UCL	1.614	95% Jackknife UCL	1.649
95% Standard Bootstrap UCL	1.602	95% Bootstrap-t UCL	1.719
95% Hall's Bootstrap UCL	1.546	95% Percentile Bootstrap UCL	1.611
95% BCA Bootstrap UCL	1.628		
90% Chebyshev(Mean, Sd) UCL	1.836	95% Chebyshev(Mean, Sd) UCL	2.057
97.5% Chebyshev(Mean, Sd) UCL	2.366	99% Chebyshev(Mean, Sd) UCL	2.971

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.458	Mean	2.013
Maximum	6.42	Median	0.682
SD	2.07	Std. Error of Mean	0.69
Coefficient of Variation	1.028	Skewness	1.367
Mean of logged Data	0.217	SD of logged Data	1.045

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.296	95% Adjusted-CLT UCL (Chen-1995)	3.483
		95% Modified-t UCL (Johnson-1978)	3.348

Nonparametric Distribution Free UCLs

95% CLT UCL	3.147	95% Jackknife UCL	3.296
95% Standard Bootstrap UCL	3.09	95% Bootstrap-t UCL	3.946
95% Hall's Bootstrap UCL	3.743	95% Percentile Bootstrap UCL	3.135
95% BCA Bootstrap UCL	3.404		
90% Chebyshev(Mean, Sd) UCL	4.082	95% Chebyshev(Mean, Sd) UCL	5.02
97.5% Chebyshev(Mean, Sd) UCL	6.321	99% Chebyshev(Mean, Sd) UCL	8.877

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.64	Mean	11.39
Maximum	58.8	Median	2.11
SD	18.38	Std. Error of Mean	6.126
Coefficient of Variation	1.614	Skewness	2.651
Mean of logged Data	1.628	SD of logged Data	1.252

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	22.78	95% Adjusted-CLT UCL (Chen-1995)	27.25
		95% Modified-t UCL (Johnson-1978)	23.68

Nonparametric Distribution Free UCLs

95% CLT UCL	21.46	95% Jackknife UCL	22.78
95% Standard Bootstrap UCL	20.91	95% Bootstrap-t UCL	49.18
95% Hall's Bootstrap UCL	58.96	95% Percentile Bootstrap UCL	22.69
95% BCA Bootstrap UCL	29.52		
90% Chebyshev(Mean, Sd) UCL	29.76	95% Chebyshev(Mean, Sd) UCL	38.09
97.5% Chebyshev(Mean, Sd) UCL	49.64	99% Chebyshev(Mean, Sd) UCL	72.34

Suggested UCL to Use

95% Hall's Bootstrap UCL	58.96

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	73.28
Maximum	279	Median	20.4
SD	92.54	Std. Error of Mean	30.85
Coefficient of Variation	1.263	Skewness	1.554
Mean of logged Data	3.212	SD of logged Data	1.823

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	130.6	95% Adjusted-CLT UCL (Chen-1995)	141.1
		95% Modified-t UCL (Johnson-1978)	133.3

Nonparametric Distribution Free UCLs

95% CLT UCL	124	95% Jackknife UCL	130.6
95% Standard Bootstrap UCL	121.8	95% Bootstrap-t UCL	173.1
95% Hall's Bootstrap UCL	185.7	95% Percentile Bootstrap UCL	124.4
95% BCA Bootstrap UCL	137.5		
90% Chebyshev(Mean, Sd) UCL	165.8	95% Chebyshev(Mean, Sd) UCL	207.7
97.5% Chebyshev(Mean, Sd) UCL	265.9	99% Chebyshev(Mean, Sd) UCL	380.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	84.17
Maximum	278	Median	26.7
SD	97.57	Std. Error of Mean	32.52
Coefficient of Variation	1.159	Skewness	1.049
Mean of logged Data	3.308	SD of logged Data	1.928

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	144.6	95% Adjusted-CLT UCL (Chen-1995)	149.8
		95% Modified-t UCL (Johnson-1978)	146.5

Nonparametric Distribution Free UCLs

95% CLT UCL	137.7	95% Jackknife UCL	144.6
95% Standard Bootstrap UCL	134.5	95% Bootstrap-t UCL	174.1
95% Hall's Bootstrap UCL	144.1	95% Percentile Bootstrap UCL	140.9
95% BCA Bootstrap UCL	144.5		
90% Chebyshev(Mean, Sd) UCL	181.7	95% Chebyshev(Mean, Sd) UCL	225.9
97.5% Chebyshev(Mean, Sd) UCL	287.3	99% Chebyshev(Mean, Sd) UCL	407.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	113.3

Maximum	388	Median	33.9
SD	133	Std. Error of Mean	44.33
Coefficient of Variation	1.174	Skewness	1.19
Mean of logged Data	3.679	SD of logged Data	1.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	195.7	95% Adjusted-CLT UCL (Chen-1995)	205
		95% Modified-t UCL (Johnson-1978)	198.7

Nonparametric Distribution Free UCLs

95% CLT UCL	186.2	95% Jackknife UCL	195.7
95% Standard Bootstrap UCL	183.3	95% Bootstrap-t UCL	240.7
95% Hall's Bootstrap UCL	199.4	95% Percentile Bootstrap UCL	189.3
95% BCA Bootstrap UCL	196.3		
90% Chebyshev(Mean, Sd) UCL	246.3	95% Chebyshev(Mean, Sd) UCL	306.5
97.5% Chebyshev(Mean, Sd) UCL	390.2	99% Chebyshev(Mean, Sd) UCL	554.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.15	Mean	59.34
Maximum	185	Median	20
SD	66.41	Std. Error of Mean	22.14
Coefficient of Variation	1.119	Skewness	0.92
Mean of logged Data	3.098	SD of logged Data	1.748

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	100.5	95% Adjusted-CLT UCL (Chen-1995)	103

	95% Modified-t UCL (Johnson-1978) 101.6

Nonparametric Distribution Free UCLs

95% CLT UCL	95.75	95% Jackknife UCL	100.5
95% Standard Bootstrap UCL	93.01	95% Bootstrap-t UCL	116.1
95% Hall's Bootstrap UCL	98.65	95% Percentile Bootstrap UCL	94.24
95% BCA Bootstrap UCL	98.68		
90% Chebyshev(Mean, Sd) UCL	125.8	95% Chebyshev(Mean, Sd) UCL	155.8
97.5% Chebyshev(Mean, Sd) UCL	197.6	99% Chebyshev(Mean, Sd) UCL	279.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	42.07
Maximum	137	Median	12.9
SD	48.02	Std. Error of Mean	16.01
Coefficient of Variation	1.141	Skewness	1.029
Mean of logged Data	2.754	SD of logged Data	1.725

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	71.83	95% Adjusted-CLT UCL (Chen-1995)	74.26
		95% Modified-t UCL (Johnson-1978)	72.74

Nonparametric Distribution Free UCLs

95% CLT UCL	68.39	95% Jackknife UCL	71.83
95% Standard Bootstrap UCL	67.24	95% Bootstrap-t UCL	85.58
95% Hall's Bootstrap UCL	72.9	95% Percentile Bootstrap UCL	68.4
95% BCA Bootstrap UCL	73.15		
90% Chebyshev(Mean, Sd) UCL	90.08	95% Chebyshev(Mean, Sd) UCL	111.8
97.5% Chebyshev(Mean, Sd) UCL	142	99% Chebyshev(Mean, Sd) UCL	201.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	90.84
Maximum	288	Median	28.4
SD	102.6	Std. Error of Mean	34.19
Coefficient of Variation	1.129	Skewness	0.931
Mean of logged Data	3.432	SD of logged Data	1.897

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	154.4	95% Adjusted-CLT UCL (Chen-1995)	158.4
		95% Modified-t UCL (Johnson-1978)	156.2

Nonparametric Distribution Free UCLs

95% CLT UCL	147.1	95% Jackknife UCL	154.4
95% Standard Bootstrap UCL	144.3	95% Bootstrap-t UCL	173.8
95% Hall's Bootstrap UCL	145.9	95% Percentile Bootstrap UCL	147.6
95% BCA Bootstrap UCL	153.6		
90% Chebyshev(Mean, Sd) UCL	193.4	95% Chebyshev(Mean, Sd) UCL	239.9
97.5% Chebyshev(Mean, Sd) UCL	304.3	99% Chebyshev(Mean, Sd) UCL	431

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	16.2
Maximum	47.4	Median	5.28
SD	16.39	Std. Error of Mean	5.463
Coefficient of Variation	1.012	Skewness	0.973
Mean of logged Data	2.243	SD of logged Data	1.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.36	95% Adjusted-CLT UCL (Chen-1995)	27.08
		95% Modified-t UCL (Johnson-1978)	26.66

Nonparametric Distribution Free UCLs

95% CLT UCL	25.19	95% Jackknife UCL	26.36
95% Standard Bootstrap UCL	24.59	95% Bootstrap-t UCL	31.5
95% Hall's Bootstrap UCL	26.74	95% Percentile Bootstrap UCL	25.4
95% BCA Bootstrap UCL	26.16		
90% Chebyshev(Mean, Sd) UCL	32.59	95% Chebyshev(Mean, Sd) UCL	40.02
97.5% Chebyshev(Mean, Sd) UCL	50.32	99% Chebyshev(Mean, Sd) UCL	70.56

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.08	Mean	142.9
Maximum	633	Median	34.1
SD	204.1	Std. Error of Mean	68.02
Coefficient of Variation	1.428	Skewness	2.039
Mean of logged Data	3.652	SD of logged Data	2.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	269.4	95% Adjusted-CLT UCL (Chen-1995)	304.2
		95% Modified-t UCL (Johnson-1978)	277.1

Nonparametric Distribution Free UCLs

95% CLT UCL	254.8	95% Jackknife UCL	269.4
95% Standard Bootstrap UCL	246.9	95% Bootstrap-t UCL	414.1

95% Hall's Bootstrap UCL	663.2	95% Percentile Bootstrap UCL	260.7
95% BCA Bootstrap UCL	294.6		
90% Chebyshev(Mean, Sd) UCL	346.9	95% Chebyshev(Mean, Sd) UCL	439.4
97.5% Chebyshev(Mean, Sd) UCL	567.7	99% Chebyshev(Mean, Sd) UCL	819.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.978	Mean	1.687
Maximum	5.15	Median	1.3
SD	1.303	Std. Error of Mean	0.434
Coefficient of Variation	0.772	Skewness	2.961
Mean of logged Data	0.38	SD of logged Data	0.481

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.495	95% Adjusted-CLT UCL (Chen-1995)	2.859
		95% Modified-t UCL (Johnson-1978)	2.566

Nonparametric Distribution Free UCLs

95% CLT UCL	2.401	95% Jackknife UCL	2.495
95% Standard Bootstrap UCL	2.352	95% Bootstrap-t UCL	41.2
95% Hall's Bootstrap UCL	18.68	95% Percentile Bootstrap UCL	2.543
95% BCA Bootstrap UCL	2.582		
90% Chebyshev(Mean, Sd) UCL	2.99	95% Chebyshev(Mean, Sd) UCL	3.58
97.5% Chebyshev(Mean, Sd) UCL	4.399	99% Chebyshev(Mean, Sd) UCL	6.008

Suggested UCL to Use

95% Student's-t UCL	2.495	or 95% Modified-t UCL	2.566

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.38	Mean	64.51
Maximum	204	Median	21.6
SD	72.8	Std. Error of Mean	24.27
Coefficient of Variation	1.129	Skewness	0.948
Mean of logged Data	3.159	SD of logged Data	1.77

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	109.6	95% Adjusted-CLT UCL (Chen-1995)	112.6
		95% Modified-t UCL (Johnson-1978)	110.9

Nonparametric Distribution Free UCLs

95% CLT UCL	104.4	95% Jackknife UCL	109.6
95% Standard Bootstrap UCL	102.1	95% Bootstrap-t UCL	128.7
95% Hall's Bootstrap UCL	106.5	95% Percentile Bootstrap UCL	104.1
95% BCA Bootstrap UCL	111.7		
90% Chebyshev(Mean, Sd) UCL	137.3	95% Chebyshev(Mean, Sd) UCL	170.3
97.5% Chebyshev(Mean, Sd) UCL	216.1	99% Chebyshev(Mean, Sd) UCL	306

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.47	Mean	2.809
Maximum	5.16	Median	2.17
SD	1.226	Std. Error of Mean	0.409
Coefficient of Variation	0.436	Skewness	0.913
Mean of logged Data	0.953	SD of logged Data	0.418

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.569	95% Adjusted-CLT UCL (Chen-1995)	3.614
		95% Modified-t UCL (Johnson-1978)	3.589

Nonparametric Distribution Free UCLs

95% CLT UCL	3.481	95% Jackknife UCL	3.569
95% Standard Bootstrap UCL	3.434	95% Bootstrap-t UCL	3.831
95% Hall's Bootstrap UCL	3.574	95% Percentile Bootstrap UCL	3.462
95% BCA Bootstrap UCL	3.551		
90% Chebyshev(Mean, Sd) UCL	4.035	95% Chebyshev(Mean, Sd) UCL	4.59
97.5% Chebyshev(Mean, Sd) UCL	5.361	99% Chebyshev(Mean, Sd) UCL	6.875

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	59.37
Maximum	270	Median	14
SD	86.32	Std. Error of Mean	28.77
Coefficient of Variation	1.454	Skewness	2.165
Mean of logged Data	3.021	SD of logged Data	1.677

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	112.9	95% Adjusted-CLT UCL (Chen-1995)	128.9
		95% Modified-t UCL (Johnson-1978)	116.3

Nonparametric Distribution Free UCLs

95% CLT UCL	106.7	95% Jackknife UCL	112.9
95% Standard Bootstrap UCL	104	95% Bootstrap-t UCL	179.6
95% Hall's Bootstrap UCL	286.1	95% Percentile Bootstrap UCL	109.5
95% BCA Bootstrap UCL	130.5		
90% Chebyshev(Mean, Sd) UCL	145.7	95% Chebyshev(Mean, Sd) UCL	184.8
97.5% Chebyshev(Mean, Sd) UCL	239.1	99% Chebyshev(Mean, Sd) UCL	345.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.195	Mean	130
Maximum	533	Median	34.1
SD	173.9	Std. Error of Mean	57.97
Coefficient of Variation	1.338	Skewness	1.788
Mean of logged Data	3.684	SD of logged Data	1.909

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	237.8	95% Adjusted-CLT UCL (Chen-1995)	262.2
		95% Modified-t UCL (Johnson-1978)	243.5

Nonparametric Distribution Free UCLs

95% CLT UCL	225.3	95% Jackknife UCL	237.8
95% Standard Bootstrap UCL	218.9	95% Bootstrap-t UCL	331.1
95% Hall's Bootstrap UCL	548.3	95% Percentile Bootstrap UCL	229
95% BCA Bootstrap UCL	251		
90% Chebyshev(Mean, Sd) UCL	303.9	95% Chebyshev(Mean, Sd) UCL	382.6
97.5% Chebyshev(Mean, Sd) UCL	492	99% Chebyshev(Mean, Sd) UCL	706.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.55	Mean	10.87

Maximum	19.8	Median	6.9
SD	6.138	Std. Error of Mean	2.046
Coefficient of Variation	0.565	Skewness	0.869
Mean of logged Data	2.258	SD of logged Data	0.517

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.67	95% Adjusted-CLT UCL (Chen-1995)	14.87
		95% Modified-t UCL (Johnson-1978)	14.77

Nonparametric Distribution Free UCLs

95% CLT UCL	14.23	95% Jackknife UCL	14.67
95% Standard Bootstrap UCL	14.04	95% Bootstrap-t UCL	15.34
95% Hall's Bootstrap UCL	12.81	95% Percentile Bootstrap UCL	13.83
95% BCA Bootstrap UCL	14.8		
90% Chebyshev(Mean, Sd) UCL	17	95% Chebyshev(Mean, Sd) UCL	19.79
97.5% Chebyshev(Mean, Sd) UCL	23.64	99% Chebyshev(Mean, Sd) UCL	31.23

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	19.79

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	39.1	Mean	46.79
Maximum	53	Median	45.9
SD	4.622	Std. Error of Mean	1.541
Coefficient of Variation	0.0988	Skewness	-0.0846
Mean of logged Data	3.841	SD of logged Data	0.0998

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.65	95% Adjusted-CLT UCL (Chen-1995)	49.28

		95% Modified-t UCL (Johnson-1978)	49.65

Nonparametric Distribution Free UCLs

95% CLT UCL	49.32	95% Jackknife UCL	49.65
95% Standard Bootstrap UCL	49.16	95% Bootstrap-t UCL	49.65
95% Hall's Bootstrap UCL	49.21	95% Percentile Bootstrap UCL	49.17
95% BCA Bootstrap UCL	49.17		
90% Chebyshev(Mean, Sd) UCL	51.41	95% Chebyshev(Mean, Sd) UCL	53.5
97.5% Chebyshev(Mean, Sd) UCL	56.41	99% Chebyshev(Mean, Sd) UCL	62.12

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:12:20 AM
From File	Table 1. Parcel Analytical Results ((Kingman APN32405169) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.716	Mean	1.041
Maximum	2.27	Median	0.93
SD	0.469	Std. Error of Mean	0.156
Coefficient of Variation	0.451	Skewness	2.798
Mean of logged Data	-0.0201	SD of logged Data	0.331

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.331	95% Adjusted-CLT UCL (Chen-1995)	1.454
		95% Modified-t UCL (Johnson-1978)	1.356

Nonparametric Distribution Free UCLs

95% CLT UCL	1.298	95% Jackknife UCL	1.331
95% Standard Bootstrap UCL	1.281	95% Bootstrap-t UCL	2.064
95% Hall's Bootstrap UCL	2.894	95% Percentile Bootstrap UCL	1.337
95% BCA Bootstrap UCL	1.501		
90% Chebyshev(Mean, Sd) UCL	1.51	95% Chebyshev(Mean, Sd) UCL	1.722
97.5% Chebyshev(Mean, Sd) UCL	2.017	99% Chebyshev(Mean, Sd) UCL	2.596

Suggested UCL to Use

95% Student's-t UCL	1.331	or 95% Modified-t UCL	1.356

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.56	Mean	2.038
Maximum	2.59	Median	2.045
SD	0.261	Std. Error of Mean	0.0871
Coefficient of Variation	0.128	Skewness	0.522
Mean of logged Data	0.705	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.2	95% Adjusted-CLT UCL (Chen-1995)	2.198
		95% Modified-t UCL (Johnson-1978)	2.203

Nonparametric Distribution Free UCLs

95% CLT UCL	2.182	95% Jackknife UCL	2.2
95% Standard Bootstrap UCL	2.175	95% Bootstrap-t UCL	2.205
95% Hall's Bootstrap UCL	2.305	95% Percentile Bootstrap UCL	2.171
95% BCA Bootstrap UCL	2.169		
90% Chebyshev(Mean, Sd) UCL	2.299	95% Chebyshev(Mean, Sd) UCL	2.418
97.5% Chebyshev(Mean, Sd) UCL	2.582	99% Chebyshev(Mean, Sd) UCL	2.904

Suggested UCL to Use

95% Student's-t UCL	2.2	or 95% Modified-t UCL	2.203

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.71	Mean	4.472
Maximum	11.3	Median	2.055
SD	3.756	Std. Error of Mean	1.252
Coefficient of Variation	0.84	Skewness	1.143
Mean of logged Data	1.218	SD of logged Data	0.76

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	6.8	95% Adjusted-CLT UCL (Chen-1995)	7.04
		95% Modified-t UCL (Johnson-1978)	6.879

Nonparametric Distribution Free UCLs

95% CLT UCL	6.531	95% Jackknife UCL	6.8
95% Standard Bootstrap UCL	6.397	95% Bootstrap-t UCL	8.613
95% Hall's Bootstrap UCL	6.4	95% Percentile Bootstrap UCL	6.507
95% BCA Bootstrap UCL	6.793		
90% Chebyshev(Mean, Sd) UCL	8.227	95% Chebyshev(Mean, Sd) UCL	9.929
97.5% Chebyshev(Mean, Sd) UCL	12.29	99% Chebyshev(Mean, Sd) UCL	16.93

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.929

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	5.783
Maximum	15.7	Median	2.34
SD	5.508	Std. Error of Mean	1.836
Coefficient of Variation	0.952	Skewness	1.133
Mean of logged Data	1.381	SD of logged Data	0.881

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.197	95% Adjusted-CLT UCL (Chen-1995)	9.544
		95% Modified-t UCL (Johnson-1978)	9.313

Nonparametric Distribution Free UCLs

95% CLT UCL	8.803	95% Jackknife UCL	9.197
95% Standard Bootstrap UCL	8.605	95% Bootstrap-t UCL	12.04
95% Hall's Bootstrap UCL	7.933	95% Percentile Bootstrap UCL	8.809
95% BCA Bootstrap UCL	9.097		
90% Chebyshev(Mean, Sd) UCL	11.29	95% Chebyshev(Mean, Sd) UCL	13.79
97.5% Chebyshev(Mean, Sd) UCL	17.25	99% Chebyshev(Mean, Sd) UCL	24.05

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.79

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.1	Mean	9.748
Maximum	27	Median	3.71
SD	9.648	Std. Error of Mean	3.216
Coefficient of Variation	0.99	Skewness	1.102
Mean of logged Data	1.861	SD of logged Data	0.933

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.73	95% Adjusted-CLT UCL (Chen-1995)	16.3
		95% Modified-t UCL (Johnson-1978)	15.92

Nonparametric Distribution Free UCLs

95% CLT UCL	15.04	95% Jackknife UCL	15.73
95% Standard Bootstrap UCL	14.81	95% Bootstrap-t UCL	19.96
95% Hall's Bootstrap UCL	14.42	95% Percentile Bootstrap UCL	14.98
95% BCA Bootstrap UCL	15.69		
90% Chebyshev(Mean, Sd) UCL	19.4	95% Chebyshev(Mean, Sd) UCL	23.77
97.5% Chebyshev(Mean, Sd) UCL	29.83	99% Chebyshev(Mean, Sd) UCL	41.75

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	23.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.36	Mean	4.422
Maximum	13	Median	3.155
SD	3.313	Std. Error of Mean	1.104
Coefficient of Variation	0.749	Skewness	2.699
Mean of logged Data	1.338	SD of logged Data	0.507

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.476	95% Adjusted-CLT UCL (Chen-1995)	7.301
		95% Modified-t UCL (Johnson-1978)	6.642

Nonparametric Distribution Free UCLs

95% CLT UCL	6.239	95% Jackknife UCL	6.476
95% Standard Bootstrap UCL	6.167	95% Bootstrap-t UCL	17.44
95% Hall's Bootstrap UCL	17.16	95% Percentile Bootstrap UCL	6.469
95% BCA Bootstrap UCL	7.642		
90% Chebyshev(Mean, Sd) UCL	7.736	95% Chebyshev(Mean, Sd) UCL	9.236
97.5% Chebyshev(Mean, Sd) UCL	11.32	99% Chebyshev(Mean, Sd) UCL	15.41

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	9.236

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.955	Mean	4.071
Maximum	9.57	Median	2.05
SD	3.25	Std. Error of Mean	1.083
Coefficient of Variation	0.799	Skewness	1.153
Mean of logged Data	1.158	SD of logged Data	0.706

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.085	95% Adjusted-CLT UCL (Chen-1995)	6.298
		95% Modified-t UCL (Johnson-1978)	6.155

Nonparametric Distribution Free UCLs

95% CLT UCL	5.853	95% Jackknife UCL	6.085

95% Standard Bootstrap UCL	5.698	95% Bootstrap-t UCL	8.104
95% Hall's Bootstrap UCL	5.429	95% Percentile Bootstrap UCL	5.751
95% BCA Bootstrap UCL	6.089		
90% Chebyshev(Mean, Sd) UCL	7.321	95% Chebyshev(Mean, Sd) UCL	8.793
97.5% Chebyshev(Mean, Sd) UCL	10.84	99% Chebyshev(Mean, Sd) UCL	14.85

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 8.793

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	8.41
Maximum	22.6	Median	3.02
SD	8.753	Std. Error of Mean	2.918
Coefficient of Variation	1.041	Skewness	0.936
Mean of logged Data	1.621	SD of logged Data	1.053

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.84	95% Adjusted-CLT UCL (Chen-1995)	14.18
		95% Modified-t UCL (Johnson-1978)	13.99

Nonparametric Distribution Free UCLs

95% CLT UCL	13.21	95% Jackknife UCL	13.84
95% Standard Bootstrap UCL	13.02	95% Bootstrap-t UCL	15.82
95% Hall's Bootstrap UCL	11.57	95% Percentile Bootstrap UCL	12.96
95% BCA Bootstrap UCL	13.7		
90% Chebyshev(Mean, Sd) UCL	17.16	95% Chebyshev(Mean, Sd) UCL	21.13
97.5% Chebyshev(Mean, Sd) UCL	26.63	99% Chebyshev(Mean, Sd) UCL	37.44

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.85	Mean	3.096
Maximum	3.29	Median	3.1
SD	0.129	Std. Error of Mean	0.043
Coefficient of Variation	0.0417	Skewness	-0.501
Mean of logged Data	1.129	SD of logged Data	0.0421

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.176	95% Adjusted-CLT UCL (Chen-1995)	3.159
		95% Modified-t UCL (Johnson-1978)	3.175

Nonparametric Distribution Free UCLs

95% CLT UCL	3.167	95% Jackknife UCL	3.176
95% Standard Bootstrap UCL	3.163	95% Bootstrap-t UCL	3.169
95% Hall's Bootstrap UCL	3.168	95% Percentile Bootstrap UCL	3.162
95% BCA Bootstrap UCL	3.156		
90% Chebyshev(Mean, Sd) UCL	3.225	95% Chebyshev(Mean, Sd) UCL	3.284
97.5% Chebyshev(Mean, Sd) UCL	3.365	99% Chebyshev(Mean, Sd) UCL	3.524

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	8.557
Maximum	22.6	Median	3.36
SD	8.641	Std. Error of Mean	2.88
Coefficient of Variation	1.01	Skewness	0.891
Mean of logged Data	1.658	SD of logged Data	1.042

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.91	95% Adjusted-CLT UCL (Chen-1995)	14.21
		95% Modified-t UCL (Johnson-1978)	14.06

Nonparametric Distribution Free UCLs

95% CLT UCL	13.29	95% Jackknife UCL	13.91
95% Standard Bootstrap UCL	13.01	95% Bootstrap-t UCL	15.6
95% Hall's Bootstrap UCL	11.64	95% Percentile Bootstrap UCL	13.06
95% BCA Bootstrap UCL	14.29		
90% Chebyshev(Mean, Sd) UCL	17.2	95% Chebyshev(Mean, Sd) UCL	21.11
97.5% Chebyshev(Mean, Sd) UCL	26.54	99% Chebyshev(Mean, Sd) UCL	37.22

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.2	Mean	1.639
Maximum	4.52	Median	1.26
SD	1.084	Std. Error of Mean	0.361
Coefficient of Variation	0.661	Skewness	2.964
Mean of logged Data	0.385	SD of logged Data	0.426

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.311	95% Adjusted-CLT UCL (Chen-1995)	2.615
		95% Modified-t UCL (Johnson-1978)	2.371

Nonparametric Distribution Free UCLs

95% CLT UCL	2.234	95% Jackknife UCL	2.311
95% Standard Bootstrap UCL	2.205	95% Bootstrap-t UCL	18.24
95% Hall's Bootstrap UCL	9.224	95% Percentile Bootstrap UCL	2.348

95% BCA Bootstrap UCL	2.704		
90% Chebyshev(Mean, Sd) UCL	2.723	95% Chebyshev(Mean, Sd) UCL	3.214
97.5% Chebyshev(Mean, Sd) UCL	3.895	99% Chebyshev(Mean, Sd) UCL	5.234

Suggested UCL to Use

95% Student's-t UCL	2.311	or 95% Modified-t UCL	2.371

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	5.602
Maximum	14	Median	3.155
SD	4.417	Std. Error of Mean	1.472
Coefficient of Variation	0.789	Skewness	1.242
Mean of logged Data	1.483	SD of logged Data	0.702

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.34	95% Adjusted-CLT UCL (Chen-1995)	8.675
		95% Modified-t UCL (Johnson-1978)	8.441

Nonparametric Distribution Free UCLs

95% CLT UCL	8.023	95% Jackknife UCL	8.34
95% Standard Bootstrap UCL	7.908	95% Bootstrap-t UCL	11.03
95% Hall's Bootstrap UCL	7.711	95% Percentile Bootstrap UCL	7.923
95% BCA Bootstrap UCL	8.291		
90% Chebyshev(Mean, Sd) UCL	10.02	95% Chebyshev(Mean, Sd) UCL	12.02
97.5% Chebyshev(Mean, Sd) UCL	14.8	99% Chebyshev(Mean, Sd) UCL	20.25

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	12.02

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.9	Mean	1.076
Maximum	1.52	Median	0.95
SD	0.223	Std. Error of Mean	0.0744
Coefficient of Variation	0.207	Skewness	1.242
Mean of logged Data	0.0555	SD of logged Data	0.192

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.214	95% Adjusted-CLT UCL (Chen-1995)	1.231
		95% Modified-t UCL (Johnson-1978)	1.219

Nonparametric Distribution Free UCLs

95% CLT UCL	1.198	95% Jackknife UCL	1.214
95% Standard Bootstrap UCL	1.191	95% Bootstrap-t UCL	1.282
95% Hall's Bootstrap UCL	1.17	95% Percentile Bootstrap UCL	1.195
95% BCA Bootstrap UCL	1.213		
90% Chebyshev(Mean, Sd) UCL	1.299	95% Chebyshev(Mean, Sd) UCL	1.4
97.5% Chebyshev(Mean, Sd) UCL	1.54	99% Chebyshev(Mean, Sd) UCL	1.816

Suggested UCL to Use

95% Student's-t UCL	1.214	or 95% Modified-t UCL	1.219

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.005	Mean	6.799
Maximum	26.7	Median	3.165
SD	7.75	Std. Error of Mean	2.583
Coefficient of Variation	1.14	Skewness	2.619
Mean of logged Data	1.581	SD of logged Data	0.756

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.6	95% Adjusted-CLT UCL (Chen-1995)	13.46
		95% Modified-t UCL (Johnson-1978)	11.98

Nonparametric Distribution Free UCLs

95% CLT UCL	11.05	95% Jackknife UCL	11.6
95% Standard Bootstrap UCL	10.59	95% Bootstrap-t UCL	24.47
95% Hall's Bootstrap UCL	26.21	95% Percentile Bootstrap UCL	11.45
95% BCA Bootstrap UCL	14.08		
90% Chebyshev(Mean, Sd) UCL	14.55	95% Chebyshev(Mean, Sd) UCL	18.06
97.5% Chebyshev(Mean, Sd) UCL	22.93	99% Chebyshev(Mean, Sd) UCL	32.5

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	18.06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.81	Mean	9.136
Maximum	23.5	Median	3.165
SD	8.779	Std. Error of Mean	2.926
Coefficient of Variation	0.961	Skewness	0.919
Mean of logged Data	1.804	SD of logged Data	0.93

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.58	95% Adjusted-CLT UCL (Chen-1995)	14.91
		95% Modified-t UCL (Johnson-1978)	14.73

Nonparametric Distribution Free UCLs

95% CLT UCL	13.95	95% Jackknife UCL	14.58
95% Standard Bootstrap UCL	13.79	95% Bootstrap-t UCL	15.81
95% Hall's Bootstrap UCL	12.05	95% Percentile Bootstrap UCL	13.49
95% BCA Bootstrap UCL	14.35		
90% Chebyshev(Mean, Sd) UCL	17.91	95% Chebyshev(Mean, Sd) UCL	21.89
97.5% Chebyshev(Mean, Sd) UCL	27.41	99% Chebyshev(Mean, Sd) UCL	38.25

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	21.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.7	Mean	12.76
Maximum	13.8	Median	12.8
SD	0.806	Std. Error of Mean	0.269
Coefficient of Variation	0.0632	Skewness	-0.178
Mean of logged Data	2.544	SD of logged Data	0.0636

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.26	95% Adjusted-CLT UCL (Chen-1995)	13.18
		95% Modified-t UCL (Johnson-1978)	13.25

Nonparametric Distribution Free UCLs

95% CLT UCL	13.2	95% Jackknife UCL	13.26
95% Standard Bootstrap UCL	13.18	95% Bootstrap-t UCL	13.25
95% Hall's Bootstrap UCL	13.12	95% Percentile Bootstrap UCL	13.17
95% BCA Bootstrap UCL	13.16		
90% Chebyshev(Mean, Sd) UCL	13.56	95% Chebyshev(Mean, Sd) UCL	13.93
97.5% Chebyshev(Mean, Sd) UCL	14.43	99% Chebyshev(Mean, Sd) UCL	15.43

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9

		Number of Missing Observations	0
Minimum	9.06	Mean	11.56
Maximum	15.5	Median	11.5
SD	2.136	Std. Error of Mean	0.712
Coefficient of Variation	0.185	Skewness	0.508
Mean of logged Data	2.433	SD of logged Data	0.183

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.89	95% Adjusted-CLT UCL (Chen-1995)	12.86
		95% Modified-t UCL (Johnson-1978)	12.91

Nonparametric Distribution Free UCLs

95% CLT UCL	12.73	95% Jackknife UCL	12.89
95% Standard Bootstrap UCL	12.67	95% Bootstrap-t UCL	13.15
95% Hall's Bootstrap UCL	13.01	95% Percentile Bootstrap UCL	12.71
95% BCA Bootstrap UCL	12.78		
90% Chebyshev(Mean, Sd) UCL	13.7	95% Chebyshev(Mean, Sd) UCL	14.67
97.5% Chebyshev(Mean, Sd) UCL	16.01	99% Chebyshev(Mean, Sd) UCL	18.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	42.9	Mean	44.71
Maximum	46.1	Median	44.5
SD	1.166	Std. Error of Mean	0.389
Coefficient of Variation	0.0261	Skewness	-0.253
Mean of logged Data	3.8	SD of logged Data	0.0261

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	45.43	95% Adjusted-CLT UCL (Chen-1995)	45.32
		95% Modified-t UCL (Johnson-1978)	45.43

Nonparametric Distribution Free UCLs

95% CLT UCL	45.35	95% Jackknife UCL	45.43
95% Standard Bootstrap UCL	45.31	95% Bootstrap-t UCL	45.38
95% Hall's Bootstrap UCL	45.25	95% Percentile Bootstrap UCL	45.31
95% BCA Bootstrap UCL	45.27		
90% Chebyshev(Mean, Sd) UCL	45.88	95% Chebyshev(Mean, Sd) UCL	46.4
97.5% Chebyshev(Mean, Sd) UCL	47.14	99% Chebyshev(Mean, Sd) UCL	48.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 5:50:17 PM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405172) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.78	Mean	3.25
Maximum	5.01	Median	3.49
SD	1.322	Std. Error of Mean	0.441
Coefficient of Variation	0.407	Skewness	0.0743
Mean of logged Data	1.098	SD of logged Data	0.434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.069	95% Adjusted-CLT UCL (Chen-1995)	3.986
		95% Modified-t UCL (Johnson-1978)	4.071

Nonparametric Distribution Free UCLs

95% CLT UCL	3.975	95% Jackknife UCL	4.069
95% Standard Bootstrap UCL	3.928	95% Bootstrap-t UCL	4.084
95% Hall's Bootstrap UCL	3.86	95% Percentile Bootstrap UCL	3.943
95% BCA Bootstrap UCL	3.969		
90% Chebyshev(Mean, Sd) UCL	4.572	95% Chebyshev(Mean, Sd) UCL	5.17
97.5% Chebyshev(Mean, Sd) UCL	6.001	99% Chebyshev(Mean, Sd) UCL	7.633

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	0.53	Mean	2.986
Maximum	7.55	Median	1.7
SD	2.729	Std. Error of Mean	0.91
Coefficient of Variation	0.914	Skewness	0.902
Mean of logged Data	0.647	SD of logged Data	1.058

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.677	95% Adjusted-CLT UCL (Chen-1995)	4.774
		95% Modified-t UCL (Johnson-1978)	4.722

Nonparametric Distribution Free UCLs

95% CLT UCL	4.482	95% Jackknife UCL	4.677
95% Standard Bootstrap UCL	4.376	95% Bootstrap-t UCL	5.475
95% Hall's Bootstrap UCL	5.17	95% Percentile Bootstrap UCL	4.513
95% BCA Bootstrap UCL	4.661		
90% Chebyshev(Mean, Sd) UCL	5.714	95% Chebyshev(Mean, Sd) UCL	6.95
97.5% Chebyshev(Mean, Sd) UCL	8.666	99% Chebyshev(Mean, Sd) UCL	12.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.15	Mean	12.22
Maximum	42.6	Median	6.13
SD	14.28	Std. Error of Mean	4.76
Coefficient of Variation	1.168	Skewness	1.605
Mean of logged Data	1.946	SD of logged Data	1.097

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	21.08	95% Adjusted-CLT UCL (Chen-1995)	22.78
		95% Modified-t UCL (Johnson-1978)	21.5

Nonparametric Distribution Free UCLs

95% CLT UCL	20.05	95% Jackknife UCL	21.08
95% Standard Bootstrap UCL	19.44	95% Bootstrap-t UCL	38.63
95% Hall's Bootstrap UCL	56.29	95% Percentile Bootstrap UCL	20.02
95% BCA Bootstrap UCL	22.06		
90% Chebyshev(Mean, Sd) UCL	26.51	95% Chebyshev(Mean, Sd) UCL	32.97
97.5% Chebyshev(Mean, Sd) UCL	41.95	99% Chebyshev(Mean, Sd) UCL	59.59

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.15	Mean	78.28
Maximum	259	Median	48
SD	87.26	Std. Error of Mean	29.09
Coefficient of Variation	1.115	Skewness	1.395
Mean of logged Data	3.593	SD of logged Data	1.555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	132.4	95% Adjusted-CLT UCL (Chen-1995)	140.6
		95% Modified-t UCL (Johnson-1978)	134.6

Nonparametric Distribution Free UCLs

95% CLT UCL	126.1	95% Jackknife UCL	132.4
95% Standard Bootstrap UCL	122.4	95% Bootstrap-t UCL	186.2
95% Hall's Bootstrap UCL	349.8	95% Percentile Bootstrap UCL	127.3
95% BCA Bootstrap UCL	132.4		
90% Chebyshev(Mean, Sd) UCL	165.5	95% Chebyshev(Mean, Sd) UCL	205.1
97.5% Chebyshev(Mean, Sd) UCL	259.9	99% Chebyshev(Mean, Sd) UCL	367.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.96	Mean	97.06
Maximum	328	Median	66.1
SD	106.1	Std. Error of Mean	35.36
Coefficient of Variation	1.093	Skewness	1.545
Mean of logged Data	3.916	SD of logged Data	1.382

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	162.8	95% Adjusted-CLT UCL (Chen-1995)	174.7
		95% Modified-t UCL (Johnson-1978)	165.9

Nonparametric Distribution Free UCLs

95% CLT UCL	155.2	95% Jackknife UCL	162.8
95% Standard Bootstrap UCL	151.3	95% Bootstrap-t UCL	234.9
95% Hall's Bootstrap UCL	438.4	95% Percentile Bootstrap UCL	157.6
95% BCA Bootstrap UCL	168.4		
90% Chebyshev(Mean, Sd) UCL	203.1	95% Chebyshev(Mean, Sd) UCL	251.2
97.5% Chebyshev(Mean, Sd) UCL	317.9	99% Chebyshev(Mean, Sd) UCL	448.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.96	Mean	107.5
Maximum	269	Median	78.5
SD	100.6	Std. Error of Mean	33.54
Coefficient of Variation	0.936	Skewness	0.831
Mean of logged Data	4.074	SD of logged Data	1.375

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	169.9	95% Adjusted-CLT UCL (Chen-1995)	172.6
		95% Modified-t UCL (Johnson-1978)	171.4

Nonparametric Distribution Free UCLs

95% CLT UCL	162.7	95% Jackknife UCL	169.9
95% Standard Bootstrap UCL	159.4	95% Bootstrap-t UCL	206.1
95% Hall's Bootstrap UCL	190.3	95% Percentile Bootstrap UCL	160.5
95% BCA Bootstrap UCL	170.4		
90% Chebyshev(Mean, Sd) UCL	208.1	95% Chebyshev(Mean, Sd) UCL	253.7
97.5% Chebyshev(Mean, Sd) UCL	317	99% Chebyshev(Mean, Sd) UCL	441.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.305	Mean	60.74
Maximum	207	Median	41.2
SD	66.65	Std. Error of Mean	22.22
Coefficient of Variation	1.097	Skewness	1.567
Mean of logged Data	3.449	SD of logged Data	1.375

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	102.1	95% Adjusted-CLT UCL (Chen-1995)	109.7
		95% Modified-t UCL (Johnson-1978)	104

Nonparametric Distribution Free UCLs

95% CLT UCL	97.29	95% Jackknife UCL	102.1

95% Standard Bootstrap UCL	95.3	95% Bootstrap-t UCL	144
95% Hall's Bootstrap UCL	265.2	95% Percentile Bootstrap UCL	96.6
95% BCA Bootstrap UCL	106		
90% Chebyshev(Mean, Sd) UCL	127.4	95% Chebyshev(Mean, Sd) UCL	157.6
97.5% Chebyshev(Mean, Sd) UCL	199.5	99% Chebyshev(Mean, Sd) UCL	281.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.15	Mean	48.97
Maximum	154	Median	30.7
SD	51.28	Std. Error of Mean	17.09
Coefficient of Variation	1.047	Skewness	1.32
Mean of logged Data	3.246	SD of logged Data	1.386

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.76	95% Adjusted-CLT UCL (Chen-1995)	85.12
		95% Modified-t UCL (Johnson-1978)	82.01

Nonparametric Distribution Free UCLs

95% CLT UCL	77.09	95% Jackknife UCL	80.76
95% Standard Bootstrap UCL	75.18	95% Bootstrap-t UCL	104
95% Hall's Bootstrap UCL	209.6	95% Percentile Bootstrap UCL	76.48
95% BCA Bootstrap UCL	84.11		
90% Chebyshev(Mean, Sd) UCL	100.3	95% Chebyshev(Mean, Sd) UCL	123.5
97.5% Chebyshev(Mean, Sd) UCL	155.7	99% Chebyshev(Mean, Sd) UCL	219.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.96	Mean	98.26
Maximum	295	Median	64.3
SD	101.1	Std. Error of Mean	33.68
Coefficient of Variation	1.028	Skewness	1.149
Mean of logged Data	3.93	SD of logged Data	1.401

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	160.9	95% Adjusted-CLT UCL (Chen-1995)	167.4
		95% Modified-t UCL (Johnson-1978)	163

Nonparametric Distribution Free UCLs			
95% CLT UCL	153.7	95% Jackknife UCL	160.9
95% Standard Bootstrap UCL	149.1	95% Bootstrap-t UCL	203.8
95% Hall's Bootstrap UCL	206	95% Percentile Bootstrap UCL	155.6
95% BCA Bootstrap UCL	160.4		
90% Chebyshev(Mean, Sd) UCL	199.3	95% Chebyshev(Mean, Sd) UCL	245.1
97.5% Chebyshev(Mean, Sd) UCL	308.6	99% Chebyshev(Mean, Sd) UCL	433.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.305	Mean	18.14
Maximum	56.1	Median	9.47
SD	17.8	Std. Error of Mean	5.934
Coefficient of Variation	0.981	Skewness	1.414
Mean of logged Data	2.459	SD of logged Data	1.016

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.18	95% Adjusted-CLT UCL (Chen-1995)	30.89
		95% Modified-t UCL (Johnson-1978)	29.64

Nonparametric Distribution Free UCLs

95% CLT UCL	27.9	95% Jackknife UCL	29.18
95% Standard Bootstrap UCL	27.32	95% Bootstrap-t UCL	38.44
95% Hall's Bootstrap UCL	49.03	95% Percentile Bootstrap UCL	27.87
95% BCA Bootstrap UCL	30.18		
90% Chebyshev(Mean, Sd) UCL	35.94	95% Chebyshev(Mean, Sd) UCL	44.01
97.5% Chebyshev(Mean, Sd) UCL	55.2	99% Chebyshev(Mean, Sd) UCL	77.19

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.96	Mean	128.5
Maximum	409	Median	77.3
SD	143.9	Std. Error of Mean	47.97
Coefficient of Variation	1.12	Skewness	1.271
Mean of logged Data	4.087	SD of logged Data	1.518

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	217.7	95% Adjusted-CLT UCL (Chen-1995)	229.1
		95% Modified-t UCL (Johnson-1978)	221.1

Nonparametric Distribution Free UCLs

95% CLT UCL	207.4	95% Jackknife UCL	217.7
95% Standard Bootstrap UCL	203.9	95% Bootstrap-t UCL	321.1
95% Hall's Bootstrap UCL	327	95% Percentile Bootstrap UCL	208.6
95% BCA Bootstrap UCL	220.2		
90% Chebyshev(Mean, Sd) UCL	272.4	95% Chebyshev(Mean, Sd) UCL	337.6
97.5% Chebyshev(Mean, Sd) UCL	428	99% Chebyshev(Mean, Sd) UCL	605.8

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.27	Mean	2.854
Maximum	5.35	Median	1.59
SD	1.902	Std. Error of Mean	0.634
Coefficient of Variation	0.666	Skewness	0.611
Mean of logged Data	0.848	SD of logged Data	0.668

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.033	95% Adjusted-CLT UCL (Chen-1995)	4.035
		95% Modified-t UCL (Johnson-1978)	4.055

Nonparametric Distribution Free UCLs

95% CLT UCL	3.897	95% Jackknife UCL	4.033
95% Standard Bootstrap UCL	3.847	95% Bootstrap-t UCL	4.365
95% Hall's Bootstrap UCL	3.585	95% Percentile Bootstrap UCL	3.916
95% BCA Bootstrap UCL	3.977		
90% Chebyshev(Mean, Sd) UCL	4.757	95% Chebyshev(Mean, Sd) UCL	5.618
97.5% Chebyshev(Mean, Sd) UCL	6.814	99% Chebyshev(Mean, Sd) UCL	9.163

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.305	Mean	72.43
Maximum	244	Median	49.6
SD	79.25	Std. Error of Mean	26.42
Coefficient of Variation	1.094	Skewness	1.514
Mean of logged Data	3.592	SD of logged Data	1.44

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	121.6	95% Adjusted-CLT UCL (Chen-1995)	130.1
		95% Modified-t UCL (Johnson-1978)	123.8

Nonparametric Distribution Free UCLs

95% CLT UCL	115.9	95% Jackknife UCL	121.6
95% Standard Bootstrap UCL	112.3	95% Bootstrap-t UCL	172.4
95% Hall's Bootstrap UCL	320.8	95% Percentile Bootstrap UCL	115.4
95% BCA Bootstrap UCL	124.1		
90% Chebyshev(Mean, Sd) UCL	151.7	95% Chebyshev(Mean, Sd) UCL	187.6
97.5% Chebyshev(Mean, Sd) UCL	237.4	99% Chebyshev(Mean, Sd) UCL	335.3

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	4.76	Mean	11.96
Maximum	20	Median	11.6
SD	7.162	Std. Error of Mean	2.387
Coefficient of Variation	0.599	Skewness	0.0719
Mean of logged Data	2.288	SD of logged Data	0.685

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	16.4	95% Adjusted-CLT UCL (Chen-1995)	15.94
		95% Modified-t UCL (Johnson-1978)	16.4

Nonparametric Distribution Free UCLs

95% CLT UCL	15.88	95% Jackknife UCL	16.4
95% Standard Bootstrap UCL	15.62	95% Bootstrap-t UCL	16.33
95% Hall's Bootstrap UCL	14.86	95% Percentile Bootstrap UCL	15.64
95% BCA Bootstrap UCL	15.65		
90% Chebyshev(Mean, Sd) UCL	19.12	95% Chebyshev(Mean, Sd) UCL	22.36
97.5% Chebyshev(Mean, Sd) UCL	26.86	99% Chebyshev(Mean, Sd) UCL	35.71

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.36

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.305	Mean	57.37
Maximum	204	Median	32.7
SD	69.93	Std. Error of Mean	23.31
Coefficient of Variation	1.219	Skewness	1.554
Mean of logged Data	3.285	SD of logged Data	1.435

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	100.7	95% Adjusted-CLT UCL (Chen-1995)	108.6
		95% Modified-t UCL (Johnson-1978)	102.7

Nonparametric Distribution Free UCLs

95% CLT UCL	95.71	95% Jackknife UCL	100.7
95% Standard Bootstrap UCL	93.77	95% Bootstrap-t UCL	182.9
95% Hall's Bootstrap UCL	301.6	95% Percentile Bootstrap UCL	95.46
95% BCA Bootstrap UCL	107.8		
90% Chebyshev(Mean, Sd) UCL	127.3	95% Chebyshev(Mean, Sd) UCL	159
97.5% Chebyshev(Mean, Sd) UCL	202.9	99% Chebyshev(Mean, Sd) UCL	289.3

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.7	Mean	126.6
Maximum	380	Median	76.9
SD	135.3	Std. Error of Mean	45.12
Coefficient of Variation	1.069	Skewness	1.139
Mean of logged Data	4.051	SD of logged Data	1.626

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	210.5	95% Adjusted-CLT UCL (Chen-1995)	219.2
		95% Modified-t UCL (Johnson-1978)	213.4

Nonparametric Distribution Free UCLs

95% CLT UCL	200.8	95% Jackknife UCL	210.5
95% Standard Bootstrap UCL	198.2	95% Bootstrap-t UCL	287.7
95% Hall's Bootstrap UCL	259.5	95% Percentile Bootstrap UCL	198.8
95% BCA Bootstrap UCL	209.4		
90% Chebyshev(Mean, Sd) UCL	262	95% Chebyshev(Mean, Sd) UCL	323.3
97.5% Chebyshev(Mean, Sd) UCL	408.4	99% Chebyshev(Mean, Sd) UCL	575.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.7	Mean	12.72
Maximum	15.2	Median	13.4
SD	1.652	Std. Error of Mean	0.551

Coefficient of Variation	0.13	Skewness	0.0335
Mean of logged Data	2.536	SD of logged Data	0.131

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.75	95% Adjusted-CLT UCL (Chen-1995)	13.63
		95% Modified-t UCL (Johnson-1978)	13.75

Nonparametric Distribution Free UCLs

95% CLT UCL	13.63	95% Jackknife UCL	13.75
95% Standard Bootstrap UCL	13.59	95% Bootstrap-t UCL	13.73
95% Hall's Bootstrap UCL	13.52	95% Percentile Bootstrap UCL	13.57
95% BCA Bootstrap UCL	13.52		
90% Chebyshev(Mean, Sd) UCL	14.37	95% Chebyshev(Mean, Sd) UCL	15.12
97.5% Chebyshev(Mean, Sd) UCL	16.16	99% Chebyshev(Mean, Sd) UCL	18.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.62	Mean	15.38
Maximum	28.7	Median	13.7
SD	6.189	Std. Error of Mean	2.063
Coefficient of Variation	0.402	Skewness	1.384
Mean of logged Data	2.67	SD of logged Data	0.367

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	19.22	95% Adjusted-CLT UCL (Chen-1995)	19.79
		95% Modified-t UCL (Johnson-1978)	19.37

Nonparametric Distribution Free UCLs

95% CLT UCL	18.77	95% Jackknife UCL	19.22
95% Standard Bootstrap UCL	18.59	95% Bootstrap-t UCL	22.6
95% Hall's Bootstrap UCL	40.15	95% Percentile Bootstrap UCL	18.66
95% BCA Bootstrap UCL	19.59		
90% Chebyshev(Mean, Sd) UCL	21.57	95% Chebyshev(Mean, Sd) UCL	24.37
97.5% Chebyshev(Mean, Sd) UCL	28.26	99% Chebyshev(Mean, Sd) UCL	35.91

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	37.3	Mean	54.16
Maximum	106	Median	45.6
SD	22.94	Std. Error of Mean	7.645
Coefficient of Variation	0.424	Skewness	1.706
Mean of logged Data	3.927	SD of logged Data	0.362

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	68.37	95% Adjusted-CLT UCL (Chen-1995)	71.38
		95% Modified-t UCL (Johnson-1978)	69.1

Nonparametric Distribution Free UCLs

95% CLT UCL	66.73	95% Jackknife UCL	68.37
95% Standard Bootstrap UCL	65.75	95% Bootstrap-t UCL	79.67
95% Hall's Bootstrap UCL	70.82	95% Percentile Bootstrap UCL	65.79
95% BCA Bootstrap UCL	71.69		
90% Chebyshev(Mean, Sd) UCL	77.09	95% Chebyshev(Mean, Sd) UCL	87.48
97.5% Chebyshev(Mean, Sd) UCL	101.9	99% Chebyshev(Mean, Sd) UCL	130.2

Suggested UCL to Use

95% Student's-t UCL	68.37	or 95% Modified-t UCL	69.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:16:41 AM
From File	Table 1. Parcel Analytical Results (APN32405174) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.93	Mean	2.773
Maximum	5.74	Median	2.05
SD	1.922	Std. Error of Mean	0.496
Coefficient of Variation	0.693	Skewness	0.557
Mean of logged Data	0.773	SD of logged Data	0.743

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.648	95% Adjusted-CLT UCL (Chen-1995)	3.666
		95% Modified-t UCL (Johnson-1978)	3.659

Nonparametric Distribution Free UCLs

95% CLT UCL	3.59	95% Jackknife UCL	3.648
95% Standard Bootstrap UCL	3.581	95% Bootstrap-t UCL	3.722
95% Hall's Bootstrap UCL	3.527	95% Percentile Bootstrap UCL	3.593
95% BCA Bootstrap UCL	3.674		
90% Chebyshev(Mean, Sd) UCL	4.262	95% Chebyshev(Mean, Sd) UCL	4.937
97.5% Chebyshev(Mean, Sd) UCL	5.873	99% Chebyshev(Mean, Sd) UCL	7.712

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	0.496	Mean	0.985
Maximum	3.71	Median	0.525
SD	0.892	Std. Error of Mean	0.23
Coefficient of Variation	0.905	Skewness	2.423

Mean of logged Data	-0.253	SD of logged Data	0.638

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.391	95% Adjusted-CLT UCL (Chen-1995)	1.518
		95% Modified-t UCL (Johnson-1978)	1.415

Nonparametric Distribution Free UCLs

95% CLT UCL	1.364	95% Jackknife UCL	1.391
95% Standard Bootstrap UCL	1.347	95% Bootstrap-t UCL	1.865
95% Hall's Bootstrap UCL	2.626	95% Percentile Bootstrap UCL	1.389
95% BCA Bootstrap UCL	1.497		
90% Chebyshev(Mean, Sd) UCL	1.676	95% Chebyshev(Mean, Sd) UCL	1.989
97.5% Chebyshev(Mean, Sd) UCL	2.423	99% Chebyshev(Mean, Sd) UCL	3.276

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.989

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	1.94	Mean	3.084
Maximum	9.75	Median	2.08
SD	2.65	Std. Error of Mean	0.684
Coefficient of Variation	0.859	Skewness	2.4
Mean of logged Data	0.936	SD of logged Data	0.54

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.289	95% Adjusted-CLT UCL (Chen-1995)	4.663
		95% Modified-t UCL (Johnson-1978)	4.36

Nonparametric Distribution Free UCLs

95% CLT UCL	4.21	95% Jackknife UCL	4.289
95% Standard Bootstrap UCL	4.158	95% Bootstrap-t UCL	30.59
95% Hall's Bootstrap UCL	26.77	95% Percentile Bootstrap UCL	4.142
95% BCA Bootstrap UCL	4.623		
90% Chebyshev(Mean, Sd) UCL	5.137	95% Chebyshev(Mean, Sd) UCL	6.066
97.5% Chebyshev(Mean, Sd) UCL	7.357	99% Chebyshev(Mean, Sd) UCL	9.892

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	6.066

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.025	Mean	26.03
Maximum	202	Median	5.72
SD	51.73	Std. Error of Mean	13.36
Coefficient of Variation	1.987	Skewness	3.238
Mean of logged Data	2.194	SD of logged Data	1.393

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.55	95% Adjusted-CLT UCL (Chen-1995)	59.93
		95% Modified-t UCL (Johnson-1978)	51.41

Nonparametric Distribution Free UCLs

95% CLT UCL	48	95% Jackknife UCL	49.55
95% Standard Bootstrap UCL	47.15	95% Bootstrap-t UCL	141.9
95% Hall's Bootstrap UCL	145.2	95% Percentile Bootstrap UCL	50.2
95% BCA Bootstrap UCL	61.12		
90% Chebyshev(Mean, Sd) UCL	66.1	95% Chebyshev(Mean, Sd) UCL	84.24
97.5% Chebyshev(Mean, Sd) UCL	109.4	99% Chebyshev(Mean, Sd) UCL	158.9

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.025	Mean	33.71
Maximum	272	Median	8.11
SD	71.07	Std. Error of Mean	18.35
Coefficient of Variation	2.108	Skewness	3.129
Mean of logged Data	2.166	SD of logged Data	1.593

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	66.03	95% Adjusted-CLT UCL (Chen-1995)	79.74
		95% Modified-t UCL (Johnson-1978)	68.5

Nonparametric Distribution Free UCLs

95% CLT UCL	63.9	95% Jackknife UCL	66.03
95% Standard Bootstrap UCL	63.1	95% Bootstrap-t UCL	204.4
95% Hall's Bootstrap UCL	189.8	95% Percentile Bootstrap UCL	65.43
95% BCA Bootstrap UCL	84.27		
90% Chebyshev(Mean, Sd) UCL	88.76	95% Chebyshev(Mean, Sd) UCL	113.7
97.5% Chebyshev(Mean, Sd) UCL	148.3	99% Chebyshev(Mean, Sd) UCL	216.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.95	Mean	44.79
Maximum	320	Median	10.8
SD	87.27	Std. Error of Mean	22.53
Coefficient of Variation	1.948	Skewness	2.754
Mean of logged Data	2.538	SD of logged Data	1.549

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	84.48	95% Adjusted-CLT UCL (Chen-1995)	98.98
		95% Modified-t UCL (Johnson-1978)	87.15

Nonparametric Distribution Free UCLs

95% CLT UCL	81.86	95% Jackknife UCL	84.48
95% Standard Bootstrap UCL	82.09	95% Bootstrap-t UCL	236
95% Hall's Bootstrap UCL	252.6	95% Percentile Bootstrap UCL	84.19
95% BCA Bootstrap UCL	100.9		
90% Chebyshev(Mean, Sd) UCL	112.4	95% Chebyshev(Mean, Sd) UCL	143
97.5% Chebyshev(Mean, Sd) UCL	185.5	99% Chebyshev(Mean, Sd) UCL	269

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	3.115	Mean	22.75
Maximum	160	Median	6.19
SD	42.17	Std. Error of Mean	10.89
Coefficient of Variation	1.853	Skewness	2.918
Mean of logged Data	2.163	SD of logged Data	1.278

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.93	95% Adjusted-CLT UCL (Chen-1995)	49.43
		95% Modified-t UCL (Johnson-1978)	43.3

Nonparametric Distribution Free UCLs

95% CLT UCL	40.66	95% Jackknife UCL	41.93
95% Standard Bootstrap UCL	39.96	95% Bootstrap-t UCL	109.5
95% Hall's Bootstrap UCL	118.8	95% Percentile Bootstrap UCL	42.04
95% BCA Bootstrap UCL	52.75		
90% Chebyshev(Mean, Sd) UCL	55.41	95% Chebyshev(Mean, Sd) UCL	70.21
97.5% Chebyshev(Mean, Sd) UCL	90.74	99% Chebyshev(Mean, Sd) UCL	131.1

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	70.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.025	Mean	18.14
Maximum	134	Median	4
SD	35.53	Std. Error of Mean	9.173
Coefficient of Variation	1.958	Skewness	2.948
Mean of logged Data	1.817	SD of logged Data	1.359

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.3	95% Adjusted-CLT UCL (Chen-1995)	40.69
		95% Modified-t UCL (Johnson-1978)	35.46

Nonparametric Distribution Free UCLs

95% CLT UCL	33.23	95% Jackknife UCL	34.3
95% Standard Bootstrap UCL	32.69	95% Bootstrap-t UCL	103.8
95% Hall's Bootstrap UCL	102	95% Percentile Bootstrap UCL	34.18
95% BCA Bootstrap UCL	43.65		
90% Chebyshev(Mean, Sd) UCL	45.66	95% Chebyshev(Mean, Sd) UCL	58.13
97.5% Chebyshev(Mean, Sd) UCL	75.43	99% Chebyshev(Mean, Sd) UCL	109.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 58.13

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.025	Mean	32.58
Maximum	213	Median	8.51
SD	59.22	Std. Error of Mean	15.29
Coefficient of Variation	1.818	Skewness	2.579
Mean of logged Data	2.325	SD of logged Data	1.513

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	59.51	95% Adjusted-CLT UCL (Chen-1995)	68.61
		95% Modified-t UCL (Johnson-1978)	61.21

Nonparametric Distribution Free UCLs

95% CLT UCL	57.73	95% Jackknife UCL	59.51
95% Standard Bootstrap UCL	56.86	95% Bootstrap-t UCL	144.3
95% Hall's Bootstrap UCL	179.2	95% Percentile Bootstrap UCL	59.95
95% BCA Bootstrap UCL	72.45		
90% Chebyshev(Mean, Sd) UCL	78.45	95% Chebyshev(Mean, Sd) UCL	99.23
97.5% Chebyshev(Mean, Sd) UCL	128.1	99% Chebyshev(Mean, Sd) UCL	184.7

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	3.1	Mean	6.79
Maximum	32.6	Median	3.215
SD	8.391	Std. Error of Mean	2.167
Coefficient of Variation	1.236	Skewness	2.694
Mean of logged Data	1.556	SD of logged Data	0.728

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.61	95% Adjusted-CLT UCL (Chen-1995)	11.96
		95% Modified-t UCL (Johnson-1978)	10.86

Nonparametric Distribution Free UCLs

95% CLT UCL	10.35	95% Jackknife UCL	10.61
95% Standard Bootstrap UCL	10.09	95% Bootstrap-t UCL	36.7
95% Hall's Bootstrap UCL	29.81	95% Percentile Bootstrap UCL	10.64
95% BCA Bootstrap UCL	11.88		
90% Chebyshev(Mean, Sd) UCL	13.29	95% Chebyshev(Mean, Sd) UCL	16.23
97.5% Chebyshev(Mean, Sd) UCL	20.32	99% Chebyshev(Mean, Sd) UCL	28.35

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	16.23

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.025	Mean	30.13
Maximum	218	Median	10.1
SD	55.6	Std. Error of Mean	14.35
Coefficient of Variation	1.845	Skewness	3.125
Mean of logged Data	2.261	SD of logged Data	1.553

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.42	95% Adjusted-CLT UCL (Chen-1995)	66.12
		95% Modified-t UCL (Johnson-1978)	57.35

Nonparametric Distribution Free UCLs

95% CLT UCL	53.74	95% Jackknife UCL	55.42
95% Standard Bootstrap UCL	52.52	95% Bootstrap-t UCL	104.4
95% Hall's Bootstrap UCL	138.6	95% Percentile Bootstrap UCL	55.62
95% BCA Bootstrap UCL	67.26		
90% Chebyshev(Mean, Sd) UCL	73.2	95% Chebyshev(Mean, Sd) UCL	92.7
97.5% Chebyshev(Mean, Sd) UCL	119.8	99% Chebyshev(Mean, Sd) UCL	173

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	1.21	Mean	1.391
Maximum	2.77	Median	1.25
SD	0.401	Std. Error of Mean	0.103
Coefficient of Variation	0.288	Skewness	3.365
Mean of logged Data	0.304	SD of logged Data	0.215

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.573	95% Adjusted-CLT UCL (Chen-1995)	1.657
		95% Modified-t UCL (Johnson-1978)	1.588

Nonparametric Distribution Free UCLs

95% CLT UCL	1.561	95% Jackknife UCL	1.573
95% Standard Bootstrap UCL	1.556	95% Bootstrap-t UCL	3.171
95% Hall's Bootstrap UCL	2.446	95% Percentile Bootstrap UCL	1.583
95% BCA Bootstrap UCL	1.69		
90% Chebyshev(Mean, Sd) UCL	1.701	95% Chebyshev(Mean, Sd) UCL	1.842
97.5% Chebyshev(Mean, Sd) UCL	2.037	99% Chebyshev(Mean, Sd) UCL	2.42

Suggested UCL to Use

95% Student's-t UCL	1.573	or 95% Modified-t UCL	1.588

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	3.115	Mean	27.39
Maximum	208	Median	6.19
SD	54.35	Std. Error of Mean	14.03
Coefficient of Variation	1.984	Skewness	3.063
Mean of logged Data	2.227	SD of logged Data	1.355

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.11	95% Adjusted-CLT UCL (Chen-1995)	62.33
		95% Modified-t UCL (Johnson-1978)	53.95

Nonparametric Distribution Free UCLs

95% CLT UCL	50.47	95% Jackknife UCL	52.11
95% Standard Bootstrap UCL	49.53	95% Bootstrap-t UCL	144.1
95% Hall's Bootstrap UCL	147.2	95% Percentile Bootstrap UCL	53.09
95% BCA Bootstrap UCL	66.78		
90% Chebyshev(Mean, Sd) UCL	69.49	95% Chebyshev(Mean, Sd) UCL	88.56
97.5% Chebyshev(Mean, Sd) UCL	115	99% Chebyshev(Mean, Sd) UCL	167

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	88.56

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.93	Mean	4.334
Maximum	9.65	Median	4.02
SD	3.107	Std. Error of Mean	0.802
Coefficient of Variation	0.717	Skewness	0.236
Mean of logged Data	1.125	SD of logged Data	0.935

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.747	95% Adjusted-CLT UCL (Chen-1995)	5.706

		95% Modified-t UCL (Johnson-1978)	5.755

Nonparametric Distribution Free UCLs

95% CLT UCL	5.654	95% Jackknife UCL	5.747
95% Standard Bootstrap UCL	5.597	95% Bootstrap-t UCL	5.77
95% Hall's Bootstrap UCL	5.595	95% Percentile Bootstrap UCL	5.659
95% BCA Bootstrap UCL	5.656		
90% Chebyshev(Mean, Sd) UCL	6.741	95% Chebyshev(Mean, Sd) UCL	7.831
97.5% Chebyshev(Mean, Sd) UCL	9.345	99% Chebyshev(Mean, Sd) UCL	12.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	3.115	Mean	9.293
Maximum	45	Median	3.87
SD	11.36	Std. Error of Mean	2.933
Coefficient of Variation	1.223	Skewness	2.543
Mean of logged Data	1.783	SD of logged Data	0.882

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.46	95% Adjusted-CLT UCL (Chen-1995)	16.18
		95% Modified-t UCL (Johnson-1978)	14.78

Nonparametric Distribution Free UCLs

95% CLT UCL	14.12	95% Jackknife UCL	14.46
95% Standard Bootstrap UCL	13.98	95% Bootstrap-t UCL	20.41
95% Hall's Bootstrap UCL	32.43	95% Percentile Bootstrap UCL	14.87
95% BCA Bootstrap UCL	16.4		
90% Chebyshev(Mean, Sd) UCL	18.09	95% Chebyshev(Mean, Sd) UCL	22.08
97.5% Chebyshev(Mean, Sd) UCL	27.61	99% Chebyshev(Mean, Sd) UCL	38.48

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	22.08

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

	General Statistics		
Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	3.115	Mean	30.64
Maximum	220	Median	9.62
SD	56.08	Std. Error of Mean	14.48
Coefficient of Variation	1.83	Skewness	3.127
Mean of logged Data	2.412	SD of logged Data	1.384

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	56.14	95% Adjusted-CLT UCL (Chen-1995)	66.95
		95% Modified-t UCL (Johnson-1978)	58.09

Nonparametric Distribution Free UCLs

95% CLT UCL	54.46	95% Jackknife UCL	56.14
95% Standard Bootstrap UCL	54.3	95% Bootstrap-t UCL	107.6
95% Hall's Bootstrap UCL	141.5	95% Percentile Bootstrap UCL	56.9
95% BCA Bootstrap UCL	71.22		
90% Chebyshev(Mean, Sd) UCL	74.08	95% Chebyshev(Mean, Sd) UCL	93.76
97.5% Chebyshev(Mean, Sd) UCL	121.1	99% Chebyshev(Mean, Sd) UCL	174.7

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

	General Statistics		
Total Number of Observations	15	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	0.685	Mean	0.763
Maximum	1.37	Median	0.72
SD	0.169	Std. Error of Mean	0.0437
Coefficient of Variation	0.222	Skewness	3.781
Mean of logged Data	-0.287	SD of logged Data	0.169

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.84	95% Adjusted-CLT UCL (Chen-1995)	0.88
		95% Modified-t UCL (Johnson-1978)	0.847

Nonparametric Distribution Free UCLs

95% CLT UCL	0.835	95% Jackknife UCL	0.84
95% Standard Bootstrap UCL	0.833	95% Bootstrap-t UCL	1.205
95% Hall's Bootstrap UCL	1.203	95% Percentile Bootstrap UCL	0.849
95% BCA Bootstrap UCL	0.895		
90% Chebyshev(Mean, Sd) UCL	0.894	95% Chebyshev(Mean, Sd) UCL	0.953
97.5% Chebyshev(Mean, Sd) UCL	1.035	99% Chebyshev(Mean, Sd) UCL	1.197

Suggested UCL to Use

95% Student's-t UCL	0.84	or 95% Modified-t UCL	0.847

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	9.98	Mean	13.2
Maximum	16.2	Median	13
SD	1.815	Std. Error of Mean	0.469
Coefficient of Variation	0.138	Skewness	-0.108
Mean of logged Data	2.571	SD of logged Data	0.141

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.02	95% Adjusted-CLT UCL (Chen-1995)	13.96
		95% Modified-t UCL (Johnson-1978)	14.02

Nonparametric Distribution Free UCLs

95% CLT UCL	13.97	95% Jackknife UCL	14.02
95% Standard Bootstrap UCL	13.94	95% Bootstrap-t UCL	14
95% Hall's Bootstrap UCL	13.97	95% Percentile Bootstrap UCL	13.94
95% BCA Bootstrap UCL	13.9		
90% Chebyshev(Mean, Sd) UCL	14.6	95% Chebyshev(Mean, Sd) UCL	15.24
97.5% Chebyshev(Mean, Sd) UCL	16.13	99% Chebyshev(Mean, Sd) UCL	17.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	8.47	Mean	15.15
Maximum	28.3	Median	11.5
SD	7.003	Std. Error of Mean	1.808
Coefficient of Variation	0.462	Skewness	0.869
Mean of logged Data	2.626	SD of logged Data	0.435

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.34	95% Adjusted-CLT UCL (Chen-1995)	18.56
		95% Modified-t UCL (Johnson-1978)	18.41

Nonparametric Distribution Free UCLs

95% CLT UCL	18.13	95% Jackknife UCL	18.34
95% Standard Bootstrap UCL	18.04	95% Bootstrap-t UCL	19.37
95% Hall's Bootstrap UCL	18.37	95% Percentile Bootstrap UCL	18.2
95% BCA Bootstrap UCL	18.33		
90% Chebyshev(Mean, Sd) UCL	20.58	95% Chebyshev(Mean, Sd) UCL	23.03
97.5% Chebyshev(Mean, Sd) UCL	26.44	99% Chebyshev(Mean, Sd) UCL	33.14

Suggested UCL to Use

95% Student's-t UCL	18.34	or 95% Modified-t UCL	18.41

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	36.9	Mean	51.6
Maximum	79.5	Median	48.2
SD	13.34	Std. Error of Mean	3.443
Coefficient of Variation	0.258	Skewness	1.152
Mean of logged Data	3.916	SD of logged Data	0.239

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57.66	95% Adjusted-CLT UCL (Chen-1995)	58.36
		95% Modified-t UCL (Johnson-1978)	57.84

Nonparametric Distribution Free UCLs

95% CLT UCL	57.26	95% Jackknife UCL	57.66
95% Standard Bootstrap UCL	57.18	95% Bootstrap-t UCL	59.18
95% Hall's Bootstrap UCL	58.03	95% Percentile Bootstrap UCL	57.31
95% BCA Bootstrap UCL	58.3		
90% Chebyshev(Mean, Sd) UCL	61.93	95% Chebyshev(Mean, Sd) UCL	66.61
97.5% Chebyshev(Mean, Sd) UCL	73.1	99% Chebyshev(Mean, Sd) UCL	85.86

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:19:01 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405176) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.712	Mean	1.505
Maximum	4.39	Median	1.26
SD	1.15	Std. Error of Mean	0.383
Coefficient of Variation	0.764	Skewness	2.371
Mean of logged Data	0.232	SD of logged Data	0.581

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.218	95% Adjusted-CLT UCL (Chen-1995)	2.459
		95% Modified-t UCL (Johnson-1978)	2.268

Nonparametric Distribution Free UCLs

95% CLT UCL	2.136	95% Jackknife UCL	2.218
95% Standard Bootstrap UCL	2.104	95% Bootstrap-t UCL	3.153
95% Hall's Bootstrap UCL	4.537	95% Percentile Bootstrap UCL	2.175
95% BCA Bootstrap UCL	2.451		
90% Chebyshev(Mean, Sd) UCL	2.655	95% Chebyshev(Mean, Sd) UCL	3.176
97.5% Chebyshev(Mean, Sd) UCL	3.899	99% Chebyshev(Mean, Sd) UCL	5.32

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	0.391	Mean	1.635
Maximum	9.22	Median	0.53
SD	2.866	Std. Error of Mean	0.955
Coefficient of Variation	1.754	Skewness	2.916
Mean of logged Data	-0.171	SD of logged Data	0.982

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.411	95% Adjusted-CLT UCL (Chen-1995)	4.199
		95% Modified-t UCL (Johnson-1978)	3.566

Nonparametric Distribution Free UCLs

95% CLT UCL	3.206	95% Jackknife UCL	3.411
95% Standard Bootstrap UCL	3.082	95% Bootstrap-t UCL	27.39
95% Hall's Bootstrap UCL	18.35	95% Percentile Bootstrap UCL	3.443
95% BCA Bootstrap UCL	4.46		
90% Chebyshev(Mean, Sd) UCL	4.501	95% Chebyshev(Mean, Sd) UCL	5.8
97.5% Chebyshev(Mean, Sd) UCL	7.602	99% Chebyshev(Mean, Sd) UCL	11.14

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	5.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.105	Mean	6.551
Maximum	38.9	Median	2.155
SD	12.15	Std. Error of Mean	4.049
Coefficient of Variation	1.854	Skewness	2.984
Mean of logged Data	1.2	SD of logged Data	0.948

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	14.08	95% Adjusted-CLT UCL (Chen-1995)	17.52
		95% Modified-t UCL (Johnson-1978)	14.75

Nonparametric Distribution Free UCLs

95% CLT UCL	13.21	95% Jackknife UCL	14.08
95% Standard Bootstrap UCL	12.77	95% Bootstrap-t UCL	218.4
95% Hall's Bootstrap UCL	134.6	95% Percentile Bootstrap UCL	14.52
95% BCA Bootstrap UCL	18.54		
90% Chebyshev(Mean, Sd) UCL	18.7	95% Chebyshev(Mean, Sd) UCL	24.2
97.5% Chebyshev(Mean, Sd) UCL	31.84	99% Chebyshev(Mean, Sd) UCL	46.84

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	24.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	35.26
Maximum	231	Median	7.77
SD	74	Std. Error of Mean	24.67
Coefficient of Variation	2.099	Skewness	2.91
Mean of logged Data	2.299	SD of logged Data	1.559

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	81.12	95% Adjusted-CLT UCL (Chen-1995)	101.4
		95% Modified-t UCL (Johnson-1978)	85.11

Nonparametric Distribution Free UCLs

95% CLT UCL	75.83	95% Jackknife UCL	81.12
95% Standard Bootstrap UCL	74.19	95% Bootstrap-t UCL	304
95% Hall's Bootstrap UCL	263.5	95% Percentile Bootstrap UCL	81.56
95% BCA Bootstrap UCL	108.7		
90% Chebyshev(Mean, Sd) UCL	109.3	95% Chebyshev(Mean, Sd) UCL	142.8
97.5% Chebyshev(Mean, Sd) UCL	189.3	99% Chebyshev(Mean, Sd) UCL	280.7

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	45.52
Maximum	294	Median	10.6
SD	94.09	Std. Error of Mean	31.36
Coefficient of Variation	2.067	Skewness	2.891
Mean of logged Data	2.497	SD of logged Data	1.664

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.8	95% Adjusted-CLT UCL (Chen-1995)	129.4
		95% Modified-t UCL (Johnson-1978)	108.9

Nonparametric Distribution Free UCLs

95% CLT UCL	97.11	95% Jackknife UCL	103.8
95% Standard Bootstrap UCL	93.83	95% Bootstrap-t UCL	353.8
95% Hall's Bootstrap UCL	328.6	95% Percentile Bootstrap UCL	105.8
95% BCA Bootstrap UCL	138.1		
90% Chebyshev(Mean, Sd) UCL	139.6	95% Chebyshev(Mean, Sd) UCL	182.2
97.5% Chebyshev(Mean, Sd) UCL	241.4	99% Chebyshev(Mean, Sd) UCL	357.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	45.78
Maximum	265	Median	13.7
SD	83.76	Std. Error of Mean	27.92
Coefficient of Variation	1.83	Skewness	2.796
Mean of logged Data	2.764	SD of logged Data	1.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	97.69	95% Adjusted-CLT UCL (Chen-1995)	119.5
		95% Modified-t UCL (Johnson-1978)	102

Nonparametric Distribution Free UCLs

95% CLT UCL	91.7	95% Jackknife UCL	97.69
95% Standard Bootstrap UCL	88.52	95% Bootstrap-t UCL	261
95% Hall's Bootstrap UCL	271	95% Percentile Bootstrap UCL	99.05
95% BCA Bootstrap UCL	109.5		
90% Chebyshev(Mean, Sd) UCL	129.5	95% Chebyshev(Mean, Sd) UCL	167.5
97.5% Chebyshev(Mean, Sd) UCL	220.1	99% Chebyshev(Mean, Sd) UCL	323.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	29.24
Maximum	178	Median	8.05
SD	56.37	Std. Error of Mean	18.79
Coefficient of Variation	1.928	Skewness	2.883
Mean of logged Data	2.398	SD of logged Data	1.317

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	64.18	95% Adjusted-CLT UCL (Chen-1995)	79.45
		95% Modified-t UCL (Johnson-1978)	67.19

Nonparametric Distribution Free UCLs

95% CLT UCL	60.15	95% Jackknife UCL	64.18

95% Standard Bootstrap UCL	58.56	95% Bootstrap-t UCL	219.3
95% Hall's Bootstrap UCL	191.7	95% Percentile Bootstrap UCL	64.8
95% BCA Bootstrap UCL	84.33		
90% Chebyshev(Mean, Sd) UCL	85.61	95% Chebyshev(Mean, Sd) UCL	111.1
97.5% Chebyshev(Mean, Sd) UCL	146.6	99% Chebyshev(Mean, Sd) UCL	216.2

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	23.81
Maximum	149	Median	5.46
SD	47.43	Std. Error of Mean	15.81
Coefficient of Variation	1.992	Skewness	2.887
Mean of logged Data	2.082	SD of logged Data	1.413

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.2	95% Adjusted-CLT UCL (Chen-1995)	66.06
		95% Modified-t UCL (Johnson-1978)	55.74

Nonparametric Distribution Free UCLs

95% CLT UCL	49.81	95% Jackknife UCL	53.2
95% Standard Bootstrap UCL	48.43	95% Bootstrap-t UCL	186.6
95% Hall's Bootstrap UCL	162.1	95% Percentile Bootstrap UCL	54.44
95% BCA Bootstrap UCL	71.42		
90% Chebyshev(Mean, Sd) UCL	71.23	95% Chebyshev(Mean, Sd) UCL	92.72
97.5% Chebyshev(Mean, Sd) UCL	122.5	99% Chebyshev(Mean, Sd) UCL	181.1

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	42.2
Maximum	267	Median	10.3
SD	85.24	Std. Error of Mean	28.41
Coefficient of Variation	2.02	Skewness	2.876
Mean of logged Data	2.477	SD of logged Data	1.633

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	95.04	95% Adjusted-CLT UCL (Chen-1995)	118
		95% Modified-t UCL (Johnson-1978)	99.58

Nonparametric Distribution Free UCLs

95% CLT UCL	88.94	95% Jackknife UCL	95.04
95% Standard Bootstrap UCL	86.29	95% Bootstrap-t UCL	282.5
95% Hall's Bootstrap UCL	289.2	95% Percentile Bootstrap UCL	95.83
95% BCA Bootstrap UCL	125.7		
90% Chebyshev(Mean, Sd) UCL	127.4	95% Chebyshev(Mean, Sd) UCL	166.1
97.5% Chebyshev(Mean, Sd) UCL	219.6	99% Chebyshev(Mean, Sd) UCL	324.9

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.24	Mean	9.32
Maximum	50.3	Median	3.315
SD	15.42	Std. Error of Mean	5.141
Coefficient of Variation	1.655	Skewness	2.96
Mean of logged Data	1.673	SD of logged Data	0.887

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.88	95% Adjusted-CLT UCL (Chen-1995)	23.2
		95% Modified-t UCL (Johnson-1978)	19.72

Nonparametric Distribution Free UCLs

95% CLT UCL	17.78	95% Jackknife UCL	18.88
95% Standard Bootstrap UCL	17.28	95% Bootstrap-t UCL	101.5
95% Hall's Bootstrap UCL	80.43	95% Percentile Bootstrap UCL	19.37
95% BCA Bootstrap UCL	24.59		
90% Chebyshev(Mean, Sd) UCL	24.74	95% Chebyshev(Mean, Sd) UCL	31.73
97.5% Chebyshev(Mean, Sd) UCL	41.42	99% Chebyshev(Mean, Sd) UCL	60.47

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	31.73

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	52.58
Maximum	334	Median	12
SD	106.8	Std. Error of Mean	35.6
Coefficient of Variation	2.031	Skewness	2.868
Mean of logged Data	2.621	SD of logged Data	1.721

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	118.8	95% Adjusted-CLT UCL (Chen-1995)	147.5
		95% Modified-t UCL (Johnson-1978)	124.4

Nonparametric Distribution Free UCLs

95% CLT UCL	111.1	95% Jackknife UCL	118.8
95% Standard Bootstrap UCL	107.5	95% Bootstrap-t UCL	404.2
95% Hall's Bootstrap UCL	357.8	95% Percentile Bootstrap UCL	121.4
95% BCA Bootstrap UCL	152.9		
90% Chebyshev(Mean, Sd) UCL	159.4	95% Chebyshev(Mean, Sd) UCL	207.8
97.5% Chebyshev(Mean, Sd) UCL	274.9	99% Chebyshev(Mean, Sd) UCL	406.8

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.924	Mean	2.65
Maximum	7.84	Median	1.315
SD	2.191	Std. Error of Mean	0.73
Coefficient of Variation	0.827	Skewness	1.919
Mean of logged Data	0.735	SD of logged Data	0.701

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.008	95% Adjusted-CLT UCL (Chen-1995)	4.351
		95% Modified-t UCL (Johnson-1978)	4.086

Nonparametric Distribution Free UCLs

95% CLT UCL	3.851	95% Jackknife UCL	4.008
95% Standard Bootstrap UCL	3.754	95% Bootstrap-t UCL	4.979
95% Hall's Bootstrap UCL	7.962	95% Percentile Bootstrap UCL	3.89
95% BCA Bootstrap UCL	4.327		
90% Chebyshev(Mean, Sd) UCL	4.841	95% Chebyshev(Mean, Sd) UCL	5.834
97.5% Chebyshev(Mean, Sd) UCL	7.212	99% Chebyshev(Mean, Sd) UCL	9.918

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.255	Mean	34.25
Maximum	213	Median	8.61
SD	67.72	Std. Error of Mean	22.57
Coefficient of Variation	1.977	Skewness	2.886
Mean of logged Data	2.474	SD of logged Data	1.388

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	76.23	95% Adjusted-CLT UCL (Chen-1995)	94.58
		95% Modified-t UCL (Johnson-1978)	79.85

Nonparametric Distribution Free UCLs

95% CLT UCL	71.38	95% Jackknife UCL	76.23
95% Standard Bootstrap UCL	70.52	95% Bootstrap-t UCL	271.7
95% Hall's Bootstrap UCL	233.4	95% Percentile Bootstrap UCL	77.69
95% BCA Bootstrap UCL	98.93		
90% Chebyshev(Mean, Sd) UCL	102	95% Chebyshev(Mean, Sd) UCL	132.6
97.5% Chebyshev(Mean, Sd) UCL	175.2	99% Chebyshev(Mean, Sd) UCL	258.9

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.21	Mean	2.429
Maximum	5.35	Median	1.62
SD	1.655	Std. Error of Mean	0.552
Coefficient of Variation	0.682	Skewness	1.394
Mean of logged Data	0.719	SD of logged Data	0.583

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3.455	95% Adjusted-CLT UCL (Chen-1995)	3.61
		95% Modified-t UCL (Johnson-1978)	3.498

Nonparametric Distribution Free UCLs

95% CLT UCL	3.336	95% Jackknife UCL	3.455
95% Standard Bootstrap UCL	3.286	95% Bootstrap-t UCL	5.557
95% Hall's Bootstrap UCL	9.209	95% Percentile Bootstrap UCL	3.299
95% BCA Bootstrap UCL	3.6		
90% Chebyshev(Mean, Sd) UCL	4.084	95% Chebyshev(Mean, Sd) UCL	4.834
97.5% Chebyshev(Mean, Sd) UCL	5.875	99% Chebyshev(Mean, Sd) UCL	7.919

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	27.01
Maximum	175	Median	5.02
SD	55.87	Std. Error of Mean	18.62
Coefficient of Variation	2.069	Skewness	2.925
Mean of logged Data	2.231	SD of logged Data	1.32

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	61.64	95% Adjusted-CLT UCL (Chen-1995)	77.04
		95% Modified-t UCL (Johnson-1978)	64.66

Nonparametric Distribution Free UCLs

95% CLT UCL	57.64	95% Jackknife UCL	61.64
95% Standard Bootstrap UCL	55.73	95% Bootstrap-t UCL	254.2
95% Hall's Bootstrap UCL	201.5	95% Percentile Bootstrap UCL	63.27
95% BCA Bootstrap UCL	80.71		
90% Chebyshev(Mean, Sd) UCL	82.88	95% Chebyshev(Mean, Sd) UCL	108.2
97.5% Chebyshev(Mean, Sd) UCL	143.3	99% Chebyshev(Mean, Sd) UCL	212.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.255	Mean	53.19
Maximum	334	Median	12.5
SD	106.5	Std. Error of Mean	35.5
Coefficient of Variation	2.002	Skewness	2.874
Mean of logged Data	2.775	SD of logged Data	1.555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	119.2	95% Adjusted-CLT UCL (Chen-1995)	147.9
		95% Modified-t UCL (Johnson-1978)	124.9

Nonparametric Distribution Free UCLs

95% CLT UCL	111.6	95% Jackknife UCL	119.2
95% Standard Bootstrap UCL	107.8	95% Bootstrap-t UCL	387.6
95% Hall's Bootstrap UCL	356.6	95% Percentile Bootstrap UCL	118.8
95% BCA Bootstrap UCL	156.6		
90% Chebyshev(Mean, Sd) UCL	159.7	95% Chebyshev(Mean, Sd) UCL	207.9
97.5% Chebyshev(Mean, Sd) UCL	274.9	99% Chebyshev(Mean, Sd) UCL	406.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.55	Mean	14.7
Maximum	17.1	Median	15.6
SD	2.001	Std. Error of Mean	0.667
Coefficient of Variation	0.136	Skewness	-0.729
Mean of logged Data	2.679	SD of logged Data	0.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.94	95% Adjusted-CLT UCL (Chen-1995)	15.62
		95% Modified-t UCL (Johnson-1978)	15.91

Nonparametric Distribution Free UCLs

95% CLT UCL	15.8	95% Jackknife UCL	15.94
95% Standard Bootstrap UCL	15.74	95% Bootstrap-t UCL	15.7
95% Hall's Bootstrap UCL	15.56	95% Percentile Bootstrap UCL	15.66
95% BCA Bootstrap UCL	15.59		
90% Chebyshev(Mean, Sd) UCL	16.7	95% Chebyshev(Mean, Sd) UCL	17.61
97.5% Chebyshev(Mean, Sd) UCL	18.86	99% Chebyshev(Mean, Sd) UCL	21.34

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.65	Mean	23.15
Maximum	36.8	Median	26.9
SD	12.34	Std. Error of Mean	4.113
Coefficient of Variation	0.533	Skewness	-0.501
Mean of logged Data	2.953	SD of logged Data	0.717

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	30.8	95% Adjusted-CLT UCL (Chen-1995)	29.18
		95% Modified-t UCL (Johnson-1978)	30.68

Nonparametric Distribution Free UCLs

95% CLT UCL	29.92	95% Jackknife UCL	30.8
95% Standard Bootstrap UCL	29.64	95% Bootstrap-t UCL	29.71
95% Hall's Bootstrap UCL	28.37	95% Percentile Bootstrap UCL	29.44
95% BCA Bootstrap UCL	29.04		
90% Chebyshev(Mean, Sd) UCL	35.49	95% Chebyshev(Mean, Sd) UCL	41.08
97.5% Chebyshev(Mean, Sd) UCL	48.84	99% Chebyshev(Mean, Sd) UCL	64.07

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	51.3	Mean	61.77
Maximum	74.5	Median	58.5
SD	9.31	Std. Error of Mean	3.103
Coefficient of Variation	0.151	Skewness	0.409
Mean of logged Data	4.113	SD of logged Data	0.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	67.54	95% Adjusted-CLT UCL (Chen-1995)	67.32
		95% Modified-t UCL (Johnson-1978)	67.61

Nonparametric Distribution Free UCLs

95% CLT UCL	66.87	95% Jackknife UCL	67.54
95% Standard Bootstrap UCL	66.65	95% Bootstrap-t UCL	68.25
95% Hall's Bootstrap UCL	65.84	95% Percentile Bootstrap UCL	66.8
95% BCA Bootstrap UCL	67.13		
90% Chebyshev(Mean, Sd) UCL	71.08	95% Chebyshev(Mean, Sd) UCL	75.29
97.5% Chebyshev(Mean, Sd) UCL	81.15	99% Chebyshev(Mean, Sd) UCL	92.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:20:49 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405177 - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.38	Mean	0.568
Maximum	0.837	Median	0.525
SD	0.135	Std. Error of Mean	0.045
Coefficient of Variation	0.238	Skewness	1.041
Mean of logged Data	-0.589	SD of logged Data	0.227

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.652	95% Adjusted-CLT UCL (Chen-1995)	0.659
		95% Modified-t UCL (Johnson-1978)	0.654

Nonparametric Distribution Free UCLs

95% CLT UCL	0.642	95% Jackknife UCL	0.652
95% Standard Bootstrap UCL	0.639	95% Bootstrap-t UCL	0.727
95% Hall's Bootstrap UCL	1.296	95% Percentile Bootstrap UCL	0.641
95% BCA Bootstrap UCL	0.652		
90% Chebyshev(Mean, Sd) UCL	0.703	95% Chebyshev(Mean, Sd) UCL	0.764
97.5% Chebyshev(Mean, Sd) UCL	0.849	99% Chebyshev(Mean, Sd) UCL	1.016

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.85	Mean	2.247
Maximum	3.21	Median	2.125
SD	0.397	Std. Error of Mean	0.132
Coefficient of Variation	0.177	Skewness	2.108
Mean of logged Data	0.798	SD of logged Data	0.158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.493	95% Adjusted-CLT UCL (Chen-1995)	2.564
		95% Modified-t UCL (Johnson-1978)	2.509

Nonparametric Distribution Free UCLs

95% CLT UCL	2.465	95% Jackknife UCL	2.493
95% Standard Bootstrap UCL	2.449	95% Bootstrap-t UCL	2.928
95% Hall's Bootstrap UCL	3.782	95% Percentile Bootstrap UCL	2.471
95% BCA Bootstrap UCL	2.561		
90% Chebyshev(Mean, Sd) UCL	2.644	95% Chebyshev(Mean, Sd) UCL	2.824
97.5% Chebyshev(Mean, Sd) UCL	3.074	99% Chebyshev(Mean, Sd) UCL	3.564

Suggested UCL to Use

95% Student's-t UCL	2.493	or 95% Modified-t UCL	2.509

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	10.51
Maximum	25.2	Median	10.4
SD	8.179	Std. Error of Mean	2.726
Coefficient of Variation	0.778	Skewness	0.534
Mean of logged Data	1.976	SD of logged Data	1.008

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	15.58	95% Adjusted-CLT UCL (Chen-1995)	15.51
		95% Modified-t UCL (Johnson-1978)	15.66

Nonparametric Distribution Free UCLs

95% CLT UCL	14.99	95% Jackknife UCL	15.58
95% Standard Bootstrap UCL	14.81	95% Bootstrap-t UCL	15.94
95% Hall's Bootstrap UCL	15.17	95% Percentile Bootstrap UCL	14.74
95% BCA Bootstrap UCL	15.27		
90% Chebyshev(Mean, Sd) UCL	18.69	95% Chebyshev(Mean, Sd) UCL	22.39
97.5% Chebyshev(Mean, Sd) UCL	27.53	99% Chebyshev(Mean, Sd) UCL	37.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.56	Mean	13.62
Maximum	33.9	Median	13
SD	11.3	Std. Error of Mean	3.766
Coefficient of Variation	0.829	Skewness	0.542
Mean of logged Data	2.129	SD of logged Data	1.185

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.62	95% Adjusted-CLT UCL (Chen-1995)	20.54
		95% Modified-t UCL (Johnson-1978)	20.74

Nonparametric Distribution Free UCLs

95% CLT UCL	19.82	95% Jackknife UCL	20.62
95% Standard Bootstrap UCL	19.49	95% Bootstrap-t UCL	21.99
95% Hall's Bootstrap UCL	20.47	95% Percentile Bootstrap UCL	19.53
95% BCA Bootstrap UCL	20.16		
90% Chebyshev(Mean, Sd) UCL	24.92	95% Chebyshev(Mean, Sd) UCL	30.04
97.5% Chebyshev(Mean, Sd) UCL	37.14	99% Chebyshev(Mean, Sd) UCL	51.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.84	Mean	17.29
Maximum	42.4	Median	15
SD	14.14	Std. Error of Mean	4.713
Coefficient of Variation	0.818	Skewness	0.603
Mean of logged Data	2.432	SD of logged Data	1.068

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26.05	95% Adjusted-CLT UCL (Chen-1995)	26.05
		95% Modified-t UCL (Johnson-1978)	26.21

Nonparametric Distribution Free UCLs

95% CLT UCL	25.04	95% Jackknife UCL	26.05
95% Standard Bootstrap UCL	24.41	95% Bootstrap-t UCL	27.91
95% Hall's Bootstrap UCL	25.08	95% Percentile Bootstrap UCL	24.96
95% BCA Bootstrap UCL	26.05		
90% Chebyshev(Mean, Sd) UCL	31.43	95% Chebyshev(Mean, Sd) UCL	37.83
97.5% Chebyshev(Mean, Sd) UCL	46.72	99% Chebyshev(Mean, Sd) UCL	64.18

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.105	Mean	9.982
Maximum	23.1	Median	9.84
SD	6.952	Std. Error of Mean	2.317
Coefficient of Variation	0.696	Skewness	0.777
Mean of logged Data	2.059	SD of logged Data	0.764

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.29	95% Adjusted-CLT UCL (Chen-1995)	14.43
		95% Modified-t UCL (Johnson-1978)	14.39

Nonparametric Distribution Free UCLs

95% CLT UCL	13.79	95% Jackknife UCL	14.29
95% Standard Bootstrap UCL	13.66	95% Bootstrap-t UCL	15
95% Hall's Bootstrap UCL	14.65	95% Percentile Bootstrap UCL	13.84
95% BCA Bootstrap UCL	13.97		
90% Chebyshev(Mean, Sd) UCL	16.93	95% Chebyshev(Mean, Sd) UCL	20.08
97.5% Chebyshev(Mean, Sd) UCL	24.45	99% Chebyshev(Mean, Sd) UCL	33.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	8.054
Maximum	18.4	Median	7.89
SD	5.993	Std. Error of Mean	1.998
Coefficient of Variation	0.744	Skewness	0.619
Mean of logged Data	1.783	SD of logged Data	0.875

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.77	95% Adjusted-CLT UCL (Chen-1995)	11.78
		95% Modified-t UCL (Johnson-1978)	11.84

Nonparametric Distribution Free UCLs

95% CLT UCL	11.34	95% Jackknife UCL	11.77

95% Standard Bootstrap UCL	11.2	95% Bootstrap-t UCL	12.6
95% Hall's Bootstrap UCL	12.03	95% Percentile Bootstrap UCL	11.3
95% BCA Bootstrap UCL	11.72		
90% Chebyshev(Mean, Sd) UCL	14.05	95% Chebyshev(Mean, Sd) UCL	16.76
97.5% Chebyshev(Mean, Sd) UCL	20.53	99% Chebyshev(Mean, Sd) UCL	27.93

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.015	Mean	13.65
Maximum	33.1	Median	12.2
SD	11.45	Std. Error of Mean	3.817
Coefficient of Variation	0.839	Skewness	0.554
Mean of logged Data	2.15	SD of logged Data	1.14

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.75	95% Adjusted-CLT UCL (Chen-1995)	20.68
		95% Modified-t UCL (Johnson-1978)	20.87

Nonparametric Distribution Free UCLs

95% CLT UCL	19.93	95% Jackknife UCL	20.75
95% Standard Bootstrap UCL	19.62	95% Bootstrap-t UCL	21.97
95% Hall's Bootstrap UCL	20.08	95% Percentile Bootstrap UCL	19.79
95% BCA Bootstrap UCL	20.4		
90% Chebyshev(Mean, Sd) UCL	25.1	95% Chebyshev(Mean, Sd) UCL	30.29
97.5% Chebyshev(Mean, Sd) UCL	37.49	99% Chebyshev(Mean, Sd) UCL	51.63

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.62	Mean	3.904
Maximum	6.59	Median	3.285
SD	1.216	Std. Error of Mean	0.405
Coefficient of Variation	0.312	Skewness	1.526
Mean of logged Data	1.325	SD of logged Data	0.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.658	95% Adjusted-CLT UCL (Chen-1995)	4.792
		95% Modified-t UCL (Johnson-1978)	4.693

Nonparametric Distribution Free UCLs

95% CLT UCL	4.571	95% Jackknife UCL	4.658
95% Standard Bootstrap UCL	4.511	95% Bootstrap-t UCL	5.206
95% Hall's Bootstrap UCL	8.06	95% Percentile Bootstrap UCL	4.563
95% BCA Bootstrap UCL	4.721		
90% Chebyshev(Mean, Sd) UCL	5.121	95% Chebyshev(Mean, Sd) UCL	5.672
97.5% Chebyshev(Mean, Sd) UCL	6.436	99% Chebyshev(Mean, Sd) UCL	7.938

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.93	Mean	18.36
Maximum	45	Median	12.9
SD	16.45	Std. Error of Mean	5.483
Coefficient of Variation	0.896	Skewness	0.643
Mean of logged Data	2.372	SD of logged Data	1.24

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.56	95% Adjusted-CLT UCL (Chen-1995)	28.64
		95% Modified-t UCL (Johnson-1978)	28.75

Nonparametric Distribution Free UCLs

95% CLT UCL	27.38	95% Jackknife UCL	28.56
95% Standard Bootstrap UCL	27.03	95% Bootstrap-t UCL	29.96
95% Hall's Bootstrap UCL	29.84	95% Percentile Bootstrap UCL	27.52
95% BCA Bootstrap UCL	27.65		
90% Chebyshev(Mean, Sd) UCL	34.81	95% Chebyshev(Mean, Sd) UCL	42.26
97.5% Chebyshev(Mean, Sd) UCL	52.61	99% Chebyshev(Mean, Sd) UCL	72.92

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.105	Mean	11.5
Maximum	28.2	Median	11
SD	8.576	Std. Error of Mean	2.859
Coefficient of Variation	0.746	Skewness	0.857
Mean of logged Data	2.157	SD of logged Data	0.839

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	16.82	95% Adjusted-CLT UCL (Chen-1995)	17.08
		95% Modified-t UCL (Johnson-1978)	16.95

Nonparametric Distribution Free UCLs

95% CLT UCL	16.2	95% Jackknife UCL	16.82
95% Standard Bootstrap UCL	15.95	95% Bootstrap-t UCL	18.15
95% Hall's Bootstrap UCL	17.95	95% Percentile Bootstrap UCL	16.13
95% BCA Bootstrap UCL	16.59		
90% Chebyshev(Mean, Sd) UCL	20.08	95% Chebyshev(Mean, Sd) UCL	23.96
97.5% Chebyshev(Mean, Sd) UCL	29.35	99% Chebyshev(Mean, Sd) UCL	39.95

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.105	Mean	9.173
Maximum	21.9	Median	5.29
SD	7.143	Std. Error of Mean	2.381
Coefficient of Variation	0.779	Skewness	0.987
Mean of logged Data	1.948	SD of logged Data	0.774

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.6	95% Adjusted-CLT UCL (Chen-1995)	13.93
		95% Modified-t UCL (Johnson-1978)	13.73

Nonparametric Distribution Free UCLs

95% CLT UCL	13.09	95% Jackknife UCL	13.6
95% Standard Bootstrap UCL	12.82	95% Bootstrap-t UCL	15.49
95% Hall's Bootstrap UCL	14.91	95% Percentile Bootstrap UCL	13.11
95% BCA Bootstrap UCL	13.68		
90% Chebyshev(Mean, Sd) UCL	16.32	95% Chebyshev(Mean, Sd) UCL	19.55
97.5% Chebyshev(Mean, Sd) UCL	24.04	99% Chebyshev(Mean, Sd) UCL	32.86

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.86	Mean	17.94
Maximum	43.3	Median	13
SD	15.38	Std. Error of Mean	5.125
Coefficient of Variation	0.857	Skewness	0.63
Mean of logged Data	2.439	SD of logged Data	1.096

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.47	95% Adjusted-CLT UCL (Chen-1995)	27.52
		95% Modified-t UCL (Johnson-1978)	27.65

Nonparametric Distribution Free UCLs

95% CLT UCL	26.37	95% Jackknife UCL	27.47
95% Standard Bootstrap UCL	25.77	95% Bootstrap-t UCL	29.68
95% Hall's Bootstrap UCL	27.56	95% Percentile Bootstrap UCL	26.33
95% BCA Bootstrap UCL	26.4		
90% Chebyshev(Mean, Sd) UCL	33.32	95% Chebyshev(Mean, Sd) UCL	40.28
97.5% Chebyshev(Mean, Sd) UCL	49.95	99% Chebyshev(Mean, Sd) UCL	68.94

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.3	Mean	11.26
Maximum	12.3	Median	10.9
SD	0.757	Std. Error of Mean	0.252
Coefficient of Variation	0.0672	Skewness	0.443
Mean of logged Data	2.419	SD of logged Data	0.0666

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	11.72	95% Adjusted-CLT UCL (Chen-1995)	11.71
		95% Modified-t UCL (Johnson-1978)	11.73

Nonparametric Distribution Free UCLs

95% CLT UCL	11.67	95% Jackknife UCL	11.72
95% Standard Bootstrap UCL	11.65	95% Bootstrap-t UCL	11.76
95% Hall's Bootstrap UCL	11.59	95% Percentile Bootstrap UCL	11.67
95% BCA Bootstrap UCL	11.68		
90% Chebyshev(Mean, Sd) UCL	12.01	95% Chebyshev(Mean, Sd) UCL	12.36
97.5% Chebyshev(Mean, Sd) UCL	12.83	99% Chebyshev(Mean, Sd) UCL	13.77

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	9.91	Mean	18.99
Maximum	32.4	Median	19.9
SD	6.764	Std. Error of Mean	2.255
Coefficient of Variation	0.356	Skewness	0.531
Mean of logged Data	2.884	SD of logged Data	0.375

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.18	95% Adjusted-CLT UCL (Chen-1995)	23.12
		95% Modified-t UCL (Johnson-1978)	23.25

Nonparametric Distribution Free UCLs

95% CLT UCL	22.7	95% Jackknife UCL	23.18
95% Standard Bootstrap UCL	22.48	95% Bootstrap-t UCL	23.23
95% Hall's Bootstrap UCL	24.19	95% Percentile Bootstrap UCL	22.4
95% BCA Bootstrap UCL	22.6		
90% Chebyshev(Mean, Sd) UCL	25.75	95% Chebyshev(Mean, Sd) UCL	28.82
97.5% Chebyshev(Mean, Sd) UCL	33.07	99% Chebyshev(Mean, Sd) UCL	41.42

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	33.9	Mean	40.98
Maximum	53	Median	38.8
SD	6.225	Std. Error of Mean	2.075
Coefficient of Variation	0.152	Skewness	0.973
Mean of logged Data	3.703	SD of logged Data	0.146

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	44.84	95% Adjusted-CLT UCL (Chen-1995)	45.11
		95% Modified-t UCL (Johnson-1978)	44.95

Nonparametric Distribution Free UCLs

95% CLT UCL	44.39	95% Jackknife UCL	44.84
95% Standard Bootstrap UCL	44.13	95% Bootstrap-t UCL	46.16
95% Hall's Bootstrap UCL	44.99	95% Percentile Bootstrap UCL	44.48
95% BCA Bootstrap UCL	45.06		
90% Chebyshev(Mean, Sd) UCL	47.2	95% Chebyshev(Mean, Sd) UCL	50.02
97.5% Chebyshev(Mean, Sd) UCL	53.94	99% Chebyshev(Mean, Sd) UCL	61.62

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:23:03 AM
From File	Table 1. APN 32405178 - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.35	Mean	1.68
Maximum	7.02	Median	0.525
SD	2.252	Std. Error of Mean	0.751
Coefficient of Variation	1.341	Skewness	2.079
Mean of logged Data	-0.0851	SD of logged Data	1.07

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.076	95% Adjusted-CLT UCL (Chen-1995)	3.471
		95% Modified-t UCL (Johnson-1978)	3.163

Nonparametric Distribution Free UCLs

95% CLT UCL	2.915	95% Jackknife UCL	3.076
95% Standard Bootstrap UCL	2.867	95% Bootstrap-t UCL	7.338
95% Hall's Bootstrap UCL	8.595	95% Percentile Bootstrap UCL	2.946
95% BCA Bootstrap UCL	3.456		
90% Chebyshev(Mean, Sd) UCL	3.932	95% Chebyshev(Mean, Sd) UCL	4.952
97.5% Chebyshev(Mean, Sd) UCL	6.369	99% Chebyshev(Mean, Sd) UCL	9.15

Suggested UCL to Use

95% Hall's Bootstrap UCL	8.595

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	11.44
Maximum	54.1	Median	2.16
SD	17.69	Std. Error of Mean	5.896
Coefficient of Variation	1.546	Skewness	2.174
Mean of logged Data	1.576	SD of logged Data	1.288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	22.41	95% Adjusted-CLT UCL (Chen-1995)	25.7
		95% Modified-t UCL (Johnson-1978)	23.12

Nonparametric Distribution Free UCLs

95% CLT UCL	21.14	95% Jackknife UCL	22.41
95% Standard Bootstrap UCL	20.36	95% Bootstrap-t UCL	56.11
95% Hall's Bootstrap UCL	67.89	95% Percentile Bootstrap UCL	21.62
95% BCA Bootstrap UCL	26.32		
90% Chebyshev(Mean, Sd) UCL	29.13	95% Chebyshev(Mean, Sd) UCL	37.14
97.5% Chebyshev(Mean, Sd) UCL	48.26	99% Chebyshev(Mean, Sd) UCL	70.11

Suggested UCL to Use

95% Hall's Bootstrap UCL	67.89

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.135	Mean	85.49
Maximum	376	Median	9.78
SD	132.1	Std. Error of Mean	44.04
Coefficient of Variation	1.546	Skewness	1.666
Mean of logged Data	2.929	SD of logged Data	2.005

Note: Sample size is small (e.g., <10), if data are collected using ISM approach

you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	167.4	95% Adjusted-CLT UCL (Chen-1995)	184.1
		95% Modified-t UCL (Johnson-1978)	171.5

Nonparametric Distribution Free UCLs

95% CLT UCL	157.9	95% Jackknife UCL	167.4
95% Standard Bootstrap UCL	151.7	95% Bootstrap-t UCL	286.2
95% Hall's Bootstrap UCL	217	95% Percentile Bootstrap UCL	160.7
95% BCA Bootstrap UCL	175.1		
90% Chebyshev(Mean, Sd) UCL	217.6	95% Chebyshev(Mean, Sd) UCL	277.5
97.5% Chebyshev(Mean, Sd) UCL	360.5	99% Chebyshev(Mean, Sd) UCL	523.7

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.69	Mean	102
Maximum	394	Median	14.1
SD	148.4	Std. Error of Mean	49.46
Coefficient of Variation	1.455	Skewness	1.321
Mean of logged Data	3.091	SD of logged Data	2.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	194	95% Adjusted-CLT UCL (Chen-1995)	206.6
		95% Modified-t UCL (Johnson-1978)	197.6

Nonparametric Distribution Free UCLs

95% CLT UCL	183.3	95% Jackknife UCL	194
95% Standard Bootstrap UCL	178.3	95% Bootstrap-t UCL	299
95% Hall's Bootstrap UCL	179.1	95% Percentile Bootstrap UCL	185.5

95% BCA Bootstrap UCL	208.8		
90% Chebyshev(Mean, Sd) UCL	250.4	95% Chebyshev(Mean, Sd) UCL	317.6
97.5% Chebyshev(Mean, Sd) UCL	410.9	99% Chebyshev(Mean, Sd) UCL	594.1

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.44	Mean	126
Maximum	552	Median	18.4
SD	191.5	Std. Error of Mean	63.84
Coefficient of Variation	1.52	Skewness	1.684
Mean of logged Data	3.357	SD of logged Data	2.016

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	244.7	95% Adjusted-CLT UCL (Chen-1995)	269.3
		95% Modified-t UCL (Johnson-1978)	250.7

Nonparametric Distribution Free UCLs

95% CLT UCL	231	95% Jackknife UCL	244.7
95% Standard Bootstrap UCL	224.6	95% Bootstrap-t UCL	381.5
95% Hall's Bootstrap UCL	285.3	95% Percentile Bootstrap UCL	228.5
95% BCA Bootstrap UCL	255.9		
90% Chebyshev(Mean, Sd) UCL	317.5	95% Chebyshev(Mean, Sd) UCL	404.3
97.5% Chebyshev(Mean, Sd) UCL	524.7	99% Chebyshev(Mean, Sd) UCL	761.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.285	Mean	70.05
Maximum	289	Median	9.85
SD	103.8	Std. Error of Mean	34.61
Coefficient of Variation	1.482	Skewness	1.521
Mean of logged Data	2.938	SD of logged Data	1.806

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	134.4	95% Adjusted-CLT UCL (Chen-1995)	145.7
		95% Modified-t UCL (Johnson-1978)	137.3

Nonparametric Distribution Free UCLs

95% CLT UCL	127	95% Jackknife UCL	134.4
95% Standard Bootstrap UCL	124.1	95% Bootstrap-t UCL	223.3
95% Hall's Bootstrap UCL	156.2	95% Percentile Bootstrap UCL	125.2
95% BCA Bootstrap UCL	139.7		
90% Chebyshev(Mean, Sd) UCL	173.9	95% Chebyshev(Mean, Sd) UCL	220.9
97.5% Chebyshev(Mean, Sd) UCL	286.2	99% Chebyshev(Mean, Sd) UCL	414.4

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.135	Mean	62.29
Maximum	264	Median	6.95
SD	94.17	Std. Error of Mean	31.39
Coefficient of Variation	1.512	Skewness	1.559
Mean of logged Data	2.681	SD of logged Data	1.934

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	120.7	95% Adjusted-CLT UCL (Chen-1995)	131.3
		95% Modified-t UCL (Johnson-1978)	123.4

Nonparametric Distribution Free UCLs

95% CLT UCL	113.9	95% Jackknife UCL	120.7
95% Standard Bootstrap UCL	112.1	95% Bootstrap-t UCL	195.7
95% Hall's Bootstrap UCL	126.5	95% Percentile Bootstrap UCL	118.9
95% BCA Bootstrap UCL	129.9		
90% Chebyshev(Mean, Sd) UCL	156.5	95% Chebyshev(Mean, Sd) UCL	199.1
97.5% Chebyshev(Mean, Sd) UCL	258.3	99% Chebyshev(Mean, Sd) UCL	374.6

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.16	Mean	111.5
Maximum	502	Median	13.4
SD	174.4	Std. Error of Mean	58.14
Coefficient of Variation	1.564	Skewness	1.741
Mean of logged Data	3.172	SD of logged Data	2.04

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	219.6	95% Adjusted-CLT UCL (Chen-1995)	243.2
		95% Modified-t UCL (Johnson-1978)	225.3

Nonparametric Distribution Free UCLs

95% CLT UCL	207.2	95% Jackknife UCL	219.6
95% Standard Bootstrap UCL	199.5	95% Bootstrap-t UCL	384.7
95% Hall's Bootstrap UCL	293.9	95% Percentile Bootstrap UCL	207.4
95% BCA Bootstrap UCL	235.7		
90% Chebyshev(Mean, Sd) UCL	285.9	95% Chebyshev(Mean, Sd) UCL	365
97.5% Chebyshev(Mean, Sd) UCL	474.6	99% Chebyshev(Mean, Sd) UCL	690

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.65	Mean	19.32
Maximum	77.5	Median	3.325
SD	26.7	Std. Error of Mean	8.9
Coefficient of Variation	1.382	Skewness	1.638
Mean of logged Data	2.109	SD of logged Data	1.342

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.87	95% Adjusted-CLT UCL (Chen-1995)	39.15
		95% Modified-t UCL (Johnson-1978)	36.68

Nonparametric Distribution Free UCLs

95% CLT UCL	33.96	95% Jackknife UCL	35.87
95% Standard Bootstrap UCL	32.86	95% Bootstrap-t UCL	60.9
95% Hall's Bootstrap UCL	42.74	95% Percentile Bootstrap UCL	34.15
95% BCA Bootstrap UCL	37.25		
90% Chebyshev(Mean, Sd) UCL	46.02	95% Chebyshev(Mean, Sd) UCL	58.11
97.5% Chebyshev(Mean, Sd) UCL	74.9	99% Chebyshev(Mean, Sd) UCL	107.9

Suggested UCL to Use

95% Hall's Bootstrap UCL	42.74

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.41	Mean	183.8
Maximum	881	Median	19.3
SD	300.5	Std. Error of Mean	100.2
Coefficient of Variation	1.635	Skewness	1.916
Mean of logged Data	3.529	SD of logged Data	2.154

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	370	95% Adjusted-CLT UCL (Chen-1995)	416.9
		95% Modified-t UCL (Johnson-1978)	380.7

Nonparametric Distribution Free UCLs

95% CLT UCL	348.5	95% Jackknife UCL	370
95% Standard Bootstrap UCL	342.4	95% Bootstrap-t UCL	688
95% Hall's Bootstrap UCL	876	95% Percentile Bootstrap UCL	352
95% BCA Bootstrap UCL	408		
90% Chebyshev(Mean, Sd) UCL	484.2	95% Chebyshev(Mean, Sd) UCL	620.3
97.5% Chebyshev(Mean, Sd) UCL	809.3	99% Chebyshev(Mean, Sd) UCL	1180

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.275	Mean	2.402
Maximum	8.07	Median	1.325
SD	2.271	Std. Error of Mean	0.757
Coefficient of Variation	0.946	Skewness	2.421
Mean of logged Data	0.632	SD of logged Data	0.652

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	3.809	95% Adjusted-CLT UCL (Chen-1995)	4.299
		95% Modified-t UCL (Johnson-1978)	3.911

Nonparametric Distribution Free UCLs

95% CLT UCL	3.647	95% Jackknife UCL	3.809
95% Standard Bootstrap UCL	3.551	95% Bootstrap-t UCL	12.32
95% Hall's Bootstrap UCL	13.86	95% Percentile Bootstrap UCL	3.641
95% BCA Bootstrap UCL	4.251		
90% Chebyshev(Mean, Sd) UCL	4.673	95% Chebyshev(Mean, Sd) UCL	5.701
97.5% Chebyshev(Mean, Sd) UCL	7.129	99% Chebyshev(Mean, Sd) UCL	9.934

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 5.701

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.285	Mean	80.47
Maximum	314	Median	11.5
SD	116.3	Std. Error of Mean	38.77
Coefficient of Variation	1.445	Skewness	1.371
Mean of logged Data	3.051	SD of logged Data	1.856

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	152.6	95% Adjusted-CLT UCL (Chen-1995)	163.2
		95% Modified-t UCL (Johnson-1978)	155.5

Nonparametric Distribution Free UCLs

95% CLT UCL	144.2	95% Jackknife UCL	152.6
95% Standard Bootstrap UCL	140.9	95% Bootstrap-t UCL	234.8
95% Hall's Bootstrap UCL	161.9	95% Percentile Bootstrap UCL	142.3
95% BCA Bootstrap UCL	167.5		
90% Chebyshev(Mean, Sd) UCL	196.8	95% Chebyshev(Mean, Sd) UCL	249.5
97.5% Chebyshev(Mean, Sd) UCL	322.6	99% Chebyshev(Mean, Sd) UCL	466.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.61	Mean	83.11
Maximum	439	Median	9.1
SD	145.3	Std. Error of Mean	48.45
Coefficient of Variation	1.749	Skewness	2.247
Mean of logged Data	2.876	SD of logged Data	1.921

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	173.2	95% Adjusted-CLT UCL (Chen-1995)	201.6
		95% Modified-t UCL (Johnson-1978)	179.2

Nonparametric Distribution Free UCLs

95% CLT UCL	162.8	95% Jackknife UCL	173.2
95% Standard Bootstrap UCL	158.2	95% Bootstrap-t UCL	374.7
95% Hall's Bootstrap UCL	421	95% Percentile Bootstrap UCL	168.5
95% BCA Bootstrap UCL	183		
90% Chebyshev(Mean, Sd) UCL	228.5	95% Chebyshev(Mean, Sd) UCL	294.3
97.5% Chebyshev(Mean, Sd) UCL	385.7	99% Chebyshev(Mean, Sd) UCL	565.2

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.45	Mean	174.3
Maximum	827	Median	18.5
SD	283.2	Std. Error of Mean	94.39
Coefficient of Variation	1.624	Skewness	1.883
Mean of logged Data	3.495	SD of logged Data	2.137

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	349.9	95% Adjusted-CLT UCL (Chen-1995)	392.9
		95% Modified-t UCL (Johnson-1978)	359.7

Nonparametric Distribution Free UCLs

95% CLT UCL	329.6	95% Jackknife UCL	349.9
95% Standard Bootstrap UCL	318.5	95% Bootstrap-t UCL	646.8
95% Hall's Bootstrap UCL	828.4	95% Percentile Bootstrap UCL	334.4
95% BCA Bootstrap UCL	399.6		
90% Chebyshev(Mean, Sd) UCL	457.5	95% Chebyshev(Mean, Sd) UCL	585.8
97.5% Chebyshev(Mean, Sd) UCL	763.8	99% Chebyshev(Mean, Sd) UCL	1114

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.6	Mean	11.01
Maximum	11.7	Median	11
SD	0.326	Std. Error of Mean	0.109
Coefficient of Variation	0.0296	Skewness	1.045
Mean of logged Data	2.399	SD of logged Data	0.0293

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.21	95% Adjusted-CLT UCL (Chen-1995)	11.23
		95% Modified-t UCL (Johnson-1978)	11.22

Nonparametric Distribution Free UCLs

95% CLT UCL	11.19	95% Jackknife UCL	11.21

95% Standard Bootstrap UCL	11.18	95% Bootstrap-t UCL	11.27
95% Hall's Bootstrap UCL	11.37	95% Percentile Bootstrap UCL	11.2
95% BCA Bootstrap UCL	11.21		
90% Chebyshev(Mean, Sd) UCL	11.34	95% Chebyshev(Mean, Sd) UCL	11.48
97.5% Chebyshev(Mean, Sd) UCL	11.69	99% Chebyshev(Mean, Sd) UCL	12.09

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.58	Mean	30.59
Maximum	64	Median	25.9
SD	20.05	Std. Error of Mean	6.683
Coefficient of Variation	0.655	Skewness	0.524
Mean of logged Data	3.198	SD of logged Data	0.738

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	43.01	95% Adjusted-CLT UCL (Chen-1995)	42.83
		95% Modified-t UCL (Johnson-1978)	43.21

Nonparametric Distribution Free UCLs

95% CLT UCL	41.58	95% Jackknife UCL	43.01
95% Standard Bootstrap UCL	40.88	95% Bootstrap-t UCL	44.71
95% Hall's Bootstrap UCL	41.08	95% Percentile Bootstrap UCL	40.97
95% BCA Bootstrap UCL	42.33		
90% Chebyshev(Mean, Sd) UCL	50.64	95% Chebyshev(Mean, Sd) UCL	59.72
97.5% Chebyshev(Mean, Sd) UCL	72.32	99% Chebyshev(Mean, Sd) UCL	97.08

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	29.5	Mean	36.1
Maximum	43.2	Median	34.8
SD	4.828	Std. Error of Mean	1.609
Coefficient of Variation	0.134	Skewness	0.341
Mean of logged Data	3.578	SD of logged Data	0.133

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.09	95% Adjusted-CLT UCL (Chen-1995)	38.94
		95% Modified-t UCL (Johnson-1978)	39.12

Nonparametric Distribution Free UCLs

95% CLT UCL	38.75	95% Jackknife UCL	39.09
95% Standard Bootstrap UCL	38.57	95% Bootstrap-t UCL	39.47
95% Hall's Bootstrap UCL	38.84	95% Percentile Bootstrap UCL	38.56
95% BCA Bootstrap UCL	38.67		
90% Chebyshev(Mean, Sd) UCL	40.93	95% Chebyshev(Mean, Sd) UCL	43.11
97.5% Chebyshev(Mean, Sd) UCL	46.15	99% Chebyshev(Mean, Sd) UCL	52.11

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:42:24 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405206A) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.475	Mean	3.582
Maximum	18.4	Median	2.31
SD	5.671	Std. Error of Mean	1.89
Coefficient of Variation	1.583	Skewness	2.773
Mean of logged Data	0.551	SD of logged Data	1.204

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.097	95% Adjusted-CLT UCL (Chen-1995)	8.558
		95% Modified-t UCL (Johnson-1978)	7.388

Nonparametric Distribution Free UCLs

95% CLT UCL	6.691	95% Jackknife UCL	7.097
95% Standard Bootstrap UCL	6.507	95% Bootstrap-t UCL	15.49
95% Hall's Bootstrap UCL	19.98	95% Percentile Bootstrap UCL	7.156
95% BCA Bootstrap UCL	9.075		
90% Chebyshev(Mean, Sd) UCL	9.253	95% Chebyshev(Mean, Sd) UCL	11.82
97.5% Chebyshev(Mean, Sd) UCL	15.39	99% Chebyshev(Mean, Sd) UCL	22.39

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	1.93	Mean	8.134
Maximum	28.4	Median	6.84
SD	8.305	Std. Error of Mean	2.768
Coefficient of Variation	1.021	Skewness	2.12
Mean of logged Data	1.707	SD of logged Data	0.927

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.28	95% Adjusted-CLT UCL (Chen-1995)	14.78
		95% Modified-t UCL (Johnson-1978)	13.61

Nonparametric Distribution Free UCLs

95% CLT UCL	12.69	95% Jackknife UCL	13.28
95% Standard Bootstrap UCL	12.38	95% Bootstrap-t UCL	18.17
95% Hall's Bootstrap UCL	31.06	95% Percentile Bootstrap UCL	13.21
95% BCA Bootstrap UCL	14.55		
90% Chebyshev(Mean, Sd) UCL	16.44	95% Chebyshev(Mean, Sd) UCL	20.2
97.5% Chebyshev(Mean, Sd) UCL	25.42	99% Chebyshev(Mean, Sd) UCL	35.68

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.64	Mean	79.13
Maximum	252	Median	78.3
SD	84.95	Std. Error of Mean	28.32
Coefficient of Variation	1.074	Skewness	1.157
Mean of logged Data	3.296	SD of logged Data	2.003

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	131.8	95% Adjusted-CLT UCL (Chen-1995)	137.4
		95% Modified-t UCL (Johnson-1978)	133.6

Nonparametric Distribution Free UCLs

95% CLT UCL	125.7	95% Jackknife UCL	131.8
95% Standard Bootstrap UCL	123.5	95% Bootstrap-t UCL	158.4
95% Hall's Bootstrap UCL	245.6	95% Percentile Bootstrap UCL	129.6
95% BCA Bootstrap UCL	131.6		
90% Chebyshev(Mean, Sd) UCL	164.1	95% Chebyshev(Mean, Sd) UCL	202.6
97.5% Chebyshev(Mean, Sd) UCL	256	99% Chebyshev(Mean, Sd) UCL	360.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.56	Mean	116.4
Maximum	332	Median	102
SD	127.9	Std. Error of Mean	42.65
Coefficient of Variation	1.099	Skewness	1.034
Mean of logged Data	3.597	SD of logged Data	2.107

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	195.7	95% Adjusted-CLT UCL (Chen-1995)	202.3
		95% Modified-t UCL (Johnson-1978)	198.2

Nonparametric Distribution Free UCLs

95% CLT UCL	186.5	95% Jackknife UCL	195.7
95% Standard Bootstrap UCL	181.2	95% Bootstrap-t UCL	258.1
95% Hall's Bootstrap UCL	583.2	95% Percentile Bootstrap UCL	188
95% BCA Bootstrap UCL	197.9		
90% Chebyshev(Mean, Sd) UCL	244.3	95% Chebyshev(Mean, Sd) UCL	302.3
97.5% Chebyshev(Mean, Sd) UCL	382.7	99% Chebyshev(Mean, Sd) UCL	540.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	141.2
Maximum	411	Median	136
SD	148.2	Std. Error of Mean	49.41
Coefficient of Variation	1.05	Skewness	0.942
Mean of logged Data	3.882	SD of logged Data	1.999

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	233.1	95% Adjusted-CLT UCL (Chen-1995)	239.1
		95% Modified-t UCL (Johnson-1978)	235.7

Nonparametric Distribution Free UCLs

95% CLT UCL	222.5	95% Jackknife UCL	233.1
95% Standard Bootstrap UCL	216.2	95% Bootstrap-t UCL	289
95% Hall's Bootstrap UCL	324.7	95% Percentile Bootstrap UCL	221.9
95% BCA Bootstrap UCL	232.4		
90% Chebyshev(Mean, Sd) UCL	289.5	95% Chebyshev(Mean, Sd) UCL	356.6
97.5% Chebyshev(Mean, Sd) UCL	449.8	99% Chebyshev(Mean, Sd) UCL	632.8

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.99	Mean	92.38
Maximum	267	Median	86.4
SD	99.66	Std. Error of Mean	33.22
Coefficient of Variation	1.079	Skewness	0.984
Mean of logged Data	3.468	SD of logged Data	1.952

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	154.2	95% Adjusted-CLT UCL (Chen-1995)	158.7
		95% Modified-t UCL (Johnson-1978)	156

Nonparametric Distribution Free UCLs

95% CLT UCL	147	95% Jackknife UCL	154.2
95% Standard Bootstrap UCL	142.5	95% Bootstrap-t UCL	194.6
95% Hall's Bootstrap UCL	244.1	95% Percentile Bootstrap UCL	146.9
95% BCA Bootstrap UCL	156.4		
90% Chebyshev(Mean, Sd) UCL	192	95% Chebyshev(Mean, Sd) UCL	237.2
97.5% Chebyshev(Mean, Sd) UCL	299.8	99% Chebyshev(Mean, Sd) UCL	422.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.87	Mean	58.12
Maximum	169	Median	52.2
SD	63.13	Std. Error of Mean	21.04
Coefficient of Variation	1.086	Skewness	1.031
Mean of logged Data	3.047	SD of logged Data	1.884

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	97.25	95% Adjusted-CLT UCL (Chen-1995)	100.5
		95% Modified-t UCL (Johnson-1978)	98.46

Nonparametric Distribution Free UCLs

95% CLT UCL	92.74	95% Jackknife UCL	97.25

95% Standard Bootstrap UCL	90.37	95% Bootstrap-t UCL	128
95% Hall's Bootstrap UCL	181.1	95% Percentile Bootstrap UCL	92.85
95% BCA Bootstrap UCL	95.9		
90% Chebyshev(Mean, Sd) UCL	121.3	95% Chebyshev(Mean, Sd) UCL	149.8
97.5% Chebyshev(Mean, Sd) UCL	189.5	99% Chebyshev(Mean, Sd) UCL	267.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	108.1
Maximum	355	Median	106
SD	118.1	Std. Error of Mean	39.35
Coefficient of Variation	1.092	Skewness	1.252
Mean of logged Data	3.575	SD of logged Data	2.048

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	181.3	95% Adjusted-CLT UCL (Chen-1995)	190.4
		95% Modified-t UCL (Johnson-1978)	184.1

Nonparametric Distribution Free UCLs

95% CLT UCL	172.9	95% Jackknife UCL	181.3
95% Standard Bootstrap UCL	170.1	95% Bootstrap-t UCL	230.9
95% Hall's Bootstrap UCL	510.7	95% Percentile Bootstrap UCL	172.9
95% BCA Bootstrap UCL	187.7		
90% Chebyshev(Mean, Sd) UCL	226.2	95% Chebyshev(Mean, Sd) UCL	279.7
97.5% Chebyshev(Mean, Sd) UCL	353.9	99% Chebyshev(Mean, Sd) UCL	499.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.97	Mean	25.1
Maximum	71.4	Median	19.9
SD	27.25	Std. Error of Mean	9.084
Coefficient of Variation	1.086	Skewness	1.218
Mean of logged Data	2.588	SD of logged Data	1.28

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	41.99	95% Adjusted-CLT UCL (Chen-1995)	43.98
		95% Modified-t UCL (Johnson-1978)	42.61

Nonparametric Distribution Free UCLs

95% CLT UCL	40.04	95% Jackknife UCL	41.99
95% Standard Bootstrap UCL	39.22	95% Bootstrap-t UCL	62.79
95% Hall's Bootstrap UCL	141.4	95% Percentile Bootstrap UCL	39.57
95% BCA Bootstrap UCL	42.59		
90% Chebyshev(Mean, Sd) UCL	52.35	95% Chebyshev(Mean, Sd) UCL	64.7
97.5% Chebyshev(Mean, Sd) UCL	81.83	99% Chebyshev(Mean, Sd) UCL	115.5

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.03	Mean	103.1
Maximum	338	Median	118
SD	107.2	Std. Error of Mean	35.73
Coefficient of Variation	1.039	Skewness	1.3
Mean of logged Data	3.598	SD of logged Data	1.995

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	169.6	95% Adjusted-CLT UCL (Chen-1995)	178.5
		95% Modified-t UCL (Johnson-1978)	172.2

Nonparametric Distribution Free UCLs

95% CLT UCL	161.9	95% Jackknife UCL	169.6
95% Standard Bootstrap UCL	157.7	95% Bootstrap-t UCL	193.2
95% Hall's Bootstrap UCL	223.3	95% Percentile Bootstrap UCL	162.8
95% BCA Bootstrap UCL	173.4		
90% Chebyshev(Mean, Sd) UCL	210.3	95% Chebyshev(Mean, Sd) UCL	258.9
97.5% Chebyshev(Mean, Sd) UCL	326.3	99% Chebyshev(Mean, Sd) UCL	458.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.09	Mean	1.704
Maximum	4.82	Median	1.3
SD	1.178	Std. Error of Mean	0.393
Coefficient of Variation	0.691	Skewness	2.904
Mean of logged Data	0.412	SD of logged Data	0.45

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.435	95% Adjusted-CLT UCL (Chen-1995)	2.757
		95% Modified-t UCL (Johnson-1978)	2.498

Nonparametric Distribution Free UCLs

95% CLT UCL	2.35	95% Jackknife UCL	2.435
95% Standard Bootstrap UCL	2.31	95% Bootstrap-t UCL	5.736
95% Hall's Bootstrap UCL	5.214	95% Percentile Bootstrap UCL	2.466
95% BCA Bootstrap UCL	2.862		
90% Chebyshev(Mean, Sd) UCL	2.883	95% Chebyshev(Mean, Sd) UCL	3.416
97.5% Chebyshev(Mean, Sd) UCL	4.157	99% Chebyshev(Mean, Sd) UCL	5.612

Suggested UCL to Use

95% Student's-t UCL	2.435	or 95% Modified-t UCL	2.498

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	99.46
Maximum	292	Median	82.1
SD	112.6	Std. Error of Mean	37.53
Coefficient of Variation	1.132	Skewness	1.11
Mean of logged Data	3.509	SD of logged Data	1.964

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	169.3	95% Adjusted-CLT UCL (Chen-1995)	176
		95% Modified-t UCL (Johnson-1978)	171.6

Nonparametric Distribution Free UCLs

95% CLT UCL	161.2	95% Jackknife UCL	169.3
95% Standard Bootstrap UCL	158.7	95% Bootstrap-t UCL	239.5
95% Hall's Bootstrap UCL	540.1	95% Percentile Bootstrap UCL	162.1
95% BCA Bootstrap UCL	171.2		
90% Chebyshev(Mean, Sd) UCL	212.1	95% Chebyshev(Mean, Sd) UCL	263.1
97.5% Chebyshev(Mean, Sd) UCL	333.9	99% Chebyshev(Mean, Sd) UCL	472.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.89	Mean	6.873
Maximum	35.2	Median	4.76
SD	10.79	Std. Error of Mean	3.596
Coefficient of Variation	1.569	Skewness	2.823
Mean of logged Data	1.235	SD of logged Data	1.184

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.56	95% Adjusted-CLT UCL (Chen-1995)	16.4
		95% Modified-t UCL (Johnson-1978)	14.12

Nonparametric Distribution Free UCLs

95% CLT UCL	12.79	95% Jackknife UCL	13.56
95% Standard Bootstrap UCL	12.47	95% Bootstrap-t UCL	29.29
95% Hall's Bootstrap UCL	43.33	95% Percentile Bootstrap UCL	13.66
95% BCA Bootstrap UCL	14.94		
90% Chebyshev(Mean, Sd) UCL	17.66	95% Chebyshev(Mean, Sd) UCL	22.55
97.5% Chebyshev(Mean, Sd) UCL	29.33	99% Chebyshev(Mean, Sd) UCL	42.65

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.04	Mean	38.96
Maximum	137	Median	34.6
SD	42.28	Std. Error of Mean	14.09
Coefficient of Variation	1.085	Skewness	1.703
Mean of logged Data	2.908	SD of logged Data	1.532

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL　　95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	65.17	95% Adjusted-CLT UCL (Chen-1995)	70.69
		95% Modified-t UCL (Johnson-1978)	66.5

Nonparametric Distribution Free UCLs

95% CLT UCL	62.14	95% Jackknife UCL	65.17
95% Standard Bootstrap UCL	60.41	95% Bootstrap-t UCL	81.73
95% Hall's Bootstrap UCL	166.3	95% Percentile Bootstrap UCL	62.67
95% BCA Bootstrap UCL	67.45		
90% Chebyshev(Mean, Sd) UCL	81.24	95% Chebyshev(Mean, Sd) UCL	100.4
97.5% Chebyshev(Mean, Sd) UCL	127	99% Chebyshev(Mean, Sd) UCL	179.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.49	Mean	112
Maximum	404	Median	120
SD	126.2	Std. Error of Mean	42.07
Coefficient of Variation	1.127	Skewness	1.675
Mean of logged Data	3.676	SD of logged Data	1.952

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	190.2	95% Adjusted-CLT UCL (Chen-1995)	206.3
		95% Modified-t UCL (Johnson-1978)	194.1

Nonparametric Distribution Free UCLs

95% CLT UCL	181.2	95% Jackknife UCL	190.2
95% Standard Bootstrap UCL	177.6	95% Bootstrap-t UCL	230.7
95% Hall's Bootstrap UCL	485.3	95% Percentile Bootstrap UCL	183.1
95% BCA Bootstrap UCL	207.3		
90% Chebyshev(Mean, Sd) UCL	238.2	95% Chebyshev(Mean, Sd) UCL	295.4
97.5% Chebyshev(Mean, Sd) UCL	374.7	99% Chebyshev(Mean, Sd) UCL	530.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	0.715	Mean	0.759
Maximum	1.01	Median	0.725
SD	0.0947	Std. Error of Mean	0.0316
Coefficient of Variation	0.125	Skewness	2.941
Mean of logged Data	-0.282	SD of logged Data	0.11

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.818	95% Adjusted-CLT UCL (Chen-1995)	0.844
		95% Modified-t UCL (Johnson-1978)	0.823

Nonparametric Distribution Free UCLs

95% CLT UCL	0.811	95% Jackknife UCL	0.818
95% Standard Bootstrap UCL	0.808	95% Bootstrap-t UCL	1.204
95% Hall's Bootstrap UCL	1.052	95% Percentile Bootstrap UCL	0.821
95% BCA Bootstrap UCL	0.827		
90% Chebyshev(Mean, Sd) UCL	0.854	95% Chebyshev(Mean, Sd) UCL	0.896
97.5% Chebyshev(Mean, Sd) UCL	0.956	99% Chebyshev(Mean, Sd) UCL	1.073

Suggested UCL to Use

95% Student's-t UCL	0.818	or 95% Modified-t UCL	0.823

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12	Mean	12.89
Maximum	13.8	Median	12.7
SD	0.713	Std. Error of Mean	0.238
Coefficient of Variation	0.0553	Skewness	0.179
Mean of logged Data	2.555	SD of logged Data	0.0552

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.33	95% Adjusted-CLT UCL (Chen-1995)	13.3
		95% Modified-t UCL (Johnson-1978)	13.33

Nonparametric Distribution Free UCLs

95% CLT UCL	13.28	95% Jackknife UCL	13.33
95% Standard Bootstrap UCL	13.25	95% Bootstrap-t UCL	13.39
95% Hall's Bootstrap UCL	13.2	95% Percentile Bootstrap UCL	13.24
95% BCA Bootstrap UCL	13.24		
90% Chebyshev(Mean, Sd) UCL	13.6	95% Chebyshev(Mean, Sd) UCL	13.93
97.5% Chebyshev(Mean, Sd) UCL	14.37	99% Chebyshev(Mean, Sd) UCL	15.25

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.3	Mean	26.67
Maximum	65.6	Median	20.6
SD	19.98	Std. Error of Mean	6.66
Coefficient of Variation	0.749	Skewness	1.353
Mean of logged Data	3.064	SD of logged Data	0.686

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.05	95% Adjusted-CLT UCL (Chen-1995)	40.83
		95% Modified-t UCL (Johnson-1978)	39.55

Nonparametric Distribution Free UCLs

95% CLT UCL	37.62	95% Jackknife UCL	39.05

95% Standard Bootstrap UCL	36.93	95% Bootstrap-t UCL	57.33
95% Hall's Bootstrap UCL	117.4	95% Percentile Bootstrap UCL	37.43
95% BCA Bootstrap UCL	39.23		
90% Chebyshev(Mean, Sd) UCL	46.65	95% Chebyshev(Mean, Sd) UCL	55.7
97.5% Chebyshev(Mean, Sd) UCL	68.26	99% Chebyshev(Mean, Sd) UCL	92.93

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	43.3	Mean	49.78
Maximum	63.2	Median	43.7
SD	9.104	Std. Error of Mean	3.035
Coefficient of Variation	0.183	Skewness	0.871
Mean of logged Data	3.894	SD of logged Data	0.174

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	55.42	95% Adjusted-CLT UCL (Chen-1995)	55.71
		95% Modified-t UCL (Johnson-1978)	55.57

Nonparametric Distribution Free UCLs

95% CLT UCL	54.77	95% Jackknife UCL	55.42
95% Standard Bootstrap UCL	54.47	95% Bootstrap-t UCL	56.76
95% Hall's Bootstrap UCL	52.71	95% Percentile Bootstrap UCL	54.3
95% BCA Bootstrap UCL	55.77		
90% Chebyshev(Mean, Sd) UCL	58.88	95% Chebyshev(Mean, Sd) UCL	63.01
97.5% Chebyshev(Mean, Sd) UCL	68.73	99% Chebyshev(Mean, Sd) UCL	79.97

Suggested UCL to Use

95% Student's-t UCL	55.42	or 95% Modified-t UCL	55.57

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:44:18 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405212) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.63	Mean	0.852
Maximum	1.36	Median	0.791
SD	0.215	Std. Error of Mean	0.0718
Coefficient of Variation	0.253	Skewness	1.841
Mean of logged Data	-0.184	SD of logged Data	0.225

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.985	95% Adjusted-CLT UCL (Chen-1995)	1.017
		95% Modified-t UCL (Johnson-1978)	0.993

Nonparametric Distribution Free UCLs

95% CLT UCL	0.97	95% Jackknife UCL	0.985
95% Standard Bootstrap UCL	0.962	95% Bootstrap-t UCL	1.09
95% Hall's Bootstrap UCL	1.554	95% Percentile Bootstrap UCL	0.972
95% BCA Bootstrap UCL	1.016		
90% Chebyshev(Mean, Sd) UCL	1.067	95% Chebyshev(Mean, Sd) UCL	1.165
97.5% Chebyshev(Mean, Sd) UCL	1.3	99% Chebyshev(Mean, Sd) UCL	1.566

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0

Minimum	0.491	Mean	0.55
Maximum	0.746	Median	0.525
SD	0.0788	Std. Error of Mean	0.0263
Coefficient of Variation	0.143	Skewness	2.368
Mean of logged Data	-0.606	SD of logged Data	0.128

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.599	95% Adjusted-CLT UCL (Chen-1995)	0.615
		95% Modified-t UCL (Johnson-1978)	0.602

Nonparametric Distribution Free UCLs

95% CLT UCL	0.593	95% Jackknife UCL	0.599
95% Standard Bootstrap UCL	0.59	95% Bootstrap-t UCL	0.743
95% Hall's Bootstrap UCL	0.849	95% Percentile Bootstrap UCL	0.596
95% BCA Bootstrap UCL	0.617		
90% Chebyshev(Mean, Sd) UCL	0.629	95% Chebyshev(Mean, Sd) UCL	0.664
97.5% Chebyshev(Mean, Sd) UCL	0.714	99% Chebyshev(Mean, Sd) UCL	0.811

Suggested UCL to Use

95% Student's-t UCL	0.599	or 95% Modified-t UCL	0.602

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.995	Mean	2.154
Maximum	2.47	Median	2.125
SD	0.141	Std. Error of Mean	0.0471
Coefficient of Variation	0.0656	Skewness	1.541
Mean of logged Data	0.765	SD of logged Data	0.0634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	2.241	95% Adjusted-CLT UCL (Chen-1995)	2.257
		95% Modified-t UCL (Johnson-1978)	2.246

Nonparametric Distribution Free UCLs

95% CLT UCL	2.231	95% Jackknife UCL	2.241
95% Standard Bootstrap UCL	2.226	95% Bootstrap-t UCL	2.322
95% Hall's Bootstrap UCL	2.739	95% Percentile Bootstrap UCL	2.232
95% BCA Bootstrap UCL	2.247		
90% Chebyshev(Mean, Sd) UCL	2.295	95% Chebyshev(Mean, Sd) UCL	2.359
97.5% Chebyshev(Mean, Sd) UCL	2.448	99% Chebyshev(Mean, Sd) UCL	2.623

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	7.382
Maximum	22.1	Median	5.13
SD	7.65	Std. Error of Mean	2.55
Coefficient of Variation	1.036	Skewness	1.46
Mean of logged Data	1.578	SD of logged Data	0.94

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	12.12	95% Adjusted-CLT UCL (Chen-1995)	12.9
		95% Modified-t UCL (Johnson-1978)	12.33

Nonparametric Distribution Free UCLs

95% CLT UCL	11.58	95% Jackknife UCL	12.12
95% Standard Bootstrap UCL	11.3	95% Bootstrap-t UCL	22.53
95% Hall's Bootstrap UCL	39.61	95% Percentile Bootstrap UCL	11.6
95% BCA Bootstrap UCL	12.61		
90% Chebyshev(Mean, Sd) UCL	15.03	95% Chebyshev(Mean, Sd) UCL	18.5
97.5% Chebyshev(Mean, Sd) UCL	23.31	99% Chebyshev(Mean, Sd) UCL	32.76

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.73	Mean	10.42
Maximum	34.1	Median	7.23
SD	12.15	Std. Error of Mean	4.05
Coefficient of Variation	1.166	Skewness	1.474
Mean of logged Data	1.757	SD of logged Data	1.143

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.95	95% Adjusted-CLT UCL (Chen-1995)	19.21
		95% Modified-t UCL (Johnson-1978)	18.29

Nonparametric Distribution Free UCLs

95% CLT UCL	17.08	95% Jackknife UCL	17.95
95% Standard Bootstrap UCL	16.75	95% Bootstrap-t UCL	34.24
95% Hall's Bootstrap UCL	62.38	95% Percentile Bootstrap UCL	16.81
95% BCA Bootstrap UCL	19.1		
90% Chebyshev(Mean, Sd) UCL	22.57	95% Chebyshev(Mean, Sd) UCL	28.08
97.5% Chebyshev(Mean, Sd) UCL	35.72	99% Chebyshev(Mean, Sd) UCL	50.72

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	14.41
Maximum	46	Median	10.2
SD	16.07	Std. Error of Mean	5.358
Coefficient of Variation	1.116	Skewness	1.475
Mean of logged Data	2.149	SD of logged Data	1.064

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.37	95% Adjusted-CLT UCL (Chen-1995)	26.04
		95% Modified-t UCL (Johnson-1978)	24.81

Nonparametric Distribution Free UCLs

95% CLT UCL	23.22	95% Jackknife UCL	24.37
95% Standard Bootstrap UCL	22.89	95% Bootstrap-t UCL	45.17
95% Hall's Bootstrap UCL	83.38	95% Percentile Bootstrap UCL	22.7
95% BCA Bootstrap UCL	25.11		
90% Chebyshev(Mean, Sd) UCL	30.48	95% Chebyshev(Mean, Sd) UCL	37.76
97.5% Chebyshev(Mean, Sd) UCL	47.86	99% Chebyshev(Mean, Sd) UCL	67.71

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	8.818
Maximum	26.4	Median	5.49
SD	8.89	Std. Error of Mean	2.963
Coefficient of Variation	1.008	Skewness	1.59
Mean of logged Data	1.824	SD of logged Data	0.825

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.33	95% Adjusted-CLT UCL (Chen-1995)	15.37
		95% Modified-t UCL (Johnson-1978)	14.59

Nonparametric Distribution Free UCLs

95% CLT UCL	13.69	95% Jackknife UCL	14.33

95% Standard Bootstrap UCL	13.43	95% Bootstrap-t UCL	35.73
95% Hall's Bootstrap UCL	47.59	95% Percentile Bootstrap UCL	13.78
95% BCA Bootstrap UCL	14.87		
90% Chebyshev(Mean, Sd) UCL	17.71	95% Chebyshev(Mean, Sd) UCL	21.74
97.5% Chebyshev(Mean, Sd) UCL	27.33	99% Chebyshev(Mean, Sd) UCL	38.3

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	5.961
Maximum	17.9	Median	4.26
SD	5.934	Std. Error of Mean	1.978
Coefficient of Variation	0.996	Skewness	1.583
Mean of logged Data	1.433	SD of logged Data	0.834

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.639	95% Adjusted-CLT UCL (Chen-1995)	10.33
		95% Modified-t UCL (Johnson-1978)	9.813

Nonparametric Distribution Free UCLs

95% CLT UCL	9.214	95% Jackknife UCL	9.639
95% Standard Bootstrap UCL	8.997	95% Bootstrap-t UCL	20.51
95% Hall's Bootstrap UCL	33.58	95% Percentile Bootstrap UCL	9.096
95% BCA Bootstrap UCL	9.955		
90% Chebyshev(Mean, Sd) UCL	11.89	95% Chebyshev(Mean, Sd) UCL	14.58
97.5% Chebyshev(Mean, Sd) UCL	18.31	99% Chebyshev(Mean, Sd) UCL	25.64

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	11.07
Maximum	34.3	Median	8.29
SD	12.24	Std. Error of Mean	4.08
Coefficient of Variation	1.106	Skewness	1.347
Mean of logged Data	1.835	SD of logged Data	1.149

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.65	95% Adjusted-CLT UCL (Chen-1995)	19.74
		95% Modified-t UCL (Johnson-1978)	18.96

Nonparametric Distribution Free UCLs

95% CLT UCL	17.78	95% Jackknife UCL	18.65
95% Standard Bootstrap UCL	17.21	95% Bootstrap-t UCL	31.64
95% Hall's Bootstrap UCL	60.06	95% Percentile Bootstrap UCL	17.73
95% BCA Bootstrap UCL	19.18		
90% Chebyshev(Mean, Sd) UCL	23.31	95% Chebyshev(Mean, Sd) UCL	28.85
97.5% Chebyshev(Mean, Sd) UCL	36.55	99% Chebyshev(Mean, Sd) UCL	51.67

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.07	Mean	3.902
Maximum	6.82	Median	3.27
SD	1.384	Std. Error of Mean	0.461
Coefficient of Variation	0.355	Skewness	1.76
Mean of logged Data	1.317	SD of logged Data	0.298

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.76	95% Adjusted-CLT UCL (Chen-1995)	4.95
		95% Modified-t UCL (Johnson-1978)	4.805

Nonparametric Distribution Free UCLs

95% CLT UCL	4.661	95% Jackknife UCL	4.76
95% Standard Bootstrap UCL	4.576	95% Bootstrap-t UCL	15.3
95% Hall's Bootstrap UCL	16.08	95% Percentile Bootstrap UCL	4.694
95% BCA Bootstrap UCL	4.884		
90% Chebyshev(Mean, Sd) UCL	5.286	95% Chebyshev(Mean, Sd) UCL	5.913
97.5% Chebyshev(Mean, Sd) UCL	6.783	99% Chebyshev(Mean, Sd) UCL	8.492

Suggested UCL to Use

95% Student's-t UCL	4.76	or 95% Modified-t UCL	4.805

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.035	Mean	12.91
Maximum	37.2	Median	9.45
SD	13.49	Std. Error of Mean	4.497
Coefficient of Variation	1.045	Skewness	1.022
Mean of logged Data	1.952	SD of logged Data	1.233

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.27	95% Adjusted-CLT UCL (Chen-1995)	21.95
		95% Modified-t UCL (Johnson-1978)	21.53

Nonparametric Distribution Free UCLs

95% CLT UCL	20.31	95% Jackknife UCL	21.27
95% Standard Bootstrap UCL	19.7	95% Bootstrap-t UCL	26.43
95% Hall's Bootstrap UCL	22.53	95% Percentile Bootstrap UCL	20.51
95% BCA Bootstrap UCL	21.74		
90% Chebyshev(Mean, Sd) UCL	26.4	95% Chebyshev(Mean, Sd) UCL	32.51
97.5% Chebyshev(Mean, Sd) UCL	40.99	99% Chebyshev(Mean, Sd) UCL	57.65

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	9.154
Maximum	27.6	Median	5.82
SD	9.301	Std. Error of Mean	3.1
Coefficient of Variation	1.016	Skewness	1.579
Mean of logged Data	1.851	SD of logged Data	0.842

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.92	95% Adjusted-CLT UCL (Chen-1995)	16
		95% Modified-t UCL (Johnson-1978)	15.19

Nonparametric Distribution Free UCLs

95% CLT UCL	14.25	95% Jackknife UCL	14.92
95% Standard Bootstrap UCL	14.04	95% Bootstrap-t UCL	36.58
95% Hall's Bootstrap UCL	49.79	95% Percentile Bootstrap UCL	14.26
95% BCA Bootstrap UCL	15.9		
90% Chebyshev(Mean, Sd) UCL	18.45	95% Chebyshev(Mean, Sd) UCL	22.67
97.5% Chebyshev(Mean, Sd) UCL	28.51	99% Chebyshev(Mean, Sd) UCL	40

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.94	Mean	2.089
Maximum	8.14	Median	1.12
SD	2.307	Std. Error of Mean	0.769
Coefficient of Variation	1.104	Skewness	2.82
Mean of logged Data	0.449	SD of logged Data	0.681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.519	95% Adjusted-CLT UCL (Chen-1995)	4.126
		95% Modified-t UCL (Johnson-1978)	3.639

Nonparametric Distribution Free UCLs

95% CLT UCL	3.354	95% Jackknife UCL	3.519
95% Standard Bootstrap UCL	3.272	95% Bootstrap-t UCL	8.622
95% Hall's Bootstrap UCL	8.022	95% Percentile Bootstrap UCL	3.523
95% BCA Bootstrap UCL	4.292		
90% Chebyshev(Mean, Sd) UCL	4.396	95% Chebyshev(Mean, Sd) UCL	5.441
97.5% Chebyshev(Mean, Sd) UCL	6.891	99% Chebyshev(Mean, Sd) UCL	9.74

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	6.689
Maximum	13.7	Median	3.9
SD	4.833	Std. Error of Mean	1.611
Coefficient of Variation	0.722	Skewness	0.86
Mean of logged Data	1.685	SD of logged Data	0.672

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	9.685	95% Adjusted-CLT UCL (Chen-1995)	9.833
		95% Modified-t UCL (Johnson-1978)	9.762

Nonparametric Distribution Free UCLs

95% CLT UCL	9.339	95% Jackknife UCL	9.685
95% Standard Bootstrap UCL	9.201	95% Bootstrap-t UCL	10.18
95% Hall's Bootstrap UCL	8.273	95% Percentile Bootstrap UCL	9.089
95% BCA Bootstrap UCL	9.847		
90% Chebyshev(Mean, Sd) UCL	11.52	95% Chebyshev(Mean, Sd) UCL	13.71
97.5% Chebyshev(Mean, Sd) UCL	16.75	99% Chebyshev(Mean, Sd) UCL	22.72

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.71

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.13	Mean	12.94
Maximum	37.2	Median	9.33
SD	12.87	Std. Error of Mean	4.289
Coefficient of Variation	0.994	Skewness	1.233
Mean of logged Data	2.115	SD of logged Data	1.005

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	20.92	95% Adjusted-CLT UCL (Chen-1995)	21.88
		95% Modified-t UCL (Johnson-1978)	21.21

Nonparametric Distribution Free UCLs

95% CLT UCL	20	95% Jackknife UCL	20.92
95% Standard Bootstrap UCL	19.49	95% Bootstrap-t UCL	29.52
95% Hall's Bootstrap UCL	30.15	95% Percentile Bootstrap UCL	19.98
95% BCA Bootstrap UCL	21.45		
90% Chebyshev(Mean, Sd) UCL	25.81	95% Chebyshev(Mean, Sd) UCL	31.64
97.5% Chebyshev(Mean, Sd) UCL	39.73	99% Chebyshev(Mean, Sd) UCL	55.61

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	11.3	Mean	12.72
Maximum	14.9	Median	12.1
SD	1.553	Std. Error of Mean	0.518
Coefficient of Variation	0.122	Skewness	0.64
Mean of logged Data	2.537	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.68	95% Adjusted-CLT UCL (Chen-1995)	13.69
		95% Modified-t UCL (Johnson-1978)	13.7

Nonparametric Distribution Free UCLs

95% CLT UCL	13.57	95% Jackknife UCL	13.68
95% Standard Bootstrap UCL	13.53	95% Bootstrap-t UCL	13.85
95% Hall's Bootstrap UCL	13.42	95% Percentile Bootstrap UCL	13.56
95% BCA Bootstrap UCL	13.59		
90% Chebyshev(Mean, Sd) UCL	14.28	95% Chebyshev(Mean, Sd) UCL	14.98
97.5% Chebyshev(Mean, Sd) UCL	15.96	99% Chebyshev(Mean, Sd) UCL	17.87

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.91	Mean	27.17
Maximum	50.8	Median	24.3
SD	16.29	Std. Error of Mean	5.43

Coefficient of Variation	0.6	Skewness	0.304
Mean of logged Data	3.119	SD of logged Data	0.66

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.27	95% Adjusted-CLT UCL (Chen-1995)	36.69
		95% Modified-t UCL (Johnson-1978)	37.36

Nonparametric Distribution Free UCLs

95% CLT UCL	36.1	95% Jackknife UCL	37.27
95% Standard Bootstrap UCL	35.51	95% Bootstrap-t UCL	38.69
95% Hall's Bootstrap UCL	35.24	95% Percentile Bootstrap UCL	35.83
95% BCA Bootstrap UCL	36.16		
90% Chebyshev(Mean, Sd) UCL	43.46	95% Chebyshev(Mean, Sd) UCL	50.84
97.5% Chebyshev(Mean, Sd) UCL	61.08	99% Chebyshev(Mean, Sd) UCL	81.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.7	Mean	45.88
Maximum	52.9	Median	45.7
SD	4.862	Std. Error of Mean	1.621
Coefficient of Variation	0.106	Skewness	0.301
Mean of logged Data	3.821	SD of logged Data	0.105

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	48.89	95% Adjusted-CLT UCL (Chen-1995)	48.72
		95% Modified-t UCL (Johnson-1978)	48.92

Nonparametric Distribution Free UCLs

95% CLT UCL	48.54	95% Jackknife UCL	48.89
95% Standard Bootstrap UCL	48.38	95% Bootstrap-t UCL	49.05
95% Hall's Bootstrap UCL	48.48	95% Percentile Bootstrap UCL	48.34
95% BCA Bootstrap UCL	48.76		
90% Chebyshev(Mean, Sd) UCL	50.74	95% Chebyshev(Mean, Sd) UCL	52.94
97.5% Chebyshev(Mean, Sd) UCL	56	99% Chebyshev(Mean, Sd) UCL	62

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:11:36 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32405269) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.662	Mean	4.149
Maximum	29.8	Median	0.925
SD	9.622	Std. Error of Mean	3.207
Coefficient of Variation	2.319	Skewness	2.997
Mean of logged Data	0.302	SD of logged Data	1.181

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	10.11	95% Adjusted-CLT UCL (Chen-1995)	12.85
		95% Modified-t UCL (Johnson-1978)	10.65

Nonparametric Distribution Free UCLs

95% CLT UCL	9.424	95% Jackknife UCL	10.11
95% Standard Bootstrap UCL	9.104	95% Bootstrap-t UCL	196.7
95% Hall's Bootstrap UCL	112.9	95% Percentile Bootstrap UCL	10.54
95% BCA Bootstrap UCL	13.75		
90% Chebyshev(Mean, Sd) UCL	13.77	95% Chebyshev(Mean, Sd) UCL	18.13
97.5% Chebyshev(Mean, Sd) UCL	24.18	99% Chebyshev(Mean, Sd) UCL	36.06

Suggested UCL to Use

95% Hall's Bootstrap UCL	112.9

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.293	Mean	0.842
Maximum	3.83	Median	0.497
SD	1.123	Std. Error of Mean	0.374
Coefficient of Variation	1.333	Skewness	2.977
Mean of logged Data	-0.537	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.538	95% Adjusted-CLT UCL (Chen-1995)	1.855
		95% Modified-t UCL (Johnson-1978)	1.6

Nonparametric Distribution Free UCLs

95% CLT UCL	1.458	95% Jackknife UCL	1.538
95% Standard Bootstrap UCL	1.414	95% Bootstrap-t UCL	18.41
95% Hall's Bootstrap UCL	9.833	95% Percentile Bootstrap UCL	1.584
95% BCA Bootstrap UCL	1.933		
90% Chebyshev(Mean, Sd) UCL	1.965	95% Chebyshev(Mean, Sd) UCL	2.473
97.5% Chebyshev(Mean, Sd) UCL	3.179	99% Chebyshev(Mean, Sd) UCL	4.565

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	2.473

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.96	Mean	2.118
Maximum	2.92	Median	2.02
SD	0.307	Std. Error of Mean	0.102
Coefficient of Variation	0.145	Skewness	2.782
Mean of logged Data	0.743	SD of logged Data	0.127

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.309	95% Adjusted-CLT UCL (Chen-1995)	2.388
		95% Modified-t UCL (Johnson-1978)	2.324

Nonparametric Distribution Free UCLs

95% CLT UCL	2.287	95% Jackknife UCL	2.309
95% Standard Bootstrap UCL	2.277	95% Bootstrap-t UCL	3.398
95% Hall's Bootstrap UCL	3.223	95% Percentile Bootstrap UCL	2.313
95% BCA Bootstrap UCL	2.421		
90% Chebyshev(Mean, Sd) UCL	2.425	95% Chebyshev(Mean, Sd) UCL	2.564
97.5% Chebyshev(Mean, Sd) UCL	2.757	99% Chebyshev(Mean, Sd) UCL	3.136

Suggested UCL to Use

95% Student's-t UCL	2.309	or 95% Modified-t UCL	2.324

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.76	Mean	2.135
Maximum	3.25	Median	2.02
SD	0.431	Std. Error of Mean	0.144
Coefficient of Variation	0.202	Skewness	2.639
Mean of logged Data	0.744	SD of logged Data	0.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.402	95% Adjusted-CLT UCL (Chen-1995)	2.507
		95% Modified-t UCL (Johnson-1978)	2.424

Nonparametric Distribution Free UCLs

95% CLT UCL	2.372	95% Jackknife UCL	2.402
95% Standard Bootstrap UCL	2.353	95% Bootstrap-t UCL	2.96
95% Hall's Bootstrap UCL	3.755	95% Percentile Bootstrap UCL	2.409
95% BCA Bootstrap UCL	2.479		
90% Chebyshev(Mean, Sd) UCL	2.566	95% Chebyshev(Mean, Sd) UCL	2.762
97.5% Chebyshev(Mean, Sd) UCL	3.033	99% Chebyshev(Mean, Sd) UCL	3.566

Suggested UCL to Use

95% Student's-t UCL	2.402	or 95% Modified-t UCL	2.424

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.96	Mean	2.573
Maximum	4.89	Median	2.04
SD	0.969	Std. Error of Mean	0.323
Coefficient of Variation	0.377	Skewness	2.08
Mean of logged Data	0.897	SD of logged Data	0.31

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.174	95% Adjusted-CLT UCL (Chen-1995)	3.344
		95% Modified-t UCL (Johnson-1978)	3.211

Nonparametric Distribution Free UCLs

95% CLT UCL	3.105	95% Jackknife UCL	3.174
95% Standard Bootstrap UCL	3.084	95% Bootstrap-t UCL	4.409
95% Hall's Bootstrap UCL	5.149	95% Percentile Bootstrap UCL	3.112
95% BCA Bootstrap UCL	3.385		
90% Chebyshev(Mean, Sd) UCL	3.543	95% Chebyshev(Mean, Sd) UCL	3.982
97.5% Chebyshev(Mean, Sd) UCL	4.591	99% Chebyshev(Mean, Sd) UCL	5.788

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.96	Mean	4.041

Maximum	7.8	Median	3.14
SD	1.599	Std. Error of Mean	0.533
Coefficient of Variation	0.396	Skewness	1.96
Mean of logged Data	1.342	SD of logged Data	0.33

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.033	95% Adjusted-CLT UCL (Chen-1995)	5.29
		95% Modified-t UCL (Johnson-1978)	5.091

Nonparametric Distribution Free UCLs

95% CLT UCL	4.918	95% Jackknife UCL	5.033
95% Standard Bootstrap UCL	4.881	95% Bootstrap-t UCL	6.574
95% Hall's Bootstrap UCL	8.78	95% Percentile Bootstrap UCL	4.973
95% BCA Bootstrap UCL	5.226		
90% Chebyshev(Mean, Sd) UCL	5.641	95% Chebyshev(Mean, Sd) UCL	6.365
97.5% Chebyshev(Mean, Sd) UCL	7.371	99% Chebyshev(Mean, Sd) UCL	9.346

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.28	Mean	3.072
Maximum	4.53	Median	3.035
SD	0.623	Std. Error of Mean	0.208
Coefficient of Variation	0.203	Skewness	1.605
Mean of logged Data	1.106	SD of logged Data	0.188

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.458	95% Adjusted-CLT UCL (Chen-1995)	3.532

		95% Modified-t UCL (Johnson-1978)	3.477

Nonparametric Distribution Free UCLs

95% CLT UCL	3.414	95% Jackknife UCL	3.458
95% Standard Bootstrap UCL	3.395	95% Bootstrap-t UCL	3.603
95% Hall's Bootstrap UCL	5.217	95% Percentile Bootstrap UCL	3.406
95% BCA Bootstrap UCL	3.503		
90% Chebyshev(Mean, Sd) UCL	3.695	95% Chebyshev(Mean, Sd) UCL	3.977
97.5% Chebyshev(Mean, Sd) UCL	4.369	99% Chebyshev(Mean, Sd) UCL	5.138

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	2.083
Maximum	2.56	Median	2.02
SD	0.188	Std. Error of Mean	0.0627
Coefficient of Variation	0.0903	Skewness	2.512
Mean of logged Data	0.731	SD of logged Data	0.0835

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.2	95% Adjusted-CLT UCL (Chen-1995)	2.243
		95% Modified-t UCL (Johnson-1978)	2.209

Nonparametric Distribution Free UCLs

95% CLT UCL	2.186	95% Jackknife UCL	2.2
95% Standard Bootstrap UCL	2.18	95% Bootstrap-t UCL	2.659
95% Hall's Bootstrap UCL	2.797	95% Percentile Bootstrap UCL	2.196
95% BCA Bootstrap UCL	2.253		
90% Chebyshev(Mean, Sd) UCL	2.271	95% Chebyshev(Mean, Sd) UCL	2.357
97.5% Chebyshev(Mean, Sd) UCL	2.475	99% Chebyshev(Mean, Sd) UCL	2.707

Suggested UCL to Use

95% Student's-t UCL	2.2	or 95% Modified-t UCL	2.209

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	2.891
Maximum	5.09	Median	2.61
SD	1.1	Std. Error of Mean	0.367
Coefficient of Variation	0.38	Skewness	1.117
Mean of logged Data	1.004	SD of logged Data	0.352

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.573	95% Adjusted-CLT UCL (Chen-1995)	3.64
		95% Modified-t UCL (Johnson-1978)	3.595

Nonparametric Distribution Free UCLs

95% CLT UCL	3.494	95% Jackknife UCL	3.573
95% Standard Bootstrap UCL	3.457	95% Bootstrap-t UCL	3.903
95% Hall's Bootstrap UCL	3.678	95% Percentile Bootstrap UCL	3.487
95% BCA Bootstrap UCL	3.574		
90% Chebyshev(Mean, Sd) UCL	3.991	95% Chebyshev(Mean, Sd) UCL	4.489
97.5% Chebyshev(Mean, Sd) UCL	5.18	99% Chebyshev(Mean, Sd) UCL	6.538

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.96	Mean	3.266
Maximum	6.6	Median	2.68
SD	1.699	Std. Error of Mean	0.566
Coefficient of Variation	0.52	Skewness	1.296
Mean of logged Data	1.081	SD of logged Data	0.462

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.319	95% Adjusted-CLT UCL (Chen-1995)	4.459
		95% Modified-t UCL (Johnson-1978)	4.36

Nonparametric Distribution Free UCLs

95% CLT UCL	4.197	95% Jackknife UCL	4.319
95% Standard Bootstrap UCL	4.157	95% Bootstrap-t UCL	5.336
95% Hall's Bootstrap UCL	6.159	95% Percentile Bootstrap UCL	4.214
95% BCA Bootstrap UCL	4.295		
90% Chebyshev(Mean, Sd) UCL	4.965	95% Chebyshev(Mean, Sd) UCL	5.735
97.5% Chebyshev(Mean, Sd) UCL	6.803	99% Chebyshev(Mean, Sd) UCL	8.901

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.205	Mean	1.668
Maximum	5.08	Median	1.24
SD	1.28	Std. Error of Mean	0.427
Coefficient of Variation	0.768	Skewness	2.995
Mean of logged Data	0.372	SD of logged Data	0.471

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.461	95% Adjusted-CLT UCL (Chen-1995)	2.825
		95% Modified-t UCL (Johnson-1978)	2.532

Nonparametric Distribution Free UCLs

95% CLT UCL	2.37	95% Jackknife UCL	2.461
95% Standard Bootstrap UCL	2.338	95% Bootstrap-t UCL	31.08

95% Hall's Bootstrap UCL	13.64	95% Percentile Bootstrap UCL	2.508
95% BCA Bootstrap UCL	2.935		
90% Chebyshev(Mean, Sd) UCL	2.948	95% Chebyshev(Mean, Sd) UCL	3.528
97.5% Chebyshev(Mean, Sd) UCL	4.333	99% Chebyshev(Mean, Sd) UCL	5.914

Suggested UCL to Use

95% Student's-t UCL	2.461	or 95% Modified-t UCL	2.532

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.18	Mean	3.037
Maximum	4.63	Median	3.035
SD	0.706	Std. Error of Mean	0.235
Coefficient of Variation	0.232	Skewness	1.303
Mean of logged Data	1.089	SD of logged Data	0.22

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.474	95% Adjusted-CLT UCL (Chen-1995)	3.533
		95% Modified-t UCL (Johnson-1978)	3.491

Nonparametric Distribution Free UCLs

95% CLT UCL	3.424	95% Jackknife UCL	3.474
95% Standard Bootstrap UCL	3.395	95% Bootstrap-t UCL	3.576
95% Hall's Bootstrap UCL	5.462	95% Percentile Bootstrap UCL	3.457
95% BCA Bootstrap UCL	3.546		
90% Chebyshev(Mean, Sd) UCL	3.742	95% Chebyshev(Mean, Sd) UCL	4.062
97.5% Chebyshev(Mean, Sd) UCL	4.506	99% Chebyshev(Mean, Sd) UCL	5.378

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.12	Mean	2.024
Maximum	3.51	Median	1.83
SD	0.889	Std. Error of Mean	0.296
Coefficient of Variation	0.439	Skewness	0.639
Mean of logged Data	0.621	SD of logged Data	0.432

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.576	95% Adjusted-CLT UCL (Chen-1995)	2.579
		95% Modified-t UCL (Johnson-1978)	2.586

Nonparametric Distribution Free UCLs

95% CLT UCL	2.512	95% Jackknife UCL	2.576
95% Standard Bootstrap UCL	2.494	95% Bootstrap-t UCL	2.719
95% Hall's Bootstrap UCL	2.462	95% Percentile Bootstrap UCL	2.511
95% BCA Bootstrap UCL	2.526		
90% Chebyshev(Mean, Sd) UCL	2.914	95% Chebyshev(Mean, Sd) UCL	3.316
97.5% Chebyshev(Mean, Sd) UCL	3.875	99% Chebyshev(Mean, Sd) UCL	4.973

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.5	Mean	3.759
Maximum	9.57	Median	3.085
SD	2.19	Std. Error of Mean	0.73
Coefficient of Variation	0.583	Skewness	2.94
Mean of logged Data	1.235	SD of logged Data	0.392

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.117	95% Adjusted-CLT UCL (Chen-1995)	5.725
		95% Modified-t UCL (Johnson-1978)	5.236

Nonparametric Distribution Free UCLs

95% CLT UCL	4.96	95% Jackknife UCL	5.117
95% Standard Bootstrap UCL	4.886	95% Bootstrap-t UCL	18.97
95% Hall's Bootstrap UCL	16.59	95% Percentile Bootstrap UCL	5.214
95% BCA Bootstrap UCL	5.912		
90% Chebyshev(Mean, Sd) UCL	5.95	95% Chebyshev(Mean, Sd) UCL	6.942
97.5% Chebyshev(Mean, Sd) UCL	8.319	99% Chebyshev(Mean, Sd) UCL	11.02

Suggested UCL to Use

95% Student's-t UCL	5.117	or 95% Modified-t UCL	5.236

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.56	Mean	3.515
Maximum	5.87	Median	3.035
SD	1.092	Std. Error of Mean	0.364
Coefficient of Variation	0.311	Skewness	1.624
Mean of logged Data	1.221	SD of logged Data	0.272

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.192	95% Adjusted-CLT UCL (Chen-1995)	4.324
		95% Modified-t UCL (Johnson-1978)	4.225

Nonparametric Distribution Free UCLs

95% CLT UCL	4.114	95% Jackknife UCL	4.192
95% Standard Bootstrap UCL	4.084	95% Bootstrap-t UCL	5.426
95% Hall's Bootstrap UCL	7.275	95% Percentile Bootstrap UCL	4.131
95% BCA Bootstrap UCL	4.312		
90% Chebyshev(Mean, Sd) UCL	4.607	95% Chebyshev(Mean, Sd) UCL	5.102
97.5% Chebyshev(Mean, Sd) UCL	5.788	99% Chebyshev(Mean, Sd) UCL	7.137

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.9	Mean	19.78
Maximum	38.2	Median	14.1
SD	10.04	Std. Error of Mean	3.346
Coefficient of Variation	0.508	Skewness	1.163
Mean of logged Data	2.886	SD of logged Data	0.454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	26	95% Adjusted-CLT UCL (Chen-1995)	26.67
		95% Modified-t UCL (Johnson-1978)	26.22

Nonparametric Distribution Free UCLs

95% CLT UCL	25.28	95% Jackknife UCL	26
95% Standard Bootstrap UCL	25.04	95% Bootstrap-t UCL	31.49
95% Hall's Bootstrap UCL	26.08	95% Percentile Bootstrap UCL	25.24
95% BCA Bootstrap UCL	26.12		
90% Chebyshev(Mean, Sd) UCL	29.82	95% Chebyshev(Mean, Sd) UCL	34.36
97.5% Chebyshev(Mean, Sd) UCL	40.68	99% Chebyshev(Mean, Sd) UCL	53.07

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.48	Mean	10.28

Maximum	13.1	Median	9.54
SD	1.724	Std. Error of Mean	0.575
Coefficient of Variation	0.168	Skewness	0.848
Mean of logged Data	2.319	SD of logged Data	0.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.35	95% Adjusted-CLT UCL (Chen-1995)	11.4
		95% Modified-t UCL (Johnson-1978)	11.38

Nonparametric Distribution Free UCLs

95% CLT UCL	11.23	95% Jackknife UCL	11.35
95% Standard Bootstrap UCL	11.17	95% Bootstrap-t UCL	11.92
95% Hall's Bootstrap UCL	11.21	95% Percentile Bootstrap UCL	11.24
95% BCA Bootstrap UCL	11.34		
90% Chebyshev(Mean, Sd) UCL	12.01	95% Chebyshev(Mean, Sd) UCL	12.79
97.5% Chebyshev(Mean, Sd) UCL	13.87	99% Chebyshev(Mean, Sd) UCL	16

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	40.5	Mean	47.76
Maximum	58.7	Median	43.3
SD	7.846	Std. Error of Mean	2.615
Coefficient of Variation	0.164	Skewness	0.733
Mean of logged Data	3.855	SD of logged Data	0.158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.62	95% Adjusted-CLT UCL (Chen-1995)	52.74

95% Modified-t UCL (Johnson-1978)	52.73

Nonparametric Distribution Free UCLs

95% CLT UCL	52.06	95% Jackknife UCL	52.62
95% Standard Bootstrap UCL	51.75	95% Bootstrap-t UCL	53.55
95% Hall's Bootstrap UCL	50.7	95% Percentile Bootstrap UCL	51.94
95% BCA Bootstrap UCL	52.27		
90% Chebyshev(Mean, Sd) UCL	55.6	95% Chebyshev(Mean, Sd) UCL	59.16
97.5% Chebyshev(Mean, Sd) UCL	64.09	99% Chebyshev(Mean, Sd) UCL	73.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 11:13:41 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32405289) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.616	Mean	2.433
Maximum	5.43	Median	1.98
SD	1.763	Std. Error of Mean	0.588
Coefficient of Variation	0.725	Skewness	0.532
Mean of logged Data	0.608	SD of logged Data	0.835

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.526	95% Adjusted-CLT UCL (Chen-1995)	3.511
		95% Modified-t UCL (Johnson-1978)	3.544

Nonparametric Distribution Free UCLs

95% CLT UCL	3.4	95% Jackknife UCL	3.526
95% Standard Bootstrap UCL	3.359	95% Bootstrap-t UCL	3.666
95% Hall's Bootstrap UCL	3.383	95% Percentile Bootstrap UCL	3.348
95% BCA Bootstrap UCL	3.419		
90% Chebyshev(Mean, Sd) UCL	4.197	95% Chebyshev(Mean, Sd) UCL	4.995
97.5% Chebyshev(Mean, Sd) UCL	6.104	99% Chebyshev(Mean, Sd) UCL	8.281

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.503	Mean	0.818
Maximum	1.5	Median	0.565
SD	0.372	Std. Error of Mean	0.124
Coefficient of Variation	0.455	Skewness	0.792
Mean of logged Data	-0.289	SD of logged Data	0.436

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.048	95% Adjusted-CLT UCL (Chen-1995)	1.057
		95% Modified-t UCL (Johnson-1978)	1.054

Nonparametric Distribution Free UCLs

95% CLT UCL	1.022	95% Jackknife UCL	1.048
95% Standard Bootstrap UCL	1.012	95% Bootstrap-t UCL	1.115
95% Hall's Bootstrap UCL	0.999	95% Percentile Bootstrap UCL	1.005
95% BCA Bootstrap UCL	1.05		
90% Chebyshev(Mean, Sd) UCL	1.19	95% Chebyshev(Mean, Sd) UCL	1.359
97.5% Chebyshev(Mean, Sd) UCL	1.593	99% Chebyshev(Mean, Sd) UCL	2.052

Suggested UCL to Use

95% Student's-t UCL	1.048	or 95% Modified-t UCL	1.054

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.02	Mean	2.946
Maximum	4.69	Median	2.14
SD	1.143	Std. Error of Mean	0.381
Coefficient of Variation	0.388	Skewness	0.756
Mean of logged Data	1.018	SD of logged Data	0.366

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	3.655	95% Adjusted-CLT UCL (Chen-1995)	3.676
		95% Modified-t UCL (Johnson-1978)	3.671

Nonparametric Distribution Free UCLs

95% CLT UCL	3.573	95% Jackknife UCL	3.655
95% Standard Bootstrap UCL	3.535	95% Bootstrap-t UCL	3.78
95% Hall's Bootstrap UCL	3.383	95% Percentile Bootstrap UCL	3.57
95% BCA Bootstrap UCL	3.674		
90% Chebyshev(Mean, Sd) UCL	4.09	95% Chebyshev(Mean, Sd) UCL	4.608
97.5% Chebyshev(Mean, Sd) UCL	5.326	99% Chebyshev(Mean, Sd) UCL	6.739

Suggested UCL to Use

95% Student's-t UCL	3.655	or 95% Modified-t UCL	3.671

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	14.32
Maximum	29.6	Median	12.3
SD	11.28	Std. Error of Mean	3.761
Coefficient of Variation	0.788	Skewness	0.14
Mean of logged Data	2.202	SD of logged Data	1.157

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	21.32	95% Adjusted-CLT UCL (Chen-1995)	20.7
		95% Modified-t UCL (Johnson-1978)	21.35

Nonparametric Distribution Free UCLs

95% CLT UCL	20.51	95% Jackknife UCL	21.32
95% Standard Bootstrap UCL	20.13	95% Bootstrap-t UCL	21.82
95% Hall's Bootstrap UCL	19.49	95% Percentile Bootstrap UCL	20.14
95% BCA Bootstrap UCL	20.26		
90% Chebyshev(Mean, Sd) UCL	25.61	95% Chebyshev(Mean, Sd) UCL	30.72
97.5% Chebyshev(Mean, Sd) UCL	37.81	99% Chebyshev(Mean, Sd) UCL	51.74

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	19.58
Maximum	39.6	Median	17.1
SD	15.8	Std. Error of Mean	5.266
Coefficient of Variation	0.807	Skewness	0.0766
Mean of logged Data	2.432	SD of logged Data	1.296

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	29.37	95% Adjusted-CLT UCL (Chen-1995)	28.39
		95% Modified-t UCL (Johnson-1978)	29.4

Nonparametric Distribution Free UCLs

95% CLT UCL	28.24	95% Jackknife UCL	29.37
95% Standard Bootstrap UCL	27.56	95% Bootstrap-t UCL	30.25
95% Hall's Bootstrap UCL	26.48	95% Percentile Bootstrap UCL	27.91
95% BCA Bootstrap UCL	27.84		
90% Chebyshev(Mean, Sd) UCL	35.38	95% Chebyshev(Mean, Sd) UCL	42.54
97.5% Chebyshev(Mean, Sd) UCL	52.47	99% Chebyshev(Mean, Sd) UCL	71.98

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.05	Mean	29.1
Maximum	62.8	Median	28.6
SD	23.76	Std. Error of Mean	7.919
Coefficient of Variation	0.816	Skewness	0.142
Mean of logged Data	2.82	SD of logged Data	1.304

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	43.82	95% Adjusted-CLT UCL (Chen-1995)	42.53
		95% Modified-t UCL (Johnson-1978)	43.89

Nonparametric Distribution Free UCLs

95% CLT UCL	42.12	95% Jackknife UCL	43.82
95% Standard Bootstrap UCL	41.41	95% Bootstrap-t UCL	43.43
95% Hall's Bootstrap UCL	40.32	95% Percentile Bootstrap UCL	41.58
95% BCA Bootstrap UCL	40.97		
90% Chebyshev(Mean, Sd) UCL	52.86	95% Chebyshev(Mean, Sd) UCL	63.62
97.5% Chebyshev(Mean, Sd) UCL	78.55	99% Chebyshev(Mean, Sd) UCL	107.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.185	Mean	18.92
Maximum	40.3	Median	21.9
SD	14.57	Std. Error of Mean	4.856
Coefficient of Variation	0.77	Skewness	0.239
Mean of logged Data	2.526	SD of logged Data	1.082

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27.95	95% Adjusted-CLT UCL (Chen-1995)	27.32
		95% Modified-t UCL (Johnson-1978)	28.01

Nonparametric Distribution Free UCLs

95% CLT UCL	26.9	95% Jackknife UCL	27.95

95% Standard Bootstrap UCL	26.37	95% Bootstrap-t UCL	28.81
95% Hall's Bootstrap UCL	26.49	95% Percentile Bootstrap UCL	26.63
95% BCA Bootstrap UCL	27.28		
90% Chebyshev(Mean, Sd) UCL	33.48	95% Chebyshev(Mean, Sd) UCL	40.08
97.5% Chebyshev(Mean, Sd) UCL	49.24	99% Chebyshev(Mean, Sd) UCL	67.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.07	Mean	11.07
Maximum	22.4	Median	10.3
SD	8.364	Std. Error of Mean	2.788
Coefficient of Variation	0.756	Skewness	0.167
Mean of logged Data	2.019	SD of logged Data	1.031

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.25	95% Adjusted-CLT UCL (Chen-1995)	15.82
		95% Modified-t UCL (Johnson-1978)	16.28

Nonparametric Distribution Free UCLs

95% CLT UCL	15.65	95% Jackknife UCL	16.25
95% Standard Bootstrap UCL	15.45	95% Bootstrap-t UCL	16.31
95% Hall's Bootstrap UCL	15.08	95% Percentile Bootstrap UCL	15.53
95% BCA Bootstrap UCL	15.65		
90% Chebyshev(Mean, Sd) UCL	19.43	95% Chebyshev(Mean, Sd) UCL	23.22
97.5% Chebyshev(Mean, Sd) UCL	28.48	99% Chebyshev(Mean, Sd) UCL	38.81

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	22.99
Maximum	49.7	Median	21
SD	19.06	Std. Error of Mean	6.352
Coefficient of Variation	0.829	Skewness	0.126
Mean of logged Data	2.539	SD of logged Data	1.374

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	34.8	95% Adjusted-CLT UCL (Chen-1995)	33.72
		95% Modified-t UCL (Johnson-1978)	34.84

Nonparametric Distribution Free UCLs

95% CLT UCL	33.44	95% Jackknife UCL	34.8
95% Standard Bootstrap UCL	32.85	95% Bootstrap-t UCL	35.96
95% Hall's Bootstrap UCL	31.67	95% Percentile Bootstrap UCL	32.77
95% BCA Bootstrap UCL	32.9		
90% Chebyshev(Mean, Sd) UCL	42.04	95% Chebyshev(Mean, Sd) UCL	50.68
97.5% Chebyshev(Mean, Sd) UCL	62.66	99% Chebyshev(Mean, Sd) UCL	86.19

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.5	Mean	4.967
Maximum	8.15	Median	3.69
SD	2.217	Std. Error of Mean	0.739
Coefficient of Variation	0.446	Skewness	0.445
Mean of logged Data	1.513	SD of logged Data	0.45

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.342	95% Adjusted-CLT UCL (Chen-1995)	6.3
		95% Modified-t UCL (Johnson-1978)	6.36

Nonparametric Distribution Free UCLs

95% CLT UCL	6.183	95% Jackknife UCL	6.342
95% Standard Bootstrap UCL	6.091	95% Bootstrap-t UCL	6.635
95% Hall's Bootstrap UCL	5.888	95% Percentile Bootstrap UCL	6.16
95% BCA Bootstrap UCL	6.256		
90% Chebyshev(Mean, Sd) UCL	7.185	95% Chebyshev(Mean, Sd) UCL	8.189
97.5% Chebyshev(Mean, Sd) UCL	9.583	99% Chebyshev(Mean, Sd) UCL	12.32

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.115	Mean	26.96
Maximum	55.9	Median	24
SD	22.74	Std. Error of Mean	7.58
Coefficient of Variation	0.843	Skewness	0.125
Mean of logged Data	2.665	SD of logged Data	1.422

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.06	95% Adjusted-CLT UCL (Chen-1995)	39.77
		95% Modified-t UCL (Johnson-1978)	41.11

Nonparametric Distribution Free UCLs

95% CLT UCL	39.43	95% Jackknife UCL	41.06
95% Standard Bootstrap UCL	38.66	95% Bootstrap-t UCL	40.99
95% Hall's Bootstrap UCL	37.26	95% Percentile Bootstrap UCL	38.82
95% BCA Bootstrap UCL	39.35		
90% Chebyshev(Mean, Sd) UCL	49.7	95% Chebyshev(Mean, Sd) UCL	60
97.5% Chebyshev(Mean, Sd) UCL	74.3	99% Chebyshev(Mean, Sd) UCL	102.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.185	Mean	16.95
Maximum	34.6	Median	15.1
SD	12.86	Std. Error of Mean	4.287
Coefficient of Variation	0.759	Skewness	0.204
Mean of logged Data	2.447	SD of logged Data	1.028

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	24.92	95% Adjusted-CLT UCL (Chen-1995)	24.31
		95% Modified-t UCL (Johnson-1978)	24.97

Nonparametric Distribution Free UCLs

95% CLT UCL	24	95% Jackknife UCL	24.92
95% Standard Bootstrap UCL	23.67	95% Bootstrap-t UCL	25.33
95% Hall's Bootstrap UCL	23.35	95% Percentile Bootstrap UCL	23.36
95% BCA Bootstrap UCL	24.05		
90% Chebyshev(Mean, Sd) UCL	29.81	95% Chebyshev(Mean, Sd) UCL	35.64
97.5% Chebyshev(Mean, Sd) UCL	43.72	99% Chebyshev(Mean, Sd) UCL	59.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.955	Mean	2.861
Maximum	6.54	Median	2.97
SD	1.928	Std. Error of Mean	0.643
Coefficient of Variation	0.674	Skewness	0.76
Mean of logged Data	0.829	SD of logged Data	0.727

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.056	95% Adjusted-CLT UCL (Chen-1995)	4.092
		95% Modified-t UCL (Johnson-1978)	4.083

Nonparametric Distribution Free UCLs

95% CLT UCL	3.918	95% Jackknife UCL	4.056
95% Standard Bootstrap UCL	3.862	95% Bootstrap-t UCL	4.398
95% Hall's Bootstrap UCL	4.108	95% Percentile Bootstrap UCL	3.931
95% BCA Bootstrap UCL	3.959		
90% Chebyshev(Mean, Sd) UCL	4.789	95% Chebyshev(Mean, Sd) UCL	5.662
97.5% Chebyshev(Mean, Sd) UCL	6.874	99% Chebyshev(Mean, Sd) UCL	9.254

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	11.14
Maximum	21.6	Median	9.88
SD	7.917	Std. Error of Mean	2.639
Coefficient of Variation	0.711	Skewness	0.216
Mean of logged Data	2.105	SD of logged Data	0.897

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	16.05	95% Adjusted-CLT UCL (Chen-1995)	15.69
		95% Modified-t UCL (Johnson-1978)	16.08

Nonparametric Distribution Free UCLs

95% CLT UCL	15.48	95% Jackknife UCL	16.05
95% Standard Bootstrap UCL	15.18	95% Bootstrap-t UCL	16.44
95% Hall's Bootstrap UCL	14.68	95% Percentile Bootstrap UCL	15.27
95% BCA Bootstrap UCL	15.36		
90% Chebyshev(Mean, Sd) UCL	19.06	95% Chebyshev(Mean, Sd) UCL	22.65
97.5% Chebyshev(Mean, Sd) UCL	27.62	99% Chebyshev(Mean, Sd) UCL	37.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.6	Mean	27.09
Maximum	52.7	Median	23
SD	22.1	Std. Error of Mean	7.368
Coefficient of Variation	0.816	Skewness	0.0534
Mean of logged Data	2.749	SD of logged Data	1.299

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.8	95% Adjusted-CLT UCL (Chen-1995)	39.35
		95% Modified-t UCL (Johnson-1978)	40.82

Nonparametric Distribution Free UCLs

95% CLT UCL	39.21	95% Jackknife UCL	40.8
95% Standard Bootstrap UCL	38.44	95% Bootstrap-t UCL	41.07
95% Hall's Bootstrap UCL	36.62	95% Percentile Bootstrap UCL	39.26
95% BCA Bootstrap UCL	38.36		
90% Chebyshev(Mean, Sd) UCL	49.2	95% Chebyshev(Mean, Sd) UCL	59.21
97.5% Chebyshev(Mean, Sd) UCL	73.11	99% Chebyshev(Mean, Sd) UCL	100.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	12	Mean	14.38
Maximum	17.7	Median	13.7
SD	1.777	Std. Error of Mean	0.592
Coefficient of Variation	0.124	Skewness	0.807
Mean of logged Data	2.659	SD of logged Data	0.12

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.48	95% Adjusted-CLT UCL (Chen-1995)	15.52
		95% Modified-t UCL (Johnson-1978)	15.51

Nonparametric Distribution Free UCLs

95% CLT UCL	15.35	95% Jackknife UCL	15.48
95% Standard Bootstrap UCL	15.3	95% Bootstrap-t UCL	15.87
95% Hall's Bootstrap UCL	16.02	95% Percentile Bootstrap UCL	15.28
95% BCA Bootstrap UCL	15.43		
90% Chebyshev(Mean, Sd) UCL	16.15	95% Chebyshev(Mean, Sd) UCL	16.96
97.5% Chebyshev(Mean, Sd) UCL	18.08	99% Chebyshev(Mean, Sd) UCL	20.27

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	19.13
Maximum	32.5	Median	16.1
SD	8.717	Std. Error of Mean	2.906
Coefficient of Variation	0.456	Skewness	0.356
Mean of logged Data	2.856	SD of logged Data	0.467

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	24.54	95% Adjusted-CLT UCL (Chen-1995)	24.28
		95% Modified-t UCL (Johnson-1978)	24.59

Nonparametric Distribution Free UCLs

95% CLT UCL	23.91	95% Jackknife UCL	24.54
95% Standard Bootstrap UCL	23.65	95% Bootstrap-t UCL	24.99
95% Hall's Bootstrap UCL	23.09	95% Percentile Bootstrap UCL	23.64
95% BCA Bootstrap UCL	24.28		
90% Chebyshev(Mean, Sd) UCL	27.85	95% Chebyshev(Mean, Sd) UCL	31.8
97.5% Chebyshev(Mean, Sd) UCL	37.28	99% Chebyshev(Mean, Sd) UCL	48.04

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	45	Mean	65.69
Maximum	111	Median	50.1
SD	24.43	Std. Error of Mean	8.145
Coefficient of Variation	0.372	Skewness	1.036
Mean of logged Data	4.13	SD of logged Data	0.341

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	80.83	95% Adjusted-CLT UCL (Chen-1995)	82.09
		95% Modified-t UCL (Johnson-1978)	81.3

Nonparametric Distribution Free UCLs

95% CLT UCL	79.09	95% Jackknife UCL	80.83

95% Standard Bootstrap UCL	78.05	95% Bootstrap-t UCL	86.53
95% Hall's Bootstrap UCL	75.8	95% Percentile Bootstrap UCL	79.29
95% BCA Bootstrap UCL	79.71		
90% Chebyshev(Mean, Sd) UCL	90.12	95% Chebyshev(Mean, Sd) UCL	101.2
97.5% Chebyshev(Mean, Sd) UCL	116.6	99% Chebyshev(Mean, Sd) UCL	146.7

Suggested UCL to Use

95% Student's-t UCL	80.83	or 95% Modified-t UCL	81.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:07:23 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32436008) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.06	Mean	1.568
Maximum	2.38	Median	1.53
SD	0.436	Std. Error of Mean	0.145
Coefficient of Variation	0.278	Skewness	0.908
Mean of logged Data	0.417	SD of logged Data	0.266

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.838	95% Adjusted-CLT UCL (Chen-1995)	1.854
		95% Modified-t UCL (Johnson-1978)	1.845

Nonparametric Distribution Free UCLs

95% CLT UCL	1.807	95% Jackknife UCL	1.838
95% Standard Bootstrap UCL	1.789	95% Bootstrap-t UCL	1.973
95% Hall's Bootstrap UCL	2.299	95% Percentile Bootstrap UCL	1.797
95% BCA Bootstrap UCL	1.821		
90% Chebyshev(Mean, Sd) UCL	2.004	95% Chebyshev(Mean, Sd) UCL	2.201
97.5% Chebyshev(Mean, Sd) UCL	2.475	99% Chebyshev(Mean, Sd) UCL	3.014

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.437	Mean	1.039
Maximum	2.46	Median	0.994
SD	0.674	Std. Error of Mean	0.225
Coefficient of Variation	0.649	Skewness	1.332
Mean of logged Data	-0.13	SD of logged Data	0.603

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.457	95% Adjusted-CLT UCL (Chen-1995)	1.515
		95% Modified-t UCL (Johnson-1978)	1.474

Nonparametric Distribution Free UCLs

95% CLT UCL	1.409	95% Jackknife UCL	1.457
95% Standard Bootstrap UCL	1.38	95% Bootstrap-t UCL	1.786
95% Hall's Bootstrap UCL	3.256	95% Percentile Bootstrap UCL	1.406
95% BCA Bootstrap UCL	1.534		
90% Chebyshev(Mean, Sd) UCL	1.713	95% Chebyshev(Mean, Sd) UCL	2.019
97.5% Chebyshev(Mean, Sd) UCL	2.443	99% Chebyshev(Mean, Sd) UCL	3.275

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.025	Mean	3.874
Maximum	11.3	Median	3.21
SD	2.938	Std. Error of Mean	0.979
Coefficient of Variation	0.758	Skewness	2.454
Mean of logged Data	1.187	SD of logged Data	0.558

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL | 95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	5.695	95% Adjusted-CLT UCL (Chen-1995)	6.341
		95% Modified-t UCL (Johnson-1978)	5.829

Nonparametric Distribution Free UCLs

95% CLT UCL	5.485	95% Jackknife UCL	5.695
95% Standard Bootstrap UCL	5.375	95% Bootstrap-t UCL	8.398
95% Hall's Bootstrap UCL	11.89	95% Percentile Bootstrap UCL	5.639
95% BCA Bootstrap UCL	6.474		
90% Chebyshev(Mean, Sd) UCL	6.812	95% Chebyshev(Mean, Sd) UCL	8.143
97.5% Chebyshev(Mean, Sd) UCL	9.99	99% Chebyshev(Mean, Sd) UCL	13.62

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	28.32
Maximum	81.6	Median	25.2
SD	28.87	Std. Error of Mean	9.623
Coefficient of Variation	1.019	Skewness	0.962
Mean of logged Data	2.599	SD of logged Data	1.502

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	46.21	95% Adjusted-CLT UCL (Chen-1995)	47.44
		95% Modified-t UCL (Johnson-1978)	46.73

Nonparametric Distribution Free UCLs

95% CLT UCL	44.15	95% Jackknife UCL	46.21
95% Standard Bootstrap UCL	43.14	95% Bootstrap-t UCL	56.17
95% Hall's Bootstrap UCL	61.67	95% Percentile Bootstrap UCL	44.17
95% BCA Bootstrap UCL	45.14		
90% Chebyshev(Mean, Sd) UCL	57.19	95% Chebyshev(Mean, Sd) UCL	70.26
97.5% Chebyshev(Mean, Sd) UCL	88.41	99% Chebyshev(Mean, Sd) UCL	124.1

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.88	Mean	41.74
Maximum	159	Median	31.4
SD	50.89	Std. Error of Mean	16.96
Coefficient of Variation	1.219	Skewness	1.777
Mean of logged Data	2.811	SD of logged Data	1.68

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	73.28	95% Adjusted-CLT UCL (Chen-1995)	80.37
		95% Modified-t UCL (Johnson-1978)	74.95

Nonparametric Distribution Free UCLs

95% CLT UCL	69.64	95% Jackknife UCL	73.28
95% Standard Bootstrap UCL	67.26	95% Bootstrap-t UCL	102.9
95% Hall's Bootstrap UCL	208.2	95% Percentile Bootstrap UCL	71.5
95% BCA Bootstrap UCL	81.88		
90% Chebyshev(Mean, Sd) UCL	92.62	95% Chebyshev(Mean, Sd) UCL	115.7
97.5% Chebyshev(Mean, Sd) UCL	147.7	99% Chebyshev(Mean, Sd) UCL	210.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.55	Mean	55.96
Maximum	211	Median	44.3
SD	67.37	Std. Error of Mean	22.46
Coefficient of Variation	1.204	Skewness	1.768
Mean of logged Data	3.139	SD of logged Data	1.641

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	97.72	95% Adjusted-CLT UCL (Chen-1995)	107
		95% Modified-t UCL (Johnson-1978)	99.93

Nonparametric Distribution Free UCLs

95% CLT UCL	92.9	95% Jackknife UCL	97.72
95% Standard Bootstrap UCL	91.18	95% Bootstrap-t UCL	139.8
95% Hall's Bootstrap UCL	277.1	95% Percentile Bootstrap UCL	94.71
95% BCA Bootstrap UCL	105.9		
90% Chebyshev(Mean, Sd) UCL	123.3	95% Chebyshev(Mean, Sd) UCL	153.9
97.5% Chebyshev(Mean, Sd) UCL	196.2	99% Chebyshev(Mean, Sd) UCL	279.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	37.36
Maximum	148	Median	27.9
SD	46.45	Std. Error of Mean	15.48
Coefficient of Variation	1.244	Skewness	2.001
Mean of logged Data	2.868	SD of logged Data	1.415

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	66.15	95% Adjusted-CLT UCL (Chen-1995)	73.86
		95% Modified-t UCL (Johnson-1978)	67.87

Nonparametric Distribution Free UCLs

95% CLT UCL	62.83	95% Jackknife UCL	66.15

95% Standard Bootstrap UCL	61	95% Bootstrap-t UCL	101
95% Hall's Bootstrap UCL	183.8	95% Percentile Bootstrap UCL	63.63
95% BCA Bootstrap UCL	72.58		
90% Chebyshev(Mean, Sd) UCL	83.81	95% Chebyshev(Mean, Sd) UCL	104.9
97.5% Chebyshev(Mean, Sd) UCL	134.1	99% Chebyshev(Mean, Sd) UCL	191.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.045	Mean	23.3
Maximum	80.5	Median	19.6
SD	25.8	Std. Error of Mean	8.6
Coefficient of Variation	1.107	Skewness	1.548
Mean of logged Data	2.443	SD of logged Data	1.405

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	39.29	95% Adjusted-CLT UCL (Chen-1995)	42.19
		95% Modified-t UCL (Johnson-1978)	40.03

Nonparametric Distribution Free UCLs

95% CLT UCL	37.44	95% Jackknife UCL	39.29
95% Standard Bootstrap UCL	36.75	95% Bootstrap-t UCL	52.09
95% Hall's Bootstrap UCL	110.4	95% Percentile Bootstrap UCL	37.73
95% BCA Bootstrap UCL	41.89		
90% Chebyshev(Mean, Sd) UCL	49.1	95% Chebyshev(Mean, Sd) UCL	60.79
97.5% Chebyshev(Mean, Sd) UCL	77.01	99% Chebyshev(Mean, Sd) UCL	108.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.165	Mean	38.33
Maximum	112	Median	35.1
SD	38.92	Std. Error of Mean	12.97
Coefficient of Variation	1.015	Skewness	0.95
Mean of logged Data	2.839	SD of logged Data	1.611

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	62.45	95% Adjusted-CLT UCL (Chen-1995)	64.05
		95% Modified-t UCL (Johnson-1978)	63.13

Nonparametric Distribution Free UCLs

95% CLT UCL	59.66	95% Jackknife UCL	62.45
95% Standard Bootstrap UCL	58.12	95% Bootstrap-t UCL	72.84
95% Hall's Bootstrap UCL	81.7	95% Percentile Bootstrap UCL	59.3
95% BCA Bootstrap UCL	63.17		
90% Chebyshev(Mean, Sd) UCL	77.24	95% Chebyshev(Mean, Sd) UCL	94.87
97.5% Chebyshev(Mean, Sd) UCL	119.3	99% Chebyshev(Mean, Sd) UCL	167.4

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	3.15	Mean	10.16
Maximum	37.8	Median	6.94
SD	11.19	Std. Error of Mean	3.73
Coefficient of Variation	1.102	Skewness	2.292
Mean of logged Data	1.937	SD of logged Data	0.861

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.09	95% Adjusted-CLT UCL (Chen-1995)	19.34
		95% Modified-t UCL (Johnson-1978)	17.57

Nonparametric Distribution Free UCLs

95% CLT UCL	16.29	95% Jackknife UCL	17.09
95% Standard Bootstrap UCL	15.98	95% Bootstrap-t UCL	30.39
95% Hall's Bootstrap UCL	44.14	95% Percentile Bootstrap UCL	16.2
95% BCA Bootstrap UCL	20.21		
90% Chebyshev(Mean, Sd) UCL	21.35	95% Chebyshev(Mean, Sd) UCL	26.41
97.5% Chebyshev(Mean, Sd) UCL	33.45	99% Chebyshev(Mean, Sd) UCL	47.27

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.165	Mean	43.1
Maximum	127	Median	43.9
SD	42.56	Std. Error of Mean	14.19
Coefficient of Variation	0.988	Skewness	0.92
Mean of logged Data	2.952	SD of logged Data	1.641

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	69.48	95% Adjusted-CLT UCL (Chen-1995)	71.09
		95% Modified-t UCL (Johnson-1978)	70.21

Nonparametric Distribution Free UCLs

95% CLT UCL	66.44	95% Jackknife UCL	69.48
95% Standard Bootstrap UCL	65.36	95% Bootstrap-t UCL	77.63
95% Hall's Bootstrap UCL	81.39	95% Percentile Bootstrap UCL	65.8
95% BCA Bootstrap UCL	67.89		
90% Chebyshev(Mean, Sd) UCL	85.67	95% Chebyshev(Mean, Sd) UCL	104.9
97.5% Chebyshev(Mean, Sd) UCL	131.7	99% Chebyshev(Mean, Sd) UCL	184.3

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.24	Mean	1.311
Maximum	1.51	Median	1.3
SD	0.0821	Std. Error of Mean	0.0274
Coefficient of Variation	0.0627	Skewness	2.047
Mean of logged Data	0.269	SD of logged Data	0.0599

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.362	95% Adjusted-CLT UCL (Chen-1995)	1.376
		95% Modified-t UCL (Johnson-1978)	1.365

Nonparametric Distribution Free UCLs

95% CLT UCL	1.356	95% Jackknife UCL	1.362
95% Standard Bootstrap UCL	1.354	95% Bootstrap-t UCL	1.406
95% Hall's Bootstrap UCL	1.541	95% Percentile Bootstrap UCL	1.359
95% BCA Bootstrap UCL	1.375		
90% Chebyshev(Mean, Sd) UCL	1.393	95% Chebyshev(Mean, Sd) UCL	1.43
97.5% Chebyshev(Mean, Sd) UCL	1.482	99% Chebyshev(Mean, Sd) UCL	1.584

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.19	Mean	38.9
Maximum	155	Median	29.8
SD	48.75	Std. Error of Mean	16.25
Coefficient of Variation	1.253	Skewness	1.996
Mean of logged Data	2.857	SD of logged Data	1.495

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	69.12	95% Adjusted-CLT UCL (Chen-1995)	77.19
		95% Modified-t UCL (Johnson-1978)	70.93

Nonparametric Distribution Free UCLs

95% CLT UCL	65.64	95% Jackknife UCL	69.12
95% Standard Bootstrap UCL	64.9	95% Bootstrap-t UCL	108.8
95% Hall's Bootstrap UCL	195.2	95% Percentile Bootstrap UCL	65.84
95% BCA Bootstrap UCL	78.82		
90% Chebyshev(Mean, Sd) UCL	87.66	95% Chebyshev(Mean, Sd) UCL	109.7
97.5% Chebyshev(Mean, Sd) UCL	140.4	99% Chebyshev(Mean, Sd) UCL	200.6

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.78	Mean	2.912
Maximum	5.81	Median	2.38
SD	1.403	Std. Error of Mean	0.468
Coefficient of Variation	0.482	Skewness	1.564
Mean of logged Data	0.986	SD of logged Data	0.409

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	3.782	95% Adjusted-CLT UCL (Chen-1995)	3.942
		95% Modified-t UCL (Johnson-1978)	3.822

Nonparametric Distribution Free UCLs

95% CLT UCL	3.681	95% Jackknife UCL	3.782
95% Standard Bootstrap UCL	3.633	95% Bootstrap-t UCL	5.701
95% Hall's Bootstrap UCL	8.835	95% Percentile Bootstrap UCL	3.66
95% BCA Bootstrap UCL	3.842		
90% Chebyshev(Mean, Sd) UCL	4.315	95% Chebyshev(Mean, Sd) UCL	4.951
97.5% Chebyshev(Mean, Sd) UCL	5.833	99% Chebyshev(Mean, Sd) UCL	7.565

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.15	Mean	17.71
Maximum	57.2	Median	18.4
SD	17.24	Std. Error of Mean	5.745
Coefficient of Variation	0.973	Skewness	1.621
Mean of logged Data	2.416	SD of logged Data	1.07

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.39	95% Adjusted-CLT UCL (Chen-1995)	30.47
		95% Modified-t UCL (Johnson-1978)	28.91

Nonparametric Distribution Free UCLs

95% CLT UCL	27.16	95% Jackknife UCL	28.39
95% Standard Bootstrap UCL	26.75	95% Bootstrap-t UCL	33.9
95% Hall's Bootstrap UCL	65.76	95% Percentile Bootstrap UCL	27.6
95% BCA Bootstrap UCL	30.09		
90% Chebyshev(Mean, Sd) UCL	34.94	95% Chebyshev(Mean, Sd) UCL	42.75
97.5% Chebyshev(Mean, Sd) UCL	53.58	99% Chebyshev(Mean, Sd) UCL	74.87

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.38	Mean	42.39
Maximum	117	Median	43.2
SD	40.43	Std. Error of Mean	13.48
Coefficient of Variation	0.954	Skewness	0.75
Mean of logged Data	3.006	SD of logged Data	1.543

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	67.45	95% Adjusted-CLT UCL (Chen-1995)	68.16
		95% Modified-t UCL (Johnson-1978)	68.01

Nonparametric Distribution Free UCLs

95% CLT UCL	64.55	95% Jackknife UCL	67.45
95% Standard Bootstrap UCL	63.72	95% Bootstrap-t UCL	74.46
95% Hall's Bootstrap UCL	75.38	95% Percentile Bootstrap UCL	65.68
95% BCA Bootstrap UCL	67.32		
90% Chebyshev(Mean, Sd) UCL	82.82	95% Chebyshev(Mean, Sd) UCL	101.1
97.5% Chebyshev(Mean, Sd) UCL	126.5	99% Chebyshev(Mean, Sd) UCL	176.5

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	13.3	Mean	14.34
Maximum	15.7	Median	13.8
SD	1.005	Std. Error of Mean	0.335
Coefficient of Variation	0.0701	Skewness	0.481
Mean of logged Data	2.661	SD of logged Data	0.0693

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	14.97	95% Adjusted-CLT UCL (Chen-1995)	14.95
		95% Modified-t UCL (Johnson-1978)	14.98

Nonparametric Distribution Free UCLs

95% CLT UCL	14.9	95% Jackknife UCL	14.97
95% Standard Bootstrap UCL	14.86	95% Bootstrap-t UCL	15.05
95% Hall's Bootstrap UCL	14.78	95% Percentile Bootstrap UCL	14.89
95% BCA Bootstrap UCL	14.9		
90% Chebyshev(Mean, Sd) UCL	15.35	95% Chebyshev(Mean, Sd) UCL	15.8
97.5% Chebyshev(Mean, Sd) UCL	16.44	99% Chebyshev(Mean, Sd) UCL	17.68

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	10.6	Mean	11.22
Maximum	11.9	Median	11.2
SD	0.479	Std. Error of Mean	0.16
Coefficient of Variation	0.0427	Skewness	0.166
Mean of logged Data	2.417	SD of logged Data	0.0426

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.52	95% Adjusted-CLT UCL (Chen-1995)	11.49
		95% Modified-t UCL (Johnson-1978)	11.52

Nonparametric Distribution Free UCLs

95% CLT UCL	11.48	95% Jackknife UCL	11.52

95% Standard Bootstrap UCL	11.48	95% Bootstrap-t UCL	11.55
95% Hall's Bootstrap UCL	11.47	95% Percentile Bootstrap UCL	11.47
95% BCA Bootstrap UCL	11.48		
90% Chebyshev(Mean, Sd) UCL	11.7	95% Chebyshev(Mean, Sd) UCL	11.92
97.5% Chebyshev(Mean, Sd) UCL	12.22	99% Chebyshev(Mean, Sd) UCL	12.81

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	41.5	Mean	45.28
Maximum	51.2	Median	43
SD	4.179	Std. Error of Mean	1.393
Coefficient of Variation	0.0923	Skewness	0.81
Mean of logged Data	3.809	SD of logged Data	0.09

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	47.87	95% Adjusted-CLT UCL (Chen-1995)	47.97
		95% Modified-t UCL (Johnson-1978)	47.93

Nonparametric Distribution Free UCLs

95% CLT UCL	47.57	95% Jackknife UCL	47.87
95% Standard Bootstrap UCL	47.45	95% Bootstrap-t UCL	48.17
95% Hall's Bootstrap UCL	46.72	95% Percentile Bootstrap UCL	47.4
95% BCA Bootstrap UCL	47.94		
90% Chebyshev(Mean, Sd) UCL	49.46	95% Chebyshev(Mean, Sd) UCL	51.35
97.5% Chebyshev(Mean, Sd) UCL	53.98	99% Chebyshev(Mean, Sd) UCL	59.14

Suggested UCL to Use

95% Student's-t UCL	47.87	or 95% Modified-t UCL	47.93

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:46:14 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32436011) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.885	Mean	0.975
Maximum	1.12	Median	0.955
SD	0.0777	Std. Error of Mean	0.0259
Coefficient of Variation	0.0797	Skewness	0.757
Mean of logged Data	-0.0281	SD of logged Data	0.0783

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.023	95% Adjusted-CLT UCL (Chen-1995)	1.025
		95% Modified-t UCL (Johnson-1978)	1.024

Nonparametric Distribution Free UCLs

95% CLT UCL	1.018	95% Jackknife UCL	1.023
95% Standard Bootstrap UCL	1.015	95% Bootstrap-t UCL	1.035
95% Hall's Bootstrap UCL	1.052	95% Percentile Bootstrap UCL	1.017
95% BCA Bootstrap UCL	1.024		
90% Chebyshev(Mean, Sd) UCL	1.053	95% Chebyshev(Mean, Sd) UCL	1.088
97.5% Chebyshev(Mean, Sd) UCL	1.137	99% Chebyshev(Mean, Sd) UCL	1.233

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.495	Mean	1.323
Maximum	2.57	Median	0.983
SD	0.899	Std. Error of Mean	0.3
Coefficient of Variation	0.679	Skewness	0.676
Mean of logged Data	0.0687	SD of logged Data	0.692

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1.881	95% Adjusted-CLT UCL (Chen-1995)	1.888
		95% Modified-t UCL (Johnson-1978)	1.892

Nonparametric Distribution Free UCLs

95% CLT UCL	1.816	95% Jackknife UCL	1.881
95% Standard Bootstrap UCL	1.793	95% Bootstrap-t UCL	1.943
95% Hall's Bootstrap UCL	1.674	95% Percentile Bootstrap UCL	1.783
95% BCA Bootstrap UCL	1.863		
90% Chebyshev(Mean, Sd) UCL	2.222	95% Chebyshev(Mean, Sd) UCL	2.629
97.5% Chebyshev(Mean, Sd) UCL	3.194	99% Chebyshev(Mean, Sd) UCL	4.304

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.01	Mean	4.982
Maximum	10.5	Median	3.83
SD	3.369	Std. Error of Mean	1.123
Coefficient of Variation	0.676	Skewness	0.805
Mean of logged Data	1.405	SD of logged Data	0.666

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	7.07	95% Adjusted-CLT UCL (Chen-1995)	7.151
		95% Modified-t UCL (Johnson-1978)	7.12

Nonparametric Distribution Free UCLs

95% CLT UCL	6.829	95% Jackknife UCL	7.07
95% Standard Bootstrap UCL	6.699	95% Bootstrap-t UCL	7.424
95% Hall's Bootstrap UCL	6.442	95% Percentile Bootstrap UCL	6.793
95% BCA Bootstrap UCL	7.017		
90% Chebyshev(Mean, Sd) UCL	8.35	95% Chebyshev(Mean, Sd) UCL	9.876
97.5% Chebyshev(Mean, Sd) UCL	11.99	99% Chebyshev(Mean, Sd) UCL	16.15

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	39.85
Maximum	89.9	Median	32
SD	36.05	Std. Error of Mean	12.02
Coefficient of Variation	0.905	Skewness	0.438
Mean of logged Data	2.963	SD of logged Data	1.557

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	62.2	95% Adjusted-CLT UCL (Chen-1995)	61.49
		95% Modified-t UCL (Johnson-1978)	62.49

Nonparametric Distribution Free UCLs

95% CLT UCL	59.62	95% Jackknife UCL	62.2
95% Standard Bootstrap UCL	58.83	95% Bootstrap-t UCL	65.38
95% Hall's Bootstrap UCL	57.7	95% Percentile Bootstrap UCL	59.13
95% BCA Bootstrap UCL	59.93		
90% Chebyshev(Mean, Sd) UCL	75.9	95% Chebyshev(Mean, Sd) UCL	92.23
97.5% Chebyshev(Mean, Sd) UCL	114.9	99% Chebyshev(Mean, Sd) UCL	159.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.49	Mean	50.55
Maximum	110	Median	41.2
SD	44.66	Std. Error of Mean	14.89
Coefficient of Variation	0.883	Skewness	0.369
Mean of logged Data	3.177	SD of logged Data	1.634

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.24	95% Adjusted-CLT UCL (Chen-1995)	76.99
		95% Modified-t UCL (Johnson-1978)	78.54

Nonparametric Distribution Free UCLs

95% CLT UCL	75.04	95% Jackknife UCL	78.24
95% Standard Bootstrap UCL	73.56	95% Bootstrap-t UCL	79.54
95% Hall's Bootstrap UCL	72.64	95% Percentile Bootstrap UCL	74.74
95% BCA Bootstrap UCL	75.84		
90% Chebyshev(Mean, Sd) UCL	95.21	95% Chebyshev(Mean, Sd) UCL	115.4
97.5% Chebyshev(Mean, Sd) UCL	143.5	99% Chebyshev(Mean, Sd) UCL	198.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	72.47
Maximum	160	Median	59.7
SD	63.97	Std. Error of Mean	21.32
Coefficient of Variation	0.883	Skewness	0.373
Mean of logged Data	3.552	SD of logged Data	1.597

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	112.1	95% Adjusted-CLT UCL (Chen-1995)	110.4
		95% Modified-t UCL (Johnson-1978)	112.6

Nonparametric Distribution Free UCLs

95% CLT UCL	107.5	95% Jackknife UCL	112.1
95% Standard Bootstrap UCL	105.4	95% Bootstrap-t UCL	113.4
95% Hall's Bootstrap UCL	106.3	95% Percentile Bootstrap UCL	107.5
95% BCA Bootstrap UCL	108.4		
90% Chebyshev(Mean, Sd) UCL	136.4	95% Chebyshev(Mean, Sd) UCL	165.4
97.5% Chebyshev(Mean, Sd) UCL	205.6	99% Chebyshev(Mean, Sd) UCL	284.6

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	39.86
Maximum	87.6	Median	33.5
SD	34.26	Std. Error of Mean	11.42
Coefficient of Variation	0.859	Skewness	0.38
Mean of logged Data	3.085	SD of logged Data	1.378

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	61.1	95% Adjusted-CLT UCL (Chen-1995)	60.19
		95% Modified-t UCL (Johnson-1978)	61.34

Nonparametric Distribution Free UCLs

95% CLT UCL	58.64	95% Jackknife UCL	61.1

95% Standard Bootstrap UCL	57.4	95% Bootstrap-t UCL	63.46
95% Hall's Bootstrap UCL	57.94	95% Percentile Bootstrap UCL	57.39
95% BCA Bootstrap UCL	59.24		
90% Chebyshev(Mean, Sd) UCL	74.12	95% Chebyshev(Mean, Sd) UCL	89.63
97.5% Chebyshev(Mean, Sd) UCL	111.2	99% Chebyshev(Mean, Sd) UCL	153.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.055	Mean	26.52
Maximum	57.9	Median	21.9
SD	23.12	Std. Error of Mean	7.708
Coefficient of Variation	0.872	Skewness	0.405
Mean of logged Data	2.665	SD of logged Data	1.39

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.85	95% Adjusted-CLT UCL (Chen-1995)	40.31
		95% Modified-t UCL (Johnson-1978)	41.03

Nonparametric Distribution Free UCLs

95% CLT UCL	39.2	95% Jackknife UCL	40.85
95% Standard Bootstrap UCL	38.33	95% Bootstrap-t UCL	42.96
95% Hall's Bootstrap UCL	37.88	95% Percentile Bootstrap UCL	38.87
95% BCA Bootstrap UCL	40.59		
90% Chebyshev(Mean, Sd) UCL	49.64	95% Chebyshev(Mean, Sd) UCL	60.12
97.5% Chebyshev(Mean, Sd) UCL	74.66	99% Chebyshev(Mean, Sd) UCL	103.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.055	Mean	51.79
Maximum	114	Median	41.9
SD	46.52	Std. Error of Mean	15.51
Coefficient of Variation	0.898	Skewness	0.399
Mean of logged Data	3.185	SD of logged Data	1.638

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	80.63	95% Adjusted-CLT UCL (Chen-1995)	79.51
		95% Modified-t UCL (Johnson-1978)	80.97

Nonparametric Distribution Free UCLs

95% CLT UCL	77.3	95% Jackknife UCL	80.63
95% Standard Bootstrap UCL	75.78	95% Bootstrap-t UCL	85.73
95% Hall's Bootstrap UCL	73.02	95% Percentile Bootstrap UCL	76.31
95% BCA Bootstrap UCL	78.17		
90% Chebyshev(Mean, Sd) UCL	98.31	95% Chebyshev(Mean, Sd) UCL	119.4
97.5% Chebyshev(Mean, Sd) UCL	148.6	99% Chebyshev(Mean, Sd) UCL	206.1

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.09	Mean	10.16
Maximum	20.8	Median	7.93
SD	7.158	Std. Error of Mean	2.386
Coefficient of Variation	0.704	Skewness	0.588
Mean of logged Data	2.067	SD of logged Data	0.779

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.6	95% Adjusted-CLT UCL (Chen-1995)	14.59
		95% Modified-t UCL (Johnson-1978)	14.68

Nonparametric Distribution Free UCLs

95% CLT UCL	14.09	95% Jackknife UCL	14.6
95% Standard Bootstrap UCL	13.84	95% Bootstrap-t UCL	15.31
95% Hall's Bootstrap UCL	13.7	95% Percentile Bootstrap UCL	13.95
95% BCA Bootstrap UCL	14.13		
90% Chebyshev(Mean, Sd) UCL	17.32	95% Chebyshev(Mean, Sd) UCL	20.56
97.5% Chebyshev(Mean, Sd) UCL	25.06	99% Chebyshev(Mean, Sd) UCL	33.9

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.16	Mean	65.63
Maximum	149	Median	55.7
SD	58.22	Std. Error of Mean	19.41
Coefficient of Variation	0.887	Skewness	0.384
Mean of logged Data	3.439	SD of logged Data	1.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	101.7	95% Adjusted-CLT UCL (Chen-1995)	100.2
		95% Modified-t UCL (Johnson-1978)	102.1

Nonparametric Distribution Free UCLs

95% CLT UCL	97.55	95% Jackknife UCL	101.7
95% Standard Bootstrap UCL	96.23	95% Bootstrap-t UCL	106.4
95% Hall's Bootstrap UCL	94.95	95% Percentile Bootstrap UCL	96.93
95% BCA Bootstrap UCL	97.07		
90% Chebyshev(Mean, Sd) UCL	123.8	95% Chebyshev(Mean, Sd) UCL	150.2
97.5% Chebyshev(Mean, Sd) UCL	186.8	99% Chebyshev(Mean, Sd) UCL	258.7

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.936	Mean	1.161
Maximum	1.31	Median	1.185
SD	0.132	Std. Error of Mean	0.0442
Coefficient of Variation	0.114	Skewness	-0.753
Mean of logged Data	0.143	SD of logged Data	0.119

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.243	95% Adjusted-CLT UCL (Chen-1995)	1.221
		95% Modified-t UCL (Johnson-1978)	1.241

Nonparametric Distribution Free UCLs

95% CLT UCL	1.233	95% Jackknife UCL	1.243
95% Standard Bootstrap UCL	1.229	95% Bootstrap-t UCL	1.228
95% Hall's Bootstrap UCL	1.22	95% Percentile Bootstrap UCL	1.228
95% BCA Bootstrap UCL	1.217		
90% Chebyshev(Mean, Sd) UCL	1.293	95% Chebyshev(Mean, Sd) UCL	1.353
97.5% Chebyshev(Mean, Sd) UCL	1.436	99% Chebyshev(Mean, Sd) UCL	1.6

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	44.24
Maximum	99.1	Median	38.1
SD	38.74	Std. Error of Mean	12.91
Coefficient of Variation	0.876	Skewness	0.418
Mean of logged Data	3.156	SD of logged Data	1.425

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	68.25	95% Adjusted-CLT UCL (Chen-1995)	67.4
		95% Modified-t UCL (Johnson-1978)	68.55

Nonparametric Distribution Free UCLs

95% CLT UCL	65.48	95% Jackknife UCL	68.25
95% Standard Bootstrap UCL	64.58	95% Bootstrap-t UCL	71.16
95% Hall's Bootstrap UCL	61.18	95% Percentile Bootstrap UCL	64.56
95% BCA Bootstrap UCL	65.25		
90% Chebyshev(Mean, Sd) UCL	82.98	95% Chebyshev(Mean, Sd) UCL	100.5
97.5% Chebyshev(Mean, Sd) UCL	124.9	99% Chebyshev(Mean, Sd) UCL	172.7

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.925	Mean	1.45
Maximum	2.46	Median	1.01
SD	0.703	Std. Error of Mean	0.234
Coefficient of Variation	0.485	Skewness	0.87
Mean of logged Data	0.277	SD of logged Data	0.445

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.886	95% Adjusted-CLT UCL (Chen-1995)	1.908
		95% Modified-t UCL (Johnson-1978)	1.897

Nonparametric Distribution Free UCLs

95% CLT UCL	1.835	95% Jackknife UCL	1.886
95% Standard Bootstrap UCL	1.811	95% Bootstrap-t UCL	1.982
95% Hall's Bootstrap UCL	1.678	95% Percentile Bootstrap UCL	1.788
95% BCA Bootstrap UCL	1.905		
90% Chebyshev(Mean, Sd) UCL	2.153	95% Chebyshev(Mean, Sd) UCL	2.471
97.5% Chebyshev(Mean, Sd) UCL	2.913	99% Chebyshev(Mean, Sd) UCL	3.782

Suggested UCL to Use

95% Student's-t UCL	1.886	or 95% Modified-t UCL	1.897

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.165	Mean	25.85
Maximum	58.9	Median	22.1
SD	22.21	Std. Error of Mean	7.402
Coefficient of Variation	0.859	Skewness	0.468
Mean of logged Data	2.726	SD of logged Data	1.24

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	39.61	95% Adjusted-CLT UCL (Chen-1995)	39.26
		95% Modified-t UCL (Johnson-1978)	39.8

Nonparametric Distribution Free UCLs

95% CLT UCL	38.02	95% Jackknife UCL	39.61
95% Standard Bootstrap UCL	37.46	95% Bootstrap-t UCL	41.55
95% Hall's Bootstrap UCL	36.77	95% Percentile Bootstrap UCL	37.59
95% BCA Bootstrap UCL	38.39		
90% Chebyshev(Mean, Sd) UCL	48.05	95% Chebyshev(Mean, Sd) UCL	58.11
97.5% Chebyshev(Mean, Sd) UCL	72.07	99% Chebyshev(Mean, Sd) UCL	99.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.11	Mean	63.38
Maximum	141	Median	53.2
SD	55.93	Std. Error of Mean	18.64
Coefficient of Variation	0.883	Skewness	0.37
Mean of logged Data	3.411	SD of logged Data	1.616

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	98.05	95% Adjusted-CLT UCL (Chen-1995)	96.5
		95% Modified-t UCL (Johnson-1978)	98.43

Nonparametric Distribution Free UCLs

95% CLT UCL	94.04	95% Jackknife UCL	98.05
95% Standard Bootstrap UCL	92.81	95% Bootstrap-t UCL	99.33
95% Hall's Bootstrap UCL	89.59	95% Percentile Bootstrap UCL	92.18
95% BCA Bootstrap UCL	92.86		
90% Chebyshev(Mean, Sd) UCL	119.3	95% Chebyshev(Mean, Sd) UCL	144.6
97.5% Chebyshev(Mean, Sd) UCL	179.8	99% Chebyshev(Mean, Sd) UCL	248.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	11.6	Mean	13.09
Maximum	15.5	Median	12.6

SD	1.45	Std. Error of Mean	0.483
Coefficient of Variation	0.111	Skewness	0.771
Mean of logged Data	2.567	SD of logged Data	0.108

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.99	95% Adjusted-CLT UCL (Chen-1995)	14.02
		95% Modified-t UCL (Johnson-1978)	14.01

Nonparametric Distribution Free UCLs

95% CLT UCL	13.89	95% Jackknife UCL	13.99
95% Standard Bootstrap UCL	13.84	95% Bootstrap-t UCL	14.23
95% Hall's Bootstrap UCL	13.81	95% Percentile Bootstrap UCL	13.84
95% BCA Bootstrap UCL	13.98		
90% Chebyshev(Mean, Sd) UCL	14.54	95% Chebyshev(Mean, Sd) UCL	15.2
97.5% Chebyshev(Mean, Sd) UCL	16.11	99% Chebyshev(Mean, Sd) UCL	17.9

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.4	Mean	23.9
Maximum	65.1	Median	15.8
SD	18.2	Std. Error of Mean	6.066
Coefficient of Variation	0.761	Skewness	1.713
Mean of logged Data	2.968	SD of logged Data	0.647

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.18	95% Adjusted-CLT UCL (Chen-1995)	37.58
		95% Modified-t UCL (Johnson-1978)	35.76

Nonparametric Distribution Free UCLs

95% CLT UCL	33.88	95% Jackknife UCL	35.18
95% Standard Bootstrap UCL	33.37	95% Bootstrap-t UCL	44.29
95% Hall's Bootstrap UCL	38.76	95% Percentile Bootstrap UCL	34.51
95% BCA Bootstrap UCL	36.53		
90% Chebyshev(Mean, Sd) UCL	42.1	95% Chebyshev(Mean, Sd) UCL	50.34
97.5% Chebyshev(Mean, Sd) UCL	61.79	99% Chebyshev(Mean, Sd) UCL	84.26

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	39.8	Mean	48.39
Maximum	64.5	Median	48.5
SD	7.054	Std. Error of Mean	2.351
Coefficient of Variation	0.146	Skewness	1.445
Mean of logged Data	3.871	SD of logged Data	0.138

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	52.76	95% Adjusted-CLT UCL (Chen-1995)	53.47
		95% Modified-t UCL (Johnson-1978)	52.95

Nonparametric Distribution Free UCLs

95% CLT UCL	52.26	95% Jackknife UCL	52.76
95% Standard Bootstrap UCL	52.09	95% Bootstrap-t UCL	54.18
95% Hall's Bootstrap UCL	72.74	95% Percentile Bootstrap UCL	52.28
95% BCA Bootstrap UCL	53.14		
90% Chebyshev(Mean, Sd) UCL	55.44	95% Chebyshev(Mean, Sd) UCL	58.64
97.5% Chebyshev(Mean, Sd) UCL	63.07	99% Chebyshev(Mean, Sd) UCL	71.78

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:48:43 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32436012) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	0.881	Mean	1.812
Maximum	8.2	Median	1.37
SD	1.835	Std. Error of Mean	0.474
Coefficient of Variation	1.013	Skewness	3.42
Mean of logged Data	0.369	SD of logged Data	0.585

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.647	95% Adjusted-CLT UCL (Chen-1995)	3.038
		95% Modified-t UCL (Johnson-1978)	2.716

Nonparametric Distribution Free UCLs

95% CLT UCL	2.591	95% Jackknife UCL	2.647
95% Standard Bootstrap UCL	2.561	95% Bootstrap-t UCL	4.592
95% Hall's Bootstrap UCL	5.42	95% Percentile Bootstrap UCL	2.664
95% BCA Bootstrap UCL	3.11		
90% Chebyshev(Mean, Sd) UCL	3.233	95% Chebyshev(Mean, Sd) UCL	3.877
97.5% Chebyshev(Mean, Sd) UCL	4.771	99% Chebyshev(Mean, Sd) UCL	6.526

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	0.478	Mean	2.826
Maximum	16.8	Median	1.7
SD	4.248	Std. Error of Mean	1.135
Coefficient of Variation	1.503	Skewness	3.109

Mean of logged Data	0.397	SD of logged Data	1.109

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.837	95% Adjusted-CLT UCL (Chen-1995)	5.702
		95% Modified-t UCL (Johnson-1978)	4.994

Nonparametric Distribution Free UCLs

95% CLT UCL	4.694	95% Jackknife UCL	4.837
95% Standard Bootstrap UCL	4.582	95% Bootstrap-t UCL	8.213
95% Hall's Bootstrap UCL	11.59	95% Percentile Bootstrap UCL	4.84
95% BCA Bootstrap UCL	6.026		
90% Chebyshev(Mean, Sd) UCL	6.232	95% Chebyshev(Mean, Sd) UCL	7.775
97.5% Chebyshev(Mean, Sd) UCL	9.917	99% Chebyshev(Mean, Sd) UCL	14.12

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	7.775

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2.02	Mean	8.635
Maximum	27.3	Median	4.9
SD	8.25	Std. Error of Mean	2.205
Coefficient of Variation	0.955	Skewness	1.137
Mean of logged Data	1.706	SD of logged Data	0.999

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.54	95% Adjusted-CLT UCL (Chen-1995)	12.98
		95% Modified-t UCL (Johnson-1978)	12.65

Nonparametric Distribution Free UCLs

95% CLT UCL	12.26	95% Jackknife UCL	12.54
95% Standard Bootstrap UCL	12.12	95% Bootstrap-t UCL	13.7
95% Hall's Bootstrap UCL	12.69	95% Percentile Bootstrap UCL	12.47
95% BCA Bootstrap UCL	12.69		
90% Chebyshev(Mean, Sd) UCL	15.25	95% Chebyshev(Mean, Sd) UCL	18.25
97.5% Chebyshev(Mean, Sd) UCL	22.41	99% Chebyshev(Mean, Sd) UCL	30.57

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2	Mean	54.59
Maximum	179	Median	40.2
SD	60.53	Std. Error of Mean	15.63
Coefficient of Variation	1.109	Skewness	0.795
Mean of logged Data	2.788	SD of logged Data	1.938

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	82.12	95% Adjusted-CLT UCL (Chen-1995)	83.73
		95% Modified-t UCL (Johnson-1978)	82.65

Nonparametric Distribution Free UCLs

95% CLT UCL	80.3	95% Jackknife UCL	82.12
95% Standard Bootstrap UCL	79.13	95% Bootstrap-t UCL	89.16
95% Hall's Bootstrap UCL	82.47	95% Percentile Bootstrap UCL	80.84
95% BCA Bootstrap UCL	82.41		
90% Chebyshev(Mean, Sd) UCL	101.5	95% Chebyshev(Mean, Sd) UCL	122.7
97.5% Chebyshev(Mean, Sd) UCL	152.2	99% Chebyshev(Mean, Sd) UCL	210.1

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	210.1

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.02	Mean	74.81
Maximum	250	Median	61.9
SD	82.39	Std. Error of Mean	21.27
Coefficient of Variation	1.101	Skewness	0.778

Mean of logged Data	3.007	SD of logged Data	2.063

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	112.3	95% Adjusted-CLT UCL (Chen-1995)	114.4
		95% Modified-t UCL (Johnson-1978)	113

Nonparametric Distribution Free UCLs

95% CLT UCL	109.8	95% Jackknife UCL	112.3
95% Standard Bootstrap UCL	108.5	95% Bootstrap-t UCL	119.4
95% Hall's Bootstrap UCL	112.5	95% Percentile Bootstrap UCL	107.2
95% BCA Bootstrap UCL	113.3		
90% Chebyshev(Mean, Sd) UCL	138.6	95% Chebyshev(Mean, Sd) UCL	167.5
97.5% Chebyshev(Mean, Sd) UCL	207.7	99% Chebyshev(Mean, Sd) UCL	286.5

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	286.5

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.77	Mean	97.88
Maximum	300	Median	85.1
SD	105	Std. Error of Mean	27.12
Coefficient of Variation	1.073	Skewness	0.643
Mean of logged Data	3.346	SD of logged Data	1.994

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	145.6	95% Adjusted-CLT UCL (Chen-1995)	147.3
		95% Modified-t UCL (Johnson-1978)	146.4

Nonparametric Distribution Free UCLs

95% CLT UCL	142.5	95% Jackknife UCL	145.6
95% Standard Bootstrap UCL	141.5	95% Bootstrap-t UCL	151.3
95% Hall's Bootstrap UCL	142.9	95% Percentile Bootstrap UCL	140.4
95% BCA Bootstrap UCL	143.7		
90% Chebyshev(Mean, Sd) UCL	179.2	95% Chebyshev(Mean, Sd) UCL	216.1
97.5% Chebyshev(Mean, Sd) UCL	267.2	99% Chebyshev(Mean, Sd) UCL	367.7

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	367.7

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.33	Mean	55.1
Maximum	173	Median	46.7
SD	58.38	Std. Error of Mean	15.07
Coefficient of Variation	1.059	Skewness	0.68
Mean of logged Data	2.955	SD of logged Data	1.773

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	81.65	95% Adjusted-CLT UCL (Chen-1995)	82.73
		95% Modified-t UCL (Johnson-1978)	82.09

Nonparametric Distribution Free UCLs

95% CLT UCL	79.9	95% Jackknife UCL	81.65
95% Standard Bootstrap UCL	79.14	95% Bootstrap-t UCL	87.06
95% Hall's Bootstrap UCL	81.62	95% Percentile Bootstrap UCL	79.49
95% BCA Bootstrap UCL	81.87		
90% Chebyshev(Mean, Sd) UCL	100.3	95% Chebyshev(Mean, Sd) UCL	120.8
97.5% Chebyshev(Mean, Sd) UCL	149.2	99% Chebyshev(Mean, Sd) UCL	205.1

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	205.1

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0

Minimum	2.02	Mean	38.49
Maximum	119	Median	31
SD	41.22	Std. Error of Mean	10.64
Coefficient of Variation	1.071	Skewness	0.684
Mean of logged Data	2.575	SD of logged Data	1.789

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	57.24	95% Adjusted-CLT UCL (Chen-1995)	58.01
		95% Modified-t UCL (Johnson-1978)	57.55

Nonparametric Distribution Free UCLs

95% CLT UCL	56	95% Jackknife UCL	57.24
95% Standard Bootstrap UCL	55.39	95% Bootstrap-t UCL	59.31
95% Hall's Bootstrap UCL	57.32	95% Percentile Bootstrap UCL	55.65
95% BCA Bootstrap UCL	57.42		
90% Chebyshev(Mean, Sd) UCL	70.42	95% Chebyshev(Mean, Sd) UCL	84.88
97.5% Chebyshev(Mean, Sd) UCL	105	99% Chebyshev(Mean, Sd) UCL	144.4

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	144.4

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.02	Mean	72.22
Maximum	256	Median	60.1
SD	81.08	Std. Error of Mean	20.93
Coefficient of Variation	1.123	Skewness	0.944
Mean of logged Data	3.009	SD of logged Data	2.016

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	109.1	95% Adjusted-CLT UCL (Chen-1995)	112.1
		95% Modified-t UCL (Johnson-1978)	109.9

Nonparametric Distribution Free UCLs

95% CLT UCL	106.7	95% Jackknife UCL	109.1
95% Standard Bootstrap UCL	105.7	95% Bootstrap-t UCL	117.3

95% Hall's Bootstrap UCL	114.6	95% Percentile Bootstrap UCL	105.4
95% BCA Bootstrap UCL	107.6		
90% Chebyshev(Mean, Sd) UCL	135	95% Chebyshev(Mean, Sd) UCL	163.5
97.5% Chebyshev(Mean, Sd) UCL	203	99% Chebyshev(Mean, Sd) UCL	280.5

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	280.5

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	3.11	Mean	16.35
Maximum	47.7	Median	12.75
SD	14.69	Std. Error of Mean	3.925
Coefficient of Variation	0.898	Skewness	0.817
Mean of logged Data	2.312	SD of logged Data	1.087

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.3	95% Adjusted-CLT UCL (Chen-1995)	23.72
		95% Modified-t UCL (Johnson-1978)	23.44

Nonparametric Distribution Free UCLs

95% CLT UCL	22.8	95% Jackknife UCL	23.3
95% Standard Bootstrap UCL	22.7	95% Bootstrap-t UCL	24.78
95% Hall's Bootstrap UCL	23.82	95% Percentile Bootstrap UCL	22.92
95% BCA Bootstrap UCL	23.66		
90% Chebyshev(Mean, Sd) UCL	28.12	95% Chebyshev(Mean, Sd) UCL	33.45
97.5% Chebyshev(Mean, Sd) UCL	40.86	99% Chebyshev(Mean, Sd) UCL	55.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	33.45

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.02	Mean	95.04
Maximum	286	Median	74.9
SD	105.1	Std. Error of Mean	27.14
Coefficient of Variation	1.106	Skewness	0.724
Mean of logged Data	3.174	SD of logged Data	2.148

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	142.8	95% Adjusted-CLT UCL (Chen-1995)	145.1
		95% Modified-t UCL (Johnson-1978)	143.7

Nonparametric Distribution Free UCLs

95% CLT UCL	139.7	95% Jackknife UCL	142.8
95% Standard Bootstrap UCL	136.2	95% Bootstrap-t UCL	151.3
95% Hall's Bootstrap UCL	142.8	95% Percentile Bootstrap UCL	140.5
95% BCA Bootstrap UCL	144.7		
90% Chebyshev(Mean, Sd) UCL	176.4	95% Chebyshev(Mean, Sd) UCL	213.3
97.5% Chebyshev(Mean, Sd) UCL	264.5	99% Chebyshev(Mean, Sd) UCL	365

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	365

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	1.245	Mean	1.779
Maximum	5.44	Median	1.313
SD	1.189	Std. Error of Mean	0.343
Coefficient of Variation	0.668	Skewness	3.133
Mean of logged Data	0.464	SD of logged Data	0.424

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2.395	95% Adjusted-CLT UCL (Chen-1995)	2.675
		95% Modified-t UCL (Johnson-1978)	2.447

Nonparametric Distribution Free UCLs

95% CLT UCL	2.344	95% Jackknife UCL	2.395
95% Standard Bootstrap UCL	2.326	95% Bootstrap-t UCL	5.523
95% Hall's Bootstrap UCL	4.456	95% Percentile Bootstrap UCL	2.423
95% BCA Bootstrap UCL	2.796		
90% Chebyshev(Mean, Sd) UCL	2.809	95% Chebyshev(Mean, Sd) UCL	3.275
97.5% Chebyshev(Mean, Sd) UCL	3.922	99% Chebyshev(Mean, Sd) UCL	5.194

Suggested UCL to Use

95% Student's-t UCL	2.395	or 95% Modified-t UCL	2.447

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.19	Mean	61.19
Maximum	183	Median	52.6
SD	64.56	Std. Error of Mean	16.67
Coefficient of Variation	1.055	Skewness	0.599
Mean of logged Data	2.999	SD of logged Data	1.85

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	90.55	95% Adjusted-CLT UCL (Chen-1995)	91.36
		95% Modified-t UCL (Johnson-1978)	90.98

Nonparametric Distribution Free UCLs

95% CLT UCL	88.61	95% Jackknife UCL	90.55
95% Standard Bootstrap UCL	88.57	95% Bootstrap-t UCL	95.17
95% Hall's Bootstrap UCL	87.52	95% Percentile Bootstrap UCL	89.16
95% BCA Bootstrap UCL	90.31		
90% Chebyshev(Mean, Sd) UCL	111.2	95% Chebyshev(Mean, Sd) UCL	133.9
97.5% Chebyshev(Mean, Sd) UCL	165.3	99% Chebyshev(Mean, Sd) UCL	227.1

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	227.1

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics			
Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	0.935	Mean	4.11
Maximum	30.2	Median	2.76
SD	7.317	Std. Error of Mean	1.889
Coefficient of Variation	1.78	Skewness	3.694
Mean of logged Data	0.824	SD of logged Data	0.937

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.437	95% Adjusted-CLT UCL (Chen-1995)	9.143
		95% Modified-t UCL (Johnson-1978)	7.738

Nonparametric Distribution Free UCLs

95% CLT UCL	7.217	95% Jackknife UCL	7.437
95% Standard Bootstrap UCL	7.04	95% Bootstrap-t UCL	17.86
95% Hall's Bootstrap UCL	20.73	95% Percentile Bootstrap UCL	7.744
95% BCA Bootstrap UCL	9.697		
90% Chebyshev(Mean, Sd) UCL	9.778	95% Chebyshev(Mean, Sd) UCL	12.34
97.5% Chebyshev(Mean, Sd) UCL	15.91	99% Chebyshev(Mean, Sd) UCL	22.91

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics			
Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	3.09	Mean	40.63
Maximum	128	Median	26.4
SD	44.42	Std. Error of Mean	11.47
Coefficient of Variation	1.093	Skewness	0.856
Mean of logged Data	2.768	SD of logged Data	1.604

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	60.83	95% Adjusted-CLT UCL (Chen-1995)	62.2
		95% Modified-t UCL (Johnson-1978)	61.25

Nonparametric Distribution Free UCLs

95% CLT UCL	59.49	95% Jackknife UCL	60.83
95% Standard Bootstrap UCL	58.93	95% Bootstrap-t UCL	63.86
95% Hall's Bootstrap UCL	61.99	95% Percentile Bootstrap UCL	59.56
95% BCA Bootstrap UCL	61.41		
90% Chebyshev(Mean, Sd) UCL	75.03	95% Chebyshev(Mean, Sd) UCL	90.62
97.5% Chebyshev(Mean, Sd) UCL	112.2	99% Chebyshev(Mean, Sd) UCL	154.7

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	154.7

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.37	Mean	93.61
Maximum	314	Median	76.7
SD	104.6	Std. Error of Mean	27.01
Coefficient of Variation	1.118	Skewness	0.867
Mean of logged Data	3.267	SD of logged Data	2.015

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	141.2	95% Adjusted-CLT UCL (Chen-1995)	144.5
		95% Modified-t UCL (Johnson-1978)	142.2

Nonparametric Distribution Free UCLs

95% CLT UCL	138	95% Jackknife UCL	141.2
95% Standard Bootstrap UCL	136.4	95% Bootstrap-t UCL	151.2
95% Hall's Bootstrap UCL	153.7	95% Percentile Bootstrap UCL	139.4
95% BCA Bootstrap UCL	143.2		
90% Chebyshev(Mean, Sd) UCL	174.6	95% Chebyshev(Mean, Sd) UCL	211.4
97.5% Chebyshev(Mean, Sd) UCL	262.3	99% Chebyshev(Mean, Sd) UCL	362.4

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	362.4

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	7.6	Mean	14.16
Maximum	26.1	Median	12.6
SD	5.377	Std. Error of Mean	1.388
Coefficient of Variation	0.38	Skewness	0.975
Mean of logged Data	2.588	SD of logged Data	0.362

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.6	95% Adjusted-CLT UCL (Chen-1995)	16.81
		95% Modified-t UCL (Johnson-1978)	16.66

Nonparametric Distribution Free UCLs

95% CLT UCL	16.44	95% Jackknife UCL	16.6
95% Standard Bootstrap UCL	16.4	95% Bootstrap-t UCL	17.26
95% Hall's Bootstrap UCL	17.2	95% Percentile Bootstrap UCL	16.29
95% BCA Bootstrap UCL	17.02		
90% Chebyshev(Mean, Sd) UCL	18.32	95% Chebyshev(Mean, Sd) UCL	20.21
97.5% Chebyshev(Mean, Sd) UCL	22.83	99% Chebyshev(Mean, Sd) UCL	27.97

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	7.13	Mean	13.95
Maximum	48.6	Median	11
SD	10.15	Std. Error of Mean	2.62
Coefficient of Variation	0.728	Skewness	3.197
Mean of logged Data	2.498	SD of logged Data	0.479

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.56	95% Adjusted-CLT UCL (Chen-1995)	20.57
		95% Modified-t UCL (Johnson-1978)	18.92

Nonparametric Distribution Free UCLs

95% CLT UCL	18.26	95% Jackknife UCL	18.56
95% Standard Bootstrap UCL	18.11	95% Bootstrap-t UCL	25.92
95% Hall's Bootstrap UCL	36.3	95% Percentile Bootstrap UCL	18.59
95% BCA Bootstrap UCL	21.17		
90% Chebyshev(Mean, Sd) UCL	21.81	95% Chebyshev(Mean, Sd) UCL	25.37
97.5% Chebyshev(Mean, Sd) UCL	30.31	99% Chebyshev(Mean, Sd) UCL	40.02

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	29.5	Mean	40.22
Maximum	50.2	Median	41.5
SD	5.86	Std. Error of Mean	1.513
Coefficient of Variation	0.146	Skewness	-0.415
Mean of logged Data	3.684	SD of logged Data	0.153

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.88	95% Adjusted-CLT UCL (Chen-1995)	42.54
		95% Modified-t UCL (Johnson-1978)	42.86

Nonparametric Distribution Free UCLs

95% CLT UCL	42.71	95% Jackknife UCL	42.88
95% Standard Bootstrap UCL	42.61	95% Bootstrap-t UCL	42.74
95% Hall's Bootstrap UCL	42.58	95% Percentile Bootstrap UCL	42.59
95% BCA Bootstrap UCL	42.51		
90% Chebyshev(Mean, Sd) UCL	44.76	95% Chebyshev(Mean, Sd) UCL	46.82
97.5% Chebyshev(Mean, Sd) UCL	49.67	99% Chebyshev(Mean, Sd) UCL	55.27

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 9:51:32 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32436019) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.714	Mean	5.73
Maximum	21.1	Median	1.05
SD	6.975	Std. Error of Mean	1.801
Coefficient of Variation	1.217	Skewness	1.384
Mean of logged Data	0.996	SD of logged Data	1.289

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.902	95% Adjusted-CLT UCL (Chen-1995)	9.38
		95% Modified-t UCL (Johnson-1978)	9.01

Nonparametric Distribution Free UCLs

95% CLT UCL	8.693	95% Jackknife UCL	8.902
95% Standard Bootstrap UCL	8.547	95% Bootstrap-t UCL	9.936
95% Hall's Bootstrap UCL	8.59	95% Percentile Bootstrap UCL	8.752
95% BCA Bootstrap UCL	9.348		
90% Chebyshev(Mean, Sd) UCL	11.13	95% Chebyshev(Mean, Sd) UCL	13.58
97.5% Chebyshev(Mean, Sd) UCL	16.98	99% Chebyshev(Mean, Sd) UCL	23.65

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	13.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.505	Mean	17.41
Maximum	74.8	Median	2.97
SD	24.47	Std. Error of Mean	6.318
Coefficient of Variation	1.405	Skewness	1.502

Mean of logged Data	1.495	SD of logged Data	1.929

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.54	95% Adjusted-CLT UCL (Chen-1995)	30.43
		95% Modified-t UCL (Johnson-1978)	28.95

Nonparametric Distribution Free UCLs

95% CLT UCL	27.81	95% Jackknife UCL	28.54
95% Standard Bootstrap UCL	27.62	95% Bootstrap-t UCL	34.06
95% Hall's Bootstrap UCL	28.29	95% Percentile Bootstrap UCL	28.07
95% BCA Bootstrap UCL	30.07		
90% Chebyshev(Mean, Sd) UCL	36.37	95% Chebyshev(Mean, Sd) UCL	44.95
97.5% Chebyshev(Mean, Sd) UCL	56.87	99% Chebyshev(Mean, Sd) UCL	80.28

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.78	Mean	89.74
Maximum	423	Median	16.1
SD	129.2	Std. Error of Mean	33.35
Coefficient of Variation	1.439	Skewness	1.607
Mean of logged Data	2.959	SD of logged Data	2.094

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	148.5	95% Adjusted-CLT UCL (Chen-1995)	159.4
		95% Modified-t UCL (Johnson-1978)	150.8

Nonparametric Distribution Free UCLs

95% CLT UCL	144.6	95% Jackknife UCL	148.5
95% Standard Bootstrap UCL	142.7	95% Bootstrap-t UCL	182.9
95% Hall's Bootstrap UCL	156.2	95% Percentile Bootstrap UCL	149.7
95% BCA Bootstrap UCL	155.8		
90% Chebyshev(Mean, Sd) UCL	189.8	95% Chebyshev(Mean, Sd) UCL	235.1
97.5% Chebyshev(Mean, Sd) UCL	298	99% Chebyshev(Mean, Sd) UCL	421.6

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	4.13	Mean	414.5
Maximum	1590	Median	85.2
SD	551	Std. Error of Mean	142.3
Coefficient of Variation	1.329	Skewness	1.239
Mean of logged Data	4.522	SD of logged Data	2.158

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	665.1	95% Adjusted-CLT UCL (Chen-1995)	697.2
		95% Modified-t UCL (Johnson-1978)	672.7

Nonparametric Distribution Free UCLs

95% CLT UCL	648.5	95% Jackknife UCL	665.1
95% Standard Bootstrap UCL	640.2	95% Bootstrap-t UCL	777.3
95% Hall's Bootstrap UCL	695.6	95% Percentile Bootstrap UCL	642.5
95% BCA Bootstrap UCL	701.2		
90% Chebyshev(Mean, Sd) UCL	841.3	95% Chebyshev(Mean, Sd) UCL	1035
97.5% Chebyshev(Mean, Sd) UCL	1303	99% Chebyshev(Mean, Sd) UCL	1830

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.64	Mean	470.3
Maximum	1760	Median	90.2
SD	627.1	Std. Error of Mean	161.9
Coefficient of Variation	1.333	Skewness	1.256
Mean of logged Data	4.579	SD of logged Data	2.274

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	755.5	95% Adjusted-CLT UCL (Chen-1995)	792.8
		95% Modified-t UCL (Johnson-1978)	764.3

Nonparametric Distribution Free UCLs

95% CLT UCL	736.7	95% Jackknife UCL	755.5
95% Standard Bootstrap UCL	728.8	95% Bootstrap-t UCL	844.5
95% Hall's Bootstrap UCL	774.4	95% Percentile Bootstrap UCL	718.8
95% BCA Bootstrap UCL	779.8		
90% Chebyshev(Mean, Sd) UCL	956.1	95% Chebyshev(Mean, Sd) UCL	1176
97.5% Chebyshev(Mean, Sd) UCL	1482	99% Chebyshev(Mean, Sd) UCL	2081

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	6.36	Mean	604.8
Maximum	2290	Median	122
SD	800.6	Std. Error of Mean	206.7
Coefficient of Variation	1.324	Skewness	1.215
Mean of logged Data	4.898	SD of logged Data	2.154

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	968.9	95% Adjusted-CLT UCL (Chen-1995)	1014
		95% Modified-t UCL (Johnson-1978)	979.7

Nonparametric Distribution Free UCLs

95% CLT UCL	944.8	95% Jackknife UCL	968.9
95% Standard Bootstrap UCL	937.3	95% Bootstrap-t UCL	1175
95% Hall's Bootstrap UCL	995.8	95% Percentile Bootstrap UCL	957.5
95% BCA Bootstrap UCL	973.8		
90% Chebyshev(Mean, Sd) UCL	1225	95% Chebyshev(Mean, Sd) UCL	1506
97.5% Chebyshev(Mean, Sd) UCL	1896	99% Chebyshev(Mean, Sd) UCL	2662

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	4.61	Mean	318.3
Maximum	1200	Median	58.7
SD	423.4	Std. Error of Mean	109.3
Coefficient of Variation	1.33	Skewness	1.217
Mean of logged Data	4.285	SD of logged Data	2.094

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	510.9	95% Adjusted-CLT UCL (Chen-1995)	534.8
		95% Modified-t UCL (Johnson-1978)	516.6

Nonparametric Distribution Free UCLs

95% CLT UCL	498.1	95% Jackknife UCL	510.9
95% Standard Bootstrap UCL	490.3	95% Bootstrap-t UCL	584
95% Hall's Bootstrap UCL	519.2	95% Percentile Bootstrap UCL	500.9
95% BCA Bootstrap UCL	524.8		
90% Chebyshev(Mean, Sd) UCL	646.3	95% Chebyshev(Mean, Sd) UCL	794.8
97.5% Chebyshev(Mean, Sd) UCL	1001	99% Chebyshev(Mean, Sd) UCL	1406

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.28	Mean	240.8
Maximum	941	Median	46.3
SD	325.2	Std. Error of Mean	83.96
Coefficient of Variation	1.351	Skewness	1.311
Mean of logged Data	4	SD of logged Data	2.107

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	388.6	95% Adjusted-CLT UCL (Chen-1995)	409.2
		95% Modified-t UCL (Johnson-1978)	393.4

Nonparametric Distribution Free UCLs

95% CLT UCL	378.9	95% Jackknife UCL	388.6
95% Standard Bootstrap UCL	369.8	95% Bootstrap-t UCL	456.2
95% Hall's Bootstrap UCL	411	95% Percentile Bootstrap UCL	385.9
95% BCA Bootstrap UCL	397.6		
90% Chebyshev(Mean, Sd) UCL	492.6	95% Chebyshev(Mean, Sd) UCL	606.7
97.5% Chebyshev(Mean, Sd) UCL	765.1	99% Chebyshev(Mean, Sd) UCL	1076

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.95	Mean	523
Maximum	2010	Median	109
SD	688.4	Std. Error of Mean	177.8
Coefficient of Variation	1.316	Skewness	1.22
Mean of logged Data	4.718	SD of logged Data	2.256

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	836.1	95% Adjusted-CLT UCL (Chen-1995)	875.2
		95% Modified-t UCL (Johnson-1978)	845.4

Nonparametric Distribution Free UCLs

95% CLT UCL	815.4	95% Jackknife UCL	836.1
95% Standard Bootstrap UCL	802.7	95% Bootstrap-t UCL	953.4
95% Hall's Bootstrap UCL	810.2	95% Percentile Bootstrap UCL	821.2
95% BCA Bootstrap UCL	873		
90% Chebyshev(Mean, Sd) UCL	1056	95% Chebyshev(Mean, Sd) UCL	1298
97.5% Chebyshev(Mean, Sd) UCL	1633	99% Chebyshev(Mean, Sd) UCL	2292

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.14	Mean	78.27
Maximum	309	Median	15.7
SD	102.8	Std. Error of Mean	26.55
Coefficient of Variation	1.314	Skewness	1.282
Mean of logged Data	3.105	SD of logged Data	1.844

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	125	95% Adjusted-CLT UCL (Chen-1995)	131.3
		95% Modified-t UCL (Johnson-1978)	126.5

Nonparametric Distribution Free UCLs

95% CLT UCL	121.9	95% Jackknife UCL	125
95% Standard Bootstrap UCL	119.6	95% Bootstrap-t UCL	140.1
95% Hall's Bootstrap UCL	127.2	95% Percentile Bootstrap UCL	120.8
95% BCA Bootstrap UCL	131.1		
90% Chebyshev(Mean, Sd) UCL	157.9	95% Chebyshev(Mean, Sd) UCL	194
97.5% Chebyshev(Mean, Sd) UCL	244	99% Chebyshev(Mean, Sd) UCL	342.4

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.62	Mean	857.7
Maximum	3520	Median	172
SD	1171	Std. Error of Mean	302.3
Coefficient of Variation	1.365	Skewness	1.315
Mean of logged Data	5.091	SD of logged Data	2.344

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1390	95% Adjusted-CLT UCL (Chen-1995)	1465
		95% Modified-t UCL (Johnson-1978)	1407

Nonparametric Distribution Free UCLs

95% CLT UCL	1355	95% Jackknife UCL	1390
95% Standard Bootstrap UCL	1334	95% Bootstrap-t UCL	1611
95% Hall's Bootstrap UCL	1471	95% Percentile Bootstrap UCL	1381
95% BCA Bootstrap UCL	1423		
90% Chebyshev(Mean, Sd) UCL	1765	95% Chebyshev(Mean, Sd) UCL	2175
97.5% Chebyshev(Mean, Sd) UCL	2746	99% Chebyshev(Mean, Sd) UCL	3866

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.19	Mean	10.35
Maximum	53.1	Median	2.04
SD	15.46	Std. Error of Mean	3.991
Coefficient of Variation	1.493	Skewness	1.983
Mean of logged Data	1.408	SD of logged Data	1.371

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.38	95% Adjusted-CLT UCL (Chen-1995)	19.1
		95% Modified-t UCL (Johnson-1978)	17.72

Nonparametric Distribution Free UCLs

95% CLT UCL	16.92	95% Jackknife UCL	17.38
95% Standard Bootstrap UCL	16.63	95% Bootstrap-t UCL	21.75
95% Hall's Bootstrap UCL	17.12	95% Percentile Bootstrap UCL	16.99
95% BCA Bootstrap UCL	19.2		
90% Chebyshev(Mean, Sd) UCL	22.32	95% Chebyshev(Mean, Sd) UCL	27.75
97.5% Chebyshev(Mean, Sd) UCL	35.27	99% Chebyshev(Mean, Sd) UCL	50.06

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	27.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	5.17	Mean	370
Maximum	1380	Median	66.8
SD	491.8	Std. Error of Mean	127
Coefficient of Variation	1.329	Skewness	1.208
Mean of logged Data	4.412	SD of logged Data	2.121

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	593.6	95% Adjusted-CLT UCL (Chen-1995)	621.2
		95% Modified-t UCL (Johnson-1978)	600.2

Nonparametric Distribution Free UCLs

95% CLT UCL	578.8	95% Jackknife UCL	593.6
95% Standard Bootstrap UCL	573.4	95% Bootstrap-t UCL	694
95% Hall's Bootstrap UCL	608.9	95% Percentile Bootstrap UCL	585.1
95% BCA Bootstrap UCL	619.5		
90% Chebyshev(Mean, Sd) UCL	750.9	95% Chebyshev(Mean, Sd) UCL	923.5
97.5% Chebyshev(Mean, Sd) UCL	1163	99% Chebyshev(Mean, Sd) UCL	1633

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.895	Mean	17.72
Maximum	70.3	Median	2.62
SD	23.12	Std. Error of Mean	5.969
Coefficient of Variation	1.304	Skewness	1.347
Mean of logged Data	1.735	SD of logged Data	1.721

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	28.23	95% Adjusted-CLT UCL (Chen-1995)	29.76

95% Modified-t UCL (Johnson-1978)	28.58

Nonparametric Distribution Free UCLs

95% CLT UCL	27.54	95% Jackknife UCL	28.23
95% Standard Bootstrap UCL	27.06	95% Bootstrap-t UCL	32.38
95% Hall's Bootstrap UCL	28.25	95% Percentile Bootstrap UCL	27.86
95% BCA Bootstrap UCL	29.75		
90% Chebyshev(Mean, Sd) UCL	35.63	95% Chebyshev(Mean, Sd) UCL	43.74
97.5% Chebyshev(Mean, Sd) UCL	55	99% Chebyshev(Mean, Sd) UCL	77.11

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.18	Mean	421.7
Maximum	1750	Median	81.6
SD	579.5	Std. Error of Mean	149.6
Coefficient of Variation	1.374	Skewness	1.327
Mean of logged Data	4.425	SD of logged Data	2.242

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	685.2	95% Adjusted-CLT UCL (Chen-1995)	722.6
		95% Modified-t UCL (Johnson-1978)	693.7

Nonparametric Distribution Free UCLs

95% CLT UCL	667.8	95% Jackknife UCL	685.2
95% Standard Bootstrap UCL	657	95% Bootstrap-t UCL	795.4
95% Hall's Bootstrap UCL	702.7	95% Percentile Bootstrap UCL	665.6
95% BCA Bootstrap UCL	702.3		
90% Chebyshev(Mean, Sd) UCL	870.5	95% Chebyshev(Mean, Sd) UCL	1074
97.5% Chebyshev(Mean, Sd) UCL	1356	99% Chebyshev(Mean, Sd) UCL	1910

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.32	Mean	781.9
Maximum	3180	Median	153
SD	1063	Std. Error of Mean	274.5
Coefficient of Variation	1.359	Skewness	1.326
Mean of logged Data	5.026	SD of logged Data	2.333

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1265	95% Adjusted-CLT UCL (Chen-1995)	1334
		95% Modified-t UCL (Johnson-1978)	1281

Nonparametric Distribution Free UCLs

95% CLT UCL	1233	95% Jackknife UCL	1265
95% Standard Bootstrap UCL	1229	95% Bootstrap-t UCL	1476
95% Hall's Bootstrap UCL	1374	95% Percentile Bootstrap UCL	1222
95% BCA Bootstrap UCL	1304		
90% Chebyshev(Mean, Sd) UCL	1605	95% Chebyshev(Mean, Sd) UCL	1978
97.5% Chebyshev(Mean, Sd) UCL	2496	99% Chebyshev(Mean, Sd) UCL	3513

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	8.57	Mean	17.86
Maximum	50.7	Median	14.2
SD	11.82	Std. Error of Mean	3.053
Coefficient of Variation	0.662	Skewness	1.977
Mean of logged Data	2.735	SD of logged Data	0.521

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	23.24	95% Adjusted-CLT UCL (Chen-1995)	24.55
		95% Modified-t UCL (Johnson-1978)	23.5

Nonparametric Distribution Free UCLs

95% CLT UCL	22.88	95% Jackknife UCL	23.24
95% Standard Bootstrap UCL	22.73	95% Bootstrap-t UCL	27.55
95% Hall's Bootstrap UCL	26.36	95% Percentile Bootstrap UCL	23.29
95% BCA Bootstrap UCL	25.06		
90% Chebyshev(Mean, Sd) UCL	27.02	95% Chebyshev(Mean, Sd) UCL	31.17
97.5% Chebyshev(Mean, Sd) UCL	36.93	99% Chebyshev(Mean, Sd) UCL	48.24

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	31.17

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	7.46	Mean	27.6
Maximum	136	Median	19.3
SD	33.64	Std. Error of Mean	8.686
Coefficient of Variation	1.219	Skewness	2.737
Mean of logged Data	2.897	SD of logged Data	0.861

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	42.9	95% Adjusted-CLT UCL (Chen-1995)	48.45
		95% Modified-t UCL (Johnson-1978)	43.93

Nonparametric Distribution Free UCLs

95% CLT UCL	41.89	95% Jackknife UCL	42.9
95% Standard Bootstrap UCL	41.32	95% Bootstrap-t UCL	60.72
95% Hall's Bootstrap UCL	86.79	95% Percentile Bootstrap UCL	42.68
95% BCA Bootstrap UCL	50.31		
90% Chebyshev(Mean, Sd) UCL	53.66	95% Chebyshev(Mean, Sd) UCL	65.47
97.5% Chebyshev(Mean, Sd) UCL	81.85	99% Chebyshev(Mean, Sd) UCL	114

Suggested UCL to Use

Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	33.3	Mean	43.09
Maximum	53	Median	44
SD	6.258	Std. Error of Mean	1.616
Coefficient of Variation	0.145	Skewness	-0.256
Mean of logged Data	3.753	SD of logged Data	0.15

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	45.93	95% Adjusted-CLT UCL (Chen-1995)	45.63
		95% Modified-t UCL (Johnson-1978)	45.91

Nonparametric Distribution Free UCLs

95% CLT UCL	45.74	95% Jackknife UCL	45.93
95% Standard Bootstrap UCL	45.58	95% Bootstrap-t UCL	45.85
95% Hall's Bootstrap UCL	45.63	95% Percentile Bootstrap UCL	45.63
95% BCA Bootstrap UCL	45.62		
90% Chebyshev(Mean, Sd) UCL	47.93	95% Chebyshev(Mean, Sd) UCL	50.13
97.5% Chebyshev(Mean, Sd) UCL	53.18	99% Chebyshev(Mean, Sd) UCL	59.16

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:04:31 AM
From File	Table 1. Parcel Analytical Results (APN32436020) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.89	Mean	5.06
Maximum	30.4	Median	0.96
SD	8.631	Std. Error of Mean	2.229
Coefficient of Variation	1.706	Skewness	2.464
Mean of logged Data	0.75	SD of logged Data	1.204

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.985	95% Adjusted-CLT UCL (Chen-1995)	10.24
		95% Modified-t UCL (Johnson-1978)	9.222

Nonparametric Distribution Free UCLs

95% CLT UCL	8.726	95% Jackknife UCL	8.985
95% Standard Bootstrap UCL	8.586	95% Bootstrap-t UCL	22.54
95% Hall's Bootstrap UCL	26.07	95% Percentile Bootstrap UCL	9.189
95% BCA Bootstrap UCL	10.05		
90% Chebyshev(Mean, Sd) UCL	11.75	95% Chebyshev(Mean, Sd) UCL	14.77
97.5% Chebyshev(Mean, Sd) UCL	18.98	99% Chebyshev(Mean, Sd) UCL	27.23

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	14.77

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.475	Mean	15.28
Maximum	97.2	Median	0.51
SD	29.53	Std. Error of Mean	7.623
Coefficient of Variation	1.933	Skewness	2.273

Mean of logged Data	0.839	SD of logged Data	2.049

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.7	95% Adjusted-CLT UCL (Chen-1995)	32.6
		95% Modified-t UCL (Johnson-1978)	29.45

Nonparametric Distribution Free UCLs

95% CLT UCL	27.82	95% Jackknife UCL	28.7
95% Standard Bootstrap UCL	27.28	95% Bootstrap-t UCL	60.84
95% Hall's Bootstrap UCL	80.08	95% Percentile Bootstrap UCL	27.83
95% BCA Bootstrap UCL	32.84		
90% Chebyshev(Mean, Sd) UCL	38.15	95% Chebyshev(Mean, Sd) UCL	48.51
97.5% Chebyshev(Mean, Sd) UCL	62.89	99% Chebyshev(Mean, Sd) UCL	91.13

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	91.13

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	1.93	Mean	37.95
Maximum	210	Median	2.08
SD	58.92	Std. Error of Mean	15.21
Coefficient of Variation	1.553	Skewness	2.077
Mean of logged Data	2.173	SD of logged Data	1.886

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.74	95% Adjusted-CLT UCL (Chen-1995)	71.69
		95% Modified-t UCL (Johnson-1978)	66.1

Nonparametric Distribution Free UCLs

95% CLT UCL	62.97	95% Jackknife UCL	64.74
95% Standard Bootstrap UCL	62.55	95% Bootstrap-t UCL	86.11
95% Hall's Bootstrap UCL	166.5	95% Percentile Bootstrap UCL	63.23
95% BCA Bootstrap UCL	70.09		
90% Chebyshev(Mean, Sd) UCL	83.58	95% Chebyshev(Mean, Sd) UCL	104.3
97.5% Chebyshev(Mean, Sd) UCL	132.9	99% Chebyshev(Mean, Sd) UCL	189.3

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	189.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.85	Mean	183.7
Maximum	903	Median	2.66
SD	270.9	Std. Error of Mean	69.93
Coefficient of Variation	1.475	Skewness	1.567
Mean of logged Data	2.913	SD of logged Data	2.649

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	306.8	95% Adjusted-CLT UCL (Chen-1995)	328.9
		95% Modified-t UCL (Johnson-1978)	311.6

Nonparametric Distribution Free UCLs

95% CLT UCL	298.7	95% Jackknife UCL	306.8
95% Standard Bootstrap UCL	294.6	95% Bootstrap-t UCL	366.1
95% Hall's Bootstrap UCL	360.8	95% Percentile Bootstrap UCL	301.4
95% BCA Bootstrap UCL	328.6		
90% Chebyshev(Mean, Sd) UCL	393.5	95% Chebyshev(Mean, Sd) UCL	488.5
97.5% Chebyshev(Mean, Sd) UCL	620.4	99% Chebyshev(Mean, Sd) UCL	879.5

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	879.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.48	Mean	186.2
Maximum	955	Median	2.5
SD	281.7	Std. Error of Mean	72.74
Coefficient of Variation	1.513	Skewness	1.7
Mean of logged Data	2.832	SD of logged Data	2.717

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	314.3	95% Adjusted-CLT UCL (Chen-1995)	339.9
		95% Modified-t UCL (Johnson-1978)	319.6

Nonparametric Distribution Free UCLs

95% CLT UCL	305.8	95% Jackknife UCL	314.3
95% Standard Bootstrap UCL	301.6	95% Bootstrap-t UCL	376
95% Hall's Bootstrap UCL	355.7	95% Percentile Bootstrap UCL	311.4
95% BCA Bootstrap UCL	341.6		
90% Chebyshev(Mean, Sd) UCL	404.4	95% Chebyshev(Mean, Sd) UCL	503.2
97.5% Chebyshev(Mean, Sd) UCL	640.4	99% Chebyshev(Mean, Sd) UCL	909.9

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	909.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3	Mean	254.4
Maximum	1260	Median	4.44
SD	374.9	Std. Error of Mean	96.81
Coefficient of Variation	1.474	Skewness	1.586
Mean of logged Data	3.314	SD of logged Data	2.585

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	424.9	95% Adjusted-CLT UCL (Chen-1995)	455.9
		95% Modified-t UCL (Johnson-1978)	431.5

Nonparametric Distribution Free UCLs

95% CLT UCL	413.6	95% Jackknife UCL	424.9
95% Standard Bootstrap UCL	405.2	95% Bootstrap-t UCL	483.2
95% Hall's Bootstrap UCL	471.2	95% Percentile Bootstrap UCL	420.3
95% BCA Bootstrap UCL	447.6		
90% Chebyshev(Mean, Sd) UCL	544.8	95% Chebyshev(Mean, Sd) UCL	676.3
97.5% Chebyshev(Mean, Sd) UCL	858.9	99% Chebyshev(Mean, Sd) UCL	1218

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	1218

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.05	Mean	138.9
Maximum	682	Median	3.2
SD	203	Std. Error of Mean	52.41
Coefficient of Variation	1.461	Skewness	1.56
Mean of logged Data	2.896	SD of logged Data	2.425

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	231.2	95% Adjusted-CLT UCL (Chen-1995)	247.7
		95% Modified-t UCL (Johnson-1978)	234.7

Nonparametric Distribution Free UCLs

95% CLT UCL	225.1	95% Jackknife UCL	231.2
95% Standard Bootstrap UCL	225.1	95% Bootstrap-t UCL	276.4
95% Hall's Bootstrap UCL	257.5	95% Percentile Bootstrap UCL	227.3
95% BCA Bootstrap UCL	241.3		
90% Chebyshev(Mean, Sd) UCL	296.1	95% Chebyshev(Mean, Sd) UCL	367.4
97.5% Chebyshev(Mean, Sd) UCL	466.2	99% Chebyshev(Mean, Sd) UCL	660.4

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	660.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.93	Mean	105.1
Maximum	485	Median	2.105
SD	150.2	Std. Error of Mean	38.79
Coefficient of Variation	1.43	Skewness	1.387
Mean of logged Data	2.631	SD of logged Data	2.418

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	173.4	95% Adjusted-CLT UCL (Chen-1995)	183.7
		95% Modified-t UCL (Johnson-1978)	175.7

Nonparametric Distribution Free UCLs

95% CLT UCL	168.9	95% Jackknife UCL	173.4
95% Standard Bootstrap UCL	165.6	95% Bootstrap-t UCL	202.9
95% Hall's Bootstrap UCL	183.6	95% Percentile Bootstrap UCL	169.7
95% BCA Bootstrap UCL	179.7		
90% Chebyshev(Mean, Sd) UCL	221.4	95% Chebyshev(Mean, Sd) UCL	274.1
97.5% Chebyshev(Mean, Sd) UCL	347.3	99% Chebyshev(Mean, Sd) UCL	491

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 491

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.97	Mean	229
Maximum	1170	Median	3.56
SD	349.1	Std. Error of Mean	90.13
Coefficient of Variation	1.524	Skewness	1.702
Mean of logged Data	3.113	SD of logged Data	2.651

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	387.8	95% Adjusted-CLT UCL (Chen-1995)	419.6
		95% Modified-t UCL (Johnson-1978)	394.4

Nonparametric Distribution Free UCLs

95% CLT UCL	377.3	95% Jackknife UCL	387.8
95% Standard Bootstrap UCL	372.3	95% Bootstrap-t UCL	480.6
95% Hall's Bootstrap UCL	473.2	95% Percentile Bootstrap UCL	382.9
95% BCA Bootstrap UCL	426.7		
90% Chebyshev(Mean, Sd) UCL	499.4	95% Chebyshev(Mean, Sd) UCL	621.9
97.5% Chebyshev(Mean, Sd) UCL	791.9	99% Chebyshev(Mean, Sd) UCL	1126

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL 1126

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.97	Mean	32.87
Maximum	155	Median	3.2
SD	46.49	Std. Error of Mean	12
Coefficient of Variation	1.415	Skewness	1.651
Mean of logged Data	2.368	SD of logged Data	1.594

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	54.01	95% Adjusted-CLT UCL (Chen-1995)	58.08
		95% Modified-t UCL (Johnson-1978)	54.86

Nonparametric Distribution Free UCLs

95% CLT UCL	52.61	95% Jackknife UCL	54.01
95% Standard Bootstrap UCL	52.08	95% Bootstrap-t UCL	64.13
95% Hall's Bootstrap UCL	60.68	95% Percentile Bootstrap UCL	51.96
95% BCA Bootstrap UCL	59.5		
90% Chebyshev(Mean, Sd) UCL	68.88	95% Chebyshev(Mean, Sd) UCL	85.19
97.5% Chebyshev(Mean, Sd) UCL	107.8	99% Chebyshev(Mean, Sd) UCL	152.3

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	152.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.9	Mean	304.2
Maximum	1560	Median	5.18
SD	452.5	Std. Error of Mean	116.8
Coefficient of Variation	1.488	Skewness	1.702
Mean of logged Data	3.388	SD of logged Data	2.697

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	510	95% Adjusted-CLT UCL (Chen-1995)	551.3
		95% Modified-t UCL (Johnson-1978)	518.6

Nonparametric Distribution Free UCLs			
95% CLT UCL	496.4	95% Jackknife UCL	510
95% Standard Bootstrap UCL	492.9	95% Bootstrap-t UCL	596.1
95% Hall's Bootstrap UCL	621.3	95% Percentile Bootstrap UCL	497.2
95% BCA Bootstrap UCL	555		
90% Chebyshev(Mean, Sd) UCL	654.8	95% Chebyshev(Mean, Sd) UCL	813.5
97.5% Chebyshev(Mean, Sd) UCL	1034	99% Chebyshev(Mean, Sd) UCL	1467

Suggested UCL to Use	
99% Chebyshev (Mean, Sd) UCL	1467

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics			
Total Number of Observations	15	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	1.19	Mean	7.747
Maximum	50.6	Median	1.28
SD	13.83	Std. Error of Mean	3.57
Coefficient of Variation	1.785	Skewness	2.657
Mean of logged Data	1.101	SD of logged Data	1.265

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.03	95% Adjusted-CLT UCL (Chen-1995)	16.24
		95% Modified-t UCL (Johnson-1978)	14.44

Nonparametric Distribution Free UCLs			
95% CLT UCL	13.62	95% Jackknife UCL	14.03
95% Standard Bootstrap UCL	13.35	95% Bootstrap-t UCL	34.31
95% Hall's Bootstrap UCL	39.81	95% Percentile Bootstrap UCL	13.99
95% BCA Bootstrap UCL	15.78		
90% Chebyshev(Mean, Sd) UCL	18.46	95% Chebyshev(Mean, Sd) UCL	23.31
97.5% Chebyshev(Mean, Sd) UCL	30.04	99% Chebyshev(Mean, Sd) UCL	43.27

Suggested UCL to Use	
95% Chebyshev (Mean, Sd) UCL	23.31

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.23	Mean	146.7
Maximum	738	Median	3.2
SD	216.3	Std. Error of Mean	55.85
Coefficient of Variation	1.474	Skewness	1.646
Mean of logged Data	2.949	SD of logged Data	2.424

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	245.1	95% Adjusted-CLT UCL (Chen-1995)	264
		95% Modified-t UCL (Johnson-1978)	249.1

Nonparametric Distribution Free UCLs

95% CLT UCL	238.6	95% Jackknife UCL	245.1
95% Standard Bootstrap UCL	234.5	95% Bootstrap-t UCL	297.9
95% Hall's Bootstrap UCL	279.3	95% Percentile Bootstrap UCL	243.2
95% BCA Bootstrap UCL	259		
90% Chebyshev(Mean, Sd) UCL	314.3	95% Chebyshev(Mean, Sd) UCL	390.2
97.5% Chebyshev(Mean, Sd) UCL	495.5	99% Chebyshev(Mean, Sd) UCL	702.4

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	702.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	0.89	Mean	14.69
Maximum	103	Median	0.96
SD	28.49	Std. Error of Mean	7.357
Coefficient of Variation	1.94	Skewness	2.603
Mean of logged Data	1.189	SD of logged Data	1.721

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	27.65	95% Adjusted-CLT UCL (Chen-1995)	32.08
		95% Modified-t UCL (Johnson-1978)	28.47

Nonparametric Distribution Free UCLs

95% CLT UCL	26.79	95% Jackknife UCL	27.65
95% Standard Bootstrap UCL	26.05	95% Bootstrap-t UCL	56.08
95% Hall's Bootstrap UCL	72	95% Percentile Bootstrap UCL	27.21
95% BCA Bootstrap UCL	34.46		
90% Chebyshev(Mean, Sd) UCL	36.76	95% Chebyshev(Mean, Sd) UCL	46.76
97.5% Chebyshev(Mean, Sd) UCL	60.64	99% Chebyshev(Mean, Sd) UCL	87.89

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	87.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	2.11	Mean	158.3
Maximum	837	Median	3.24
SD	240.1	Std. Error of Mean	62
Coefficient of Variation	1.517	Skewness	1.822
Mean of logged Data	2.953	SD of logged Data	2.48

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	267.5	95% Adjusted-CLT UCL (Chen-1995)	291.4
		95% Modified-t UCL (Johnson-1978)	272.4

Nonparametric Distribution Free UCLs

95% CLT UCL	260.3	95% Jackknife UCL	267.5
95% Standard Bootstrap UCL	255.9	95% Bootstrap-t UCL	320.9
95% Hall's Bootstrap UCL	335.3	95% Percentile Bootstrap UCL	263.1
95% BCA Bootstrap UCL	296.9		
90% Chebyshev(Mean, Sd) UCL	344.3	95% Chebyshev(Mean, Sd) UCL	428.6
97.5% Chebyshev(Mean, Sd) UCL	545.5	99% Chebyshev(Mean, Sd) UCL	775.2

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	775.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.03	Mean	288
Maximum	1500	Median	4.97
SD	439	Std. Error of Mean	113.4
Coefficient of Variation	1.525	Skewness	1.763
Mean of logged Data	3.394	SD of logged Data	2.609

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	487.6	95% Adjusted-CLT UCL (Chen-1995)	529.6
		95% Modified-t UCL (Johnson-1978)	496.2

Nonparametric Distribution Free UCLs

95% CLT UCL	474.4	95% Jackknife UCL	487.6
95% Standard Bootstrap UCL	467.2	95% Bootstrap-t UCL	635.4
95% Hall's Bootstrap UCL	656.5	95% Percentile Bootstrap UCL	490.4
95% BCA Bootstrap UCL	510.2		
90% Chebyshev(Mean, Sd) UCL	628.1	95% Chebyshev(Mean, Sd) UCL	782.1
97.5% Chebyshev(Mean, Sd) UCL	995.9	99% Chebyshev(Mean, Sd) UCL	1416

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	1416

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTIMONY

General Statistics

Total Number of Observations	14	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	0.074	Mean	0.715
Maximum	1.36	Median	0.71
SD	0.253	Std. Error of Mean	0.0676
Coefficient of Variation	0.354	Skewness	0.0286
Mean of logged Data	-0.452	SD of logged Data	0.643

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.835	95% Adjusted-CLT UCL (Chen-1995)	0.827

		95% Modified-t UCL (Johnson-1978)	0.835

Nonparametric Distribution Free UCLs

95% CLT UCL	0.826	95% Jackknife UCL	0.835
95% Standard Bootstrap UCL	0.822	95% Bootstrap-t UCL	0.821
95% Hall's Bootstrap UCL	0.866	95% Percentile Bootstrap UCL	0.813
95% BCA Bootstrap UCL	0.813		
90% Chebyshev(Mean, Sd) UCL	0.918	95% Chebyshev(Mean, Sd) UCL	1.01
97.5% Chebyshev(Mean, Sd) UCL	1.137	99% Chebyshev(Mean, Sd) UCL	1.388

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	1.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	1.38	Mean	11.86
Maximum	16.6	Median	13
SD	4.328	Std. Error of Mean	1.118
Coefficient of Variation	0.365	Skewness	-1.029
Mean of logged Data	2.352	SD of logged Data	0.628

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.82	95% Adjusted-CLT UCL (Chen-1995)	13.38
		95% Modified-t UCL (Johnson-1978)	13.78

Nonparametric Distribution Free UCLs

95% CLT UCL	13.69	95% Jackknife UCL	13.82
95% Standard Bootstrap UCL	13.65	95% Bootstrap-t UCL	13.65
95% Hall's Bootstrap UCL	13.43	95% Percentile Bootstrap UCL	13.49
95% BCA Bootstrap UCL	13.36		
90% Chebyshev(Mean, Sd) UCL	15.21	95% Chebyshev(Mean, Sd) UCL	16.73
97.5% Chebyshev(Mean, Sd) UCL	18.84	99% Chebyshev(Mean, Sd) UCL	22.98

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

LEAD

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	4.18	Mean	22.54
Maximum	91.2	Median	11.4
SD	25.22	Std. Error of Mean	6.513
Coefficient of Variation	1.119	Skewness	1.92
Mean of logged Data	2.682	SD of logged Data	0.899

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.01	95% Adjusted-CLT UCL (Chen-1995)	36.7
		95% Modified-t UCL (Johnson-1978)	34.55

Nonparametric Distribution Free UCLs

95% CLT UCL	33.25	95% Jackknife UCL	34.01
95% Standard Bootstrap UCL	33.05	95% Bootstrap-t UCL	42.23
95% Hall's Bootstrap UCL	33.65	95% Percentile Bootstrap UCL	32.83
95% BCA Bootstrap UCL	35.81		
90% Chebyshev(Mean, Sd) UCL	42.08	95% Chebyshev(Mean, Sd) UCL	50.93
97.5% Chebyshev(Mean, Sd) UCL	63.21	99% Chebyshev(Mean, Sd) UCL	87.34

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	4.04	Mean	39.52
Maximum	54.1	Median	41.3
SD	12.72	Std. Error of Mean	3.285
Coefficient of Variation	0.322	Skewness	-1.556
Mean of logged Data	3.564	SD of logged Data	0.633

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	

95% Student's-t UCL	45.31	95% Adjusted-CLT UCL (Chen-1995)	43.52
		95% Modified-t UCL (Johnson-1978)	45.09

Nonparametric Distribution Free UCLs

95% CLT UCL	44.93	95% Jackknife UCL	45.31
95% Standard Bootstrap UCL	44.88	95% Bootstrap-t UCL	44.29
95% Hall's Bootstrap UCL	44.09	95% Percentile Bootstrap UCL	44.45
95% BCA Bootstrap UCL	43.6		
90% Chebyshev(Mean, Sd) UCL	49.38	95% Chebyshev(Mean, Sd) UCL	53.84
97.5% Chebyshev(Mean, Sd) UCL	60.04	99% Chebyshev(Mean, Sd) UCL	72.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:24:55 AM
From File	Table 1. Parcel Analytical Results (Kingman APN32437016) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	4.025
Maximum	6.87	Median	3.37
SD	2.025	Std. Error of Mean	0.675
Coefficient of Variation	0.503	Skewness	0.608
Mean of logged Data	1.281	SD of logged Data	0.499

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.28	95% Adjusted-CLT UCL (Chen-1995)	5.281
		95% Modified-t UCL (Johnson-1978)	5.303

Nonparametric Distribution Free UCLs

95% CLT UCL	5.135	95% Jackknife UCL	5.28
95% Standard Bootstrap UCL	5.072	95% Bootstrap-t UCL	5.454
95% Hall's Bootstrap UCL	4.924	95% Percentile Bootstrap UCL	5.084
95% BCA Bootstrap UCL	5.113		
90% Chebyshev(Mean, Sd) UCL	6.05	95% Chebyshev(Mean, Sd) UCL	6.967
97.5% Chebyshev(Mean, Sd) UCL	8.24	99% Chebyshev(Mean, Sd) UCL	10.74

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	2.065	Mean	5.029
Maximum	9.29	Median	4.2
SD	3.026	Std. Error of Mean	1.009
Coefficient of Variation	0.602	Skewness	0.579
Mean of logged Data	1.447	SD of logged Data	0.623

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.905	95% Adjusted-CLT UCL (Chen-1995)	6.897
		95% Modified-t UCL (Johnson-1978)	6.938

Nonparametric Distribution Free UCLs

95% CLT UCL	6.689	95% Jackknife UCL	6.905
95% Standard Bootstrap UCL	6.59	95% Bootstrap-t UCL	7.109
95% Hall's Bootstrap UCL	6.353	95% Percentile Bootstrap UCL	6.601
95% BCA Bootstrap UCL	6.789		
90% Chebyshev(Mean, Sd) UCL	8.056	95% Chebyshev(Mean, Sd) UCL	9.427
97.5% Chebyshev(Mean, Sd) UCL	11.33	99% Chebyshev(Mean, Sd) UCL	15.07

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.175	Mean	6.87
Maximum	12.6	Median	5.8
SD	3.832	Std. Error of Mean	1.277
Coefficient of Variation	0.558	Skewness	0.644
Mean of logged Data	1.788	SD of logged Data	0.56

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	9.245	95% Adjusted-CLT UCL (Chen-1995)	9.264
		95% Modified-t UCL (Johnson-1978)	9.291

Nonparametric Distribution Free UCLs

95% CLT UCL	8.971	95% Jackknife UCL	9.245
95% Standard Bootstrap UCL	8.857	95% Bootstrap-t UCL	9.478
95% Hall's Bootstrap UCL	8.645	95% Percentile Bootstrap UCL	8.946
95% BCA Bootstrap UCL	9.227		
90% Chebyshev(Mean, Sd) UCL	10.7	95% Chebyshev(Mean, Sd) UCL	12.44
97.5% Chebyshev(Mean, Sd) UCL	14.85	99% Chebyshev(Mean, Sd) UCL	19.58

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.8	Mean	4.448
Maximum	7.16	Median	3.3
SD	1.853	Std. Error of Mean	0.618
Coefficient of Variation	0.417	Skewness	0.838
Mean of logged Data	1.422	SD of logged Data	0.387

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.596	95% Adjusted-CLT UCL (Chen-1995)	5.648
		95% Modified-t UCL (Johnson-1978)	5.625

Nonparametric Distribution Free UCLs

95% CLT UCL	5.464	95% Jackknife UCL	5.596
95% Standard Bootstrap UCL	5.394	95% Bootstrap-t UCL	5.802
95% Hall's Bootstrap UCL	5.075	95% Percentile Bootstrap UCL	5.351
95% BCA Bootstrap UCL	5.598		
90% Chebyshev(Mean, Sd) UCL	6.301	95% Chebyshev(Mean, Sd) UCL	7.14
97.5% Chebyshev(Mean, Sd) UCL	8.305	99% Chebyshev(Mean, Sd) UCL	10.59

Suggested UCL to Use

95% Student's-t UCL	5.596	or 95% Modified-t UCL	5.625

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.05	Mean	2.922
Maximum	4.52	Median	2.29
SD	1.124	Std. Error of Mean	0.375
Coefficient of Variation	0.385	Skewness	0.833
Mean of logged Data	1.012	SD of logged Data	0.357

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	3.619	95% Adjusted-CLT UCL (Chen-1995)	3.649
		95% Modified-t UCL (Johnson-1978)	3.636

Nonparametric Distribution Free UCLs

95% CLT UCL	3.538	95% Jackknife UCL	3.619
95% Standard Bootstrap UCL	3.498	95% Bootstrap-t UCL	3.723
95% Hall's Bootstrap UCL	3.289	95% Percentile Bootstrap UCL	3.465
95% BCA Bootstrap UCL	3.531		
90% Chebyshev(Mean, Sd) UCL	4.046	95% Chebyshev(Mean, Sd) UCL	4.555
97.5% Chebyshev(Mean, Sd) UCL	5.262	99% Chebyshev(Mean, Sd) UCL	6.65

Suggested UCL to Use

95% Student's-t UCL	3.619	or 95% Modified-t UCL	3.636

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.065	Mean	5.793
Maximum	11	Median	4.98
SD	3.574	Std. Error of Mean	1.191
Coefficient of Variation	0.617	Skewness	0.464
Mean of logged Data	1.564	SD of logged Data	0.683

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.008	95% Adjusted-CLT UCL (Chen-1995)	7.949
		95% Modified-t UCL (Johnson-1978)	8.039

Nonparametric Distribution Free UCLs

95% CLT UCL	7.753	95% Jackknife UCL	8.008
95% Standard Bootstrap UCL	7.657	95% Bootstrap-t UCL	8.305
95% Hall's Bootstrap UCL	7.777	95% Percentile Bootstrap UCL	7.688
95% BCA Bootstrap UCL	7.909		
90% Chebyshev(Mean, Sd) UCL	9.367	95% Chebyshev(Mean, Sd) UCL	10.99
97.5% Chebyshev(Mean, Sd) UCL	13.23	99% Chebyshev(Mean, Sd) UCL	17.65

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	2.065	Mean	6.564
Maximum	12.2	Median	6.05
SD	4.115	Std. Error of Mean	1.372
Coefficient of Variation	0.627	Skewness	0.309
Mean of logged Data	1.664	SD of logged Data	0.741

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.115	95% Adjusted-CLT UCL (Chen-1995)	8.971
		95% Modified-t UCL (Johnson-1978)	9.138

Nonparametric Distribution Free UCLs

95% CLT UCL	8.82	95% Jackknife UCL	9.115

95% Standard Bootstrap UCL	8.646	95% Bootstrap-t UCL	9.435
95% Hall's Bootstrap UCL	8.543	95% Percentile Bootstrap UCL	8.597
95% BCA Bootstrap UCL	8.841		
90% Chebyshev(Mean, Sd) UCL	10.68	95% Chebyshev(Mean, Sd) UCL	12.54
97.5% Chebyshev(Mean, Sd) UCL	15.13	99% Chebyshev(Mean, Sd) UCL	20.21

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.93	Mean	4.726
Maximum	7.68	Median	3.42
SD	2.084	Std. Error of Mean	0.695
Coefficient of Variation	0.441	Skewness	0.799
Mean of logged Data	1.474	SD of logged Data	0.412

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.018	95% Adjusted-CLT UCL (Chen-1995)	6.066
		95% Modified-t UCL (Johnson-1978)	6.048

Nonparametric Distribution Free UCLs

95% CLT UCL	5.868	95% Jackknife UCL	6.018
95% Standard Bootstrap UCL	5.818	95% Bootstrap-t UCL	6.219
95% Hall's Bootstrap UCL	5.436	95% Percentile Bootstrap UCL	5.728
95% BCA Bootstrap UCL	6.085		
90% Chebyshev(Mean, Sd) UCL	6.81	95% Chebyshev(Mean, Sd) UCL	7.754
97.5% Chebyshev(Mean, Sd) UCL	9.064	99% Chebyshev(Mean, Sd) UCL	11.64

Suggested UCL to Use

95% Student's-t UCL	6.018	or 95% Modified-t UCL	6.048

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.61	Mean	3.702
Maximum	5.47	Median	3.285
SD	1.138	Std. Error of Mean	0.379
Coefficient of Variation	0.307	Skewness	0.823
Mean of logged Data	1.27	SD of logged Data	0.291

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.408	95% Adjusted-CLT UCL (Chen-1995)	4.438
		95% Modified-t UCL (Johnson-1978)	4.425

Nonparametric Distribution Free UCLs

95% CLT UCL	4.326	95% Jackknife UCL	4.408
95% Standard Bootstrap UCL	4.298	95% Bootstrap-t UCL	4.711
95% Hall's Bootstrap UCL	4.297	95% Percentile Bootstrap UCL	4.298
95% BCA Bootstrap UCL	4.345		
90% Chebyshev(Mean, Sd) UCL	4.841	95% Chebyshev(Mean, Sd) UCL	5.356
97.5% Chebyshev(Mean, Sd) UCL	6.072	99% Chebyshev(Mean, Sd) UCL	7.478

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.175	Mean	6.873
Maximum	12.4	Median	5.91
SD	3.711	Std. Error of Mean	1.237
Coefficient of Variation	0.54	Skewness	0.615
Mean of logged Data	1.795	SD of logged Data	0.549

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	9.174	95% Adjusted-CLT UCL (Chen-1995)	9.179
		95% Modified-t UCL (Johnson-1978)	9.216

Nonparametric Distribution Free UCLs

95% CLT UCL	8.908	95% Jackknife UCL	9.174
95% Standard Bootstrap UCL	8.762	95% Bootstrap-t UCL	9.541
95% Hall's Bootstrap UCL	9.042	95% Percentile Bootstrap UCL	8.853
95% BCA Bootstrap UCL	8.944		
90% Chebyshev(Mean, Sd) UCL	10.58	95% Chebyshev(Mean, Sd) UCL	12.27
97.5% Chebyshev(Mean, Sd) UCL	14.6	99% Chebyshev(Mean, Sd) UCL	19.18

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	13.5	Mean	16.76
Maximum	22.3	Median	15.5
SD	2.788	Std. Error of Mean	0.929
Coefficient of Variation	0.166	Skewness	1.097
Mean of logged Data	2.807	SD of logged Data	0.158

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.48	95% Adjusted-CLT UCL (Chen-1995)	18.65
		95% Modified-t UCL (Johnson-1978)	18.54

Nonparametric Distribution Free UCLs

95% CLT UCL	18.28	95% Jackknife UCL	18.48
95% Standard Bootstrap UCL	18.16	95% Bootstrap-t UCL	19.38
95% Hall's Bootstrap UCL	18.89	95% Percentile Bootstrap UCL	18.26
95% BCA Bootstrap UCL	18.52		
90% Chebyshev(Mean, Sd) UCL	19.54	95% Chebyshev(Mean, Sd) UCL	20.81
97.5% Chebyshev(Mean, Sd) UCL	22.56	99% Chebyshev(Mean, Sd) UCL	26

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.72	Mean	11.17
Maximum	12.7	Median	11
SD	0.922	Std. Error of Mean	0.307
Coefficient of Variation	0.0826	Skewness	0.281
Mean of logged Data	2.41	SD of logged Data	0.0823

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	11.74	95% Adjusted-CLT UCL (Chen-1995)	11.71
		95% Modified-t UCL (Johnson-1978)	11.75

Nonparametric Distribution Free UCLs

95% CLT UCL	11.67	95% Jackknife UCL	11.74
95% Standard Bootstrap UCL	11.65	95% Bootstrap-t UCL	11.84
95% Hall's Bootstrap UCL	11.93	95% Percentile Bootstrap UCL	11.61
95% BCA Bootstrap UCL	11.66		
90% Chebyshev(Mean, Sd) UCL	12.09	95% Chebyshev(Mean, Sd) UCL	12.51
97.5% Chebyshev(Mean, Sd) UCL	13.09	99% Chebyshev(Mean, Sd) UCL	14.23

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	44.9	Mean	48.47
Maximum	52	Median	48.6
SD	2.355	Std. Error of Mean	0.785
Coefficient of Variation	0.0486	Skewness	-0.0423
Mean of logged Data	3.88	SD of logged Data	0.0487

Note: Sample size is small (e.g., <10), if data are collected using ISM approach you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	49.93	95% Adjusted-CLT UCL (Chen-1995)	49.75
		95% Modified-t UCL (Johnson-1978)	49.92

Nonparametric Distribution Free UCLs

95% CLT UCL	49.76	95% Jackknife UCL	49.93
95% Standard Bootstrap UCL	49.66	95% Bootstrap-t UCL	49.97
95% Hall's Bootstrap UCL	49.81	95% Percentile Bootstrap UCL	49.71
95% BCA Bootstrap UCL	49.7		
90% Chebyshev(Mean, Sd) UCL	50.82	95% Chebyshev(Mean, Sd) UCL	51.89
97.5% Chebyshev(Mean, Sd) UCL	53.37	99% Chebyshev(Mean, Sd) UCL	56.28

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.16/12/2020 9:28:44 AM
From File	Table 1. Parcel Analytical Results APN32439031-HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Copper

General Statistics

Total Number of Observations	15	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	13.1	Mean	15.05
Maximum	16.8	Median	15
SD	0.987	Std. Error of Mean	0.255
Coefficient of Variation	0.0656	Skewness	-0.211
Mean of logged Data	2.71	SD of logged Data	0.0663

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	15.5	95% Adjusted-CLT UCL (Chen-1995)	15.46
		95% Modified-t UCL (Johnson-1978)	15.5

Nonparametric Distribution Free UCLs

95% CLT UCL	15.47	95% Jackknife UCL	15.5
95% Standard Bootstrap UCL	15.46	95% Bootstrap-t UCL	15.5
95% Hall's Bootstrap UCL	15.48	95% Percentile Bootstrap UCL	15.47
95% BCA Bootstrap UCL	15.41		
90% Chebyshev(Mean, Sd) UCL	15.82	95% Chebyshev(Mean, Sd) UCL	16.16
97.5% Chebyshev(Mean, Sd) UCL	16.64	99% Chebyshev(Mean, Sd) UCL	17.59

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

Lead

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	10.2	Mean	16.77

Maximum	42.4	Median	14.7
SD	7.654	Std. Error of Mean	1.976
Coefficient of Variation	0.456	Skewness	3.02
Mean of logged Data	2.757	SD of logged Data	0.331

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	20.25	95% Adjusted-CLT UCL (Chen-1995)	21.66
		95% Modified-t UCL (Johnson-1978)	20.5

Nonparametric Distribution Free UCLs

95% CLT UCL	20.02	95% Jackknife UCL	20.25
95% Standard Bootstrap UCL	19.95	95% Bootstrap-t UCL	26.4
95% Hall's Bootstrap UCL	35.44	95% Percentile Bootstrap UCL	20.37
95% BCA Bootstrap UCL	22.44		
90% Chebyshev(Mean, Sd) UCL	22.7	95% Chebyshev(Mean, Sd) UCL	25.38
97.5% Chebyshev(Mean, Sd) UCL	29.11	99% Chebyshev(Mean, Sd) UCL	36.43

Suggested UCL to Use

95% Student's-t UCL	20.25	or 95% Modified-t UCL	20.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	44.3	Mean	50.16
Maximum	55.7	Median	49.9
SD	3.246	Std. Error of Mean	0.838
Coefficient of Variation	0.0647	Skewness	0.222
Mean of logged Data	3.913	SD of logged Data	0.0645

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	51.64	95% Adjusted-CLT UCL (Chen-1995)	51.59
		95% Modified-t UCL (Johnson-1978)	51.64

Nonparametric Distribution Free UCLs

95% CLT UCL	51.54	95% Jackknife UCL	51.64
95% Standard Bootstrap UCL	51.53	95% Bootstrap-t UCL	51.75
95% Hall's Bootstrap UCL	51.55	95% Percentile Bootstrap UCL	51.55
95% BCA Bootstrap UCL	51.6		
90% Chebyshev(Mean, Sd) UCL	52.67	95% Chebyshev(Mean, Sd) UCL	53.81

97.5% Chebyshev(Mean, Sd) UCL	55.39	99% Chebyshev(Mean, Sd) UCL	58.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-Methylnaphthalene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.915	Mean	23.29
Maximum	74.1	Median	14.4
SD	21.3	Std. Error of Mean	5.5
Coefficient of Variation	0.914	Skewness	1.163
Mean of logged Data	2.595	SD of logged Data	1.304

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	32.98	95% Adjusted-CLT UCL (Chen-1995)	34.1
		95% Modified-t UCL (Johnson-1978)	33.25

Nonparametric Distribution Free UCLs

95% CLT UCL	32.34	95% Jackknife UCL	32.98
95% Standard Bootstrap UCL	31.98	95% Bootstrap-t UCL	36.07
95% Hall's Bootstrap UCL	35.73	95% Percentile Bootstrap UCL	32.27
95% BCA Bootstrap UCL	34.04		
90% Chebyshev(Mean, Sd) UCL	39.79	95% Chebyshev(Mean, Sd) UCL	47.27
97.5% Chebyshev(Mean, Sd) UCL	57.64	99% Chebyshev(Mean, Sd) UCL	78.01

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Acenaphthene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.509	Mean	70.49
Maximum	216	Median	42.1
SD	64.2	Std. Error of Mean	16.58

Coefficient of Variation	0.911	Skewness	1.117
Mean of logged Data	3.524	SD of logged Data	1.775

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	99.69	95% Adjusted-CLT UCL (Chen-1995)	102.9
		95% Modified-t UCL (Johnson-1978)	100.5

Nonparametric Distribution Free UCLs

95% CLT UCL	97.76	95% Jackknife UCL	99.69
95% Standard Bootstrap UCL	97.54	95% Bootstrap-t UCL	107.4
95% Hall's Bootstrap UCL	99.95	95% Percentile Bootstrap UCL	99.06
95% BCA Bootstrap UCL	104.7		
90% Chebyshev(Mean, Sd) UCL	120.2	95% Chebyshev(Mean, Sd) UCL	142.7
97.5% Chebyshev(Mean, Sd) UCL	174	99% Chebyshev(Mean, Sd) UCL	235.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Anthracene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.68	Mean	202.4
Maximum	595	Median	135
SD	182.3	Std. Error of Mean	47.06
Coefficient of Variation	0.9	Skewness	1.142
Mean of logged Data	4.643	SD of logged Data	1.645

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	285.3	95% Adjusted-CLT UCL (Chen-1995)	294.7
		95% Modified-t UCL (Johnson-1978)	287.6

Nonparametric Distribution Free UCLs

95% CLT UCL	279.8	95% Jackknife UCL	285.3
95% Standard Bootstrap UCL	276.5	95% Bootstrap-t UCL	308.8
95% Hall's Bootstrap UCL	301.3	95% Percentile Bootstrap UCL	280.4
95% BCA Bootstrap UCL	296.5		
90% Chebyshev(Mean, Sd) UCL	343.6	95% Chebyshev(Mean, Sd) UCL	407.6
97.5% Chebyshev(Mean, Sd) UCL	496.3	99% Chebyshev(Mean, Sd) UCL	670.7

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(a)anthracene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	8.33	Mean	1146
Maximum	3150	Median	844
SD	981	Std. Error of Mean	253.3
Coefficient of Variation	0.856	Skewness	1.001
Mean of logged Data	6.348	SD of logged Data	1.747

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1592	95% Adjusted-CLT UCL (Chen-1995)	1633
		95% Modified-t UCL (Johnson-1978)	1603

Nonparametric Distribution Free UCLs

95% CLT UCL	1563	95% Jackknife UCL	1592
95% Standard Bootstrap UCL	1547	95% Bootstrap-t UCL	1717
95% Hall's Bootstrap UCL	1645	95% Percentile Bootstrap UCL	1558
95% BCA Bootstrap UCL	1617		
90% Chebyshev(Mean, Sd) UCL	1906	95% Chebyshev(Mean, Sd) UCL	2250
97.5% Chebyshev(Mean, Sd) UCL	2728	99% Chebyshev(Mean, Sd) UCL	3666

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(a)pyrene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	11.9	Mean	1392
Maximum	4100	Median	1040
SD	1302	Std. Error of Mean	336.2
Coefficient of Variation	0.935	Skewness	1.272
Mean of logged Data	6.532	SD of logged Data	1.702

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1984	95% Adjusted-CLT UCL (Chen-1995)	2063
		95% Modified-t UCL (Johnson-1978)	2003

Nonparametric Distribution Free UCLs

95% CLT UCL	1945	95% Jackknife UCL	1984
95% Standard Bootstrap UCL	1932	95% Bootstrap-t UCL	2346
95% Hall's Bootstrap UCL	2130	95% Percentile Bootstrap UCL	1980
95% BCA Bootstrap UCL	2068		
90% Chebyshev(Mean, Sd) UCL	2401	95% Chebyshev(Mean, Sd) UCL	2858
97.5% Chebyshev(Mean, Sd) UCL	3492	99% Chebyshev(Mean, Sd) UCL	4738

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(b)fluoranthene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	14.5	Mean	1804
Maximum	5560	Median	1300
SD	1705	Std. Error of Mean	440.3
Coefficient of Variation	0.945	Skewness	1.367
Mean of logged Data	6.787	SD of logged Data	1.717

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2580	95% Adjusted-CLT UCL (Chen-1995)	2695
		95% Modified-t UCL (Johnson-1978)	2606

Nonparametric Distribution Free UCLs

95% CLT UCL	2529	95% Jackknife UCL	2580
95% Standard Bootstrap UCL	2531	95% Bootstrap-t UCL	2877
95% Hall's Bootstrap UCL	2968	95% Percentile Bootstrap UCL	2546
95% BCA Bootstrap UCL	2728		
90% Chebyshev(Mean, Sd) UCL	3125	95% Chebyshev(Mean, Sd) UCL	3724
97.5% Chebyshev(Mean, Sd) UCL	4554	99% Chebyshev(Mean, Sd) UCL	6185

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(g,h,i)perylene

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
		Number of Missing Observations	1
Minimum	12.5	Mean	999.5
Maximum	2950	Median	672
SD	896.5	Std. Error of Mean	239.6
Coefficient of Variation	0.897	Skewness	1.425
Mean of logged Data	6.42	SD of logged Data	1.32

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1424	95% Adjusted-CLT UCL (Chen-1995)	1491
		95% Modified-t UCL (Johnson-1978)	1439

Nonparametric Distribution Free UCLs

95% CLT UCL	1394	95% Jackknife UCL	1424
95% Standard Bootstrap UCL	1382	95% Bootstrap-t UCL	1658
95% Hall's Bootstrap UCL	1648	95% Percentile Bootstrap UCL	1372
95% BCA Bootstrap UCL	1487		
90% Chebyshev(Mean, Sd) UCL	1718	95% Chebyshev(Mean, Sd) UCL	2044
97.5% Chebyshev(Mean, Sd) UCL	2496	99% Chebyshev(Mean, Sd) UCL	3383

Suggested UCL to Use
Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(k)fluoranthene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	6.31	Mean	733.6
Maximum	2180	Median	553
SD	676	Std. Error of Mean	174.5
Coefficient of Variation	0.921	Skewness	1.281
Mean of logged Data	5.901	SD of logged Data	1.707

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1041	95% Adjusted-CLT UCL (Chen-1995)	1082
		95% Modified-t UCL (Johnson-1978)	1051

Nonparametric Distribution Free UCLs

95% CLT UCL	1021	95% Jackknife UCL	1041
95% Standard Bootstrap UCL	1010	95% Bootstrap-t UCL	1167
95% Hall's Bootstrap UCL	1137	95% Percentile Bootstrap UCL	1029
95% BCA Bootstrap UCL	1080		
90% Chebyshev(Mean, Sd) UCL	1257	95% Chebyshev(Mean, Sd) UCL	1494
97.5% Chebyshev(Mean, Sd) UCL	1824	99% Chebyshev(Mean, Sd) UCL	2470

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Chrysene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	11.6	Mean	1566
Maximum	4380	Median	1210
SD	1368	Std. Error of Mean	353.2
Coefficient of Variation	0.873	Skewness	1.096
Mean of logged Data	6.657	SD of logged Data	1.751

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2188	95% Adjusted-CLT UCL (Chen-1995)	2254
		95% Modified-t UCL (Johnson-1978)	2205

Nonparametric Distribution Free UCLs

95% CLT UCL	2147	95% Jackknife UCL	2188
95% Standard Bootstrap UCL	2117	95% Bootstrap-t UCL	2404
95% Hall's Bootstrap UCL	2317	95% Percentile Bootstrap UCL	2116
95% BCA Bootstrap UCL	2302		
90% Chebyshev(Mean, Sd) UCL	2626	95% Chebyshev(Mean, Sd) UCL	3106
97.5% Chebyshev(Mean, Sd) UCL	3772	99% Chebyshev(Mean, Sd) UCL	5081

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Dibenz(a,h)anthracene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	3.045	Mean	240.7
Maximum	658	Median	189
SD	196.4	Std. Error of Mean	50.72
Coefficient of Variation	0.816	Skewness	1.166
Mean of logged Data	4.886	SD of logged Data	1.591

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	330	95% Adjusted-CLT UCL (Chen-1995)	340.4
		95% Modified-t UCL (Johnson-1978)	332.6

Nonparametric Distribution Free UCLs

95% CLT UCL	324.1	95% Jackknife UCL	330
95% Standard Bootstrap UCL	323.3	95% Bootstrap-t UCL	359.8
95% Hall's Bootstrap UCL	385	95% Percentile Bootstrap UCL	322.3
95% BCA Bootstrap UCL	335.1		
90% Chebyshev(Mean, Sd) UCL	392.8	95% Chebyshev(Mean, Sd) UCL	461.8
97.5% Chebyshev(Mean, Sd) UCL	557.4	99% Chebyshev(Mean, Sd) UCL	745.3

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Fluoranthene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	13	Mean	2029
Maximum	5610	Median	1480
SD	1790	Std. Error of Mean	462.2
Coefficient of Variation	0.882	Skewness	1.031
Mean of logged Data	6.888	SD of logged Data	1.794

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	2843	95% Adjusted-CLT UCL (Chen-1995)	2921
		95% Modified-t UCL (Johnson-1978)	2863

Nonparametric Distribution Free UCLs

95% CLT UCL	2789	95% Jackknife UCL	2843
95% Standard Bootstrap UCL	2752	95% Bootstrap-t UCL	3054
95% Hall's Bootstrap UCL	2863	95% Percentile Bootstrap UCL	2786
95% BCA Bootstrap UCL	2894		
90% Chebyshev(Mean, Sd) UCL	3415	95% Chebyshev(Mean, Sd) UCL	4044
97.5% Chebyshev(Mean, Sd) UCL	4915	99% Chebyshev(Mean, Sd) UCL	6628

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Fluorene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	1.215	Mean	30.59
Maximum	88.6	Median	19.6
SD	29.84	Std. Error of Mean	7.704
Coefficient of Variation	0.975	Skewness	1.316
Mean of logged Data	2.872	SD of logged Data	1.277

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	44.16	95% Adjusted-CLT UCL (Chen-1995)	46.06
		95% Modified-t UCL (Johnson-1978)	44.6

Nonparametric Distribution Free UCLs

95% CLT UCL	43.27	95% Jackknife UCL	44.16
95% Standard Bootstrap UCL	42.54	95% Bootstrap-t UCL	48.59
95% Hall's Bootstrap UCL	42.09	95% Percentile Bootstrap UCL	44.14
95% BCA Bootstrap UCL	44.99		
90% Chebyshev(Mean, Sd) UCL	53.71	95% Chebyshev(Mean, Sd) UCL	64.17
97.5% Chebyshev(Mean, Sd) UCL	78.71	99% Chebyshev(Mean, Sd) UCL	107.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Indeno(1,2,3-c,d)pyrene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	9.38	Mean	1014
Maximum	2980	Median	732
SD	920.3	Std. Error of Mean	237.6
Coefficient of Variation	0.907	Skewness	1.255
Mean of logged Data	6.242	SD of logged Data	1.681

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1433	95% Adjusted-CLT UCL (Chen-1995)	1488
		95% Modified-t UCL (Johnson-1978)	1446

Nonparametric Distribution Free UCLs

95% CLT UCL	1405	95% Jackknife UCL	1433
95% Standard Bootstrap UCL	1400	95% Bootstrap-t UCL	1579
95% Hall's Bootstrap UCL	1578	95% Percentile Bootstrap UCL	1401
95% BCA Bootstrap UCL	1460		
90% Chebyshev(Mean, Sd) UCL	1727	95% Chebyshev(Mean, Sd) UCL	2050
97.5% Chebyshev(Mean, Sd) UCL	2498	99% Chebyshev(Mean, Sd) UCL	3379

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Naphthalene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	0.931	Mean	76.46
Maximum	262	Median	41.3
SD	76.21	Std. Error of Mean	19.68
Coefficient of Variation	0.997	Skewness	1.279
Mean of logged Data	3.564	SD of logged Data	1.693

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	

95% Student's-t UCL	111.1	95% Adjusted-CLT UCL (Chen-1995)	115.8
		95% Modified-t UCL (Johnson-1978)	112.2

Nonparametric Distribution Free UCLs

95% CLT UCL	108.8	95% Jackknife UCL	111.1
95% Standard Bootstrap UCL	108.4	95% Bootstrap-t UCL	126.7
95% Hall's Bootstrap UCL	125.7	95% Percentile Bootstrap UCL	109.3
95% BCA Bootstrap UCL	116.8		
90% Chebyshev(Mean, Sd) UCL	135.5	95% Chebyshev(Mean, Sd) UCL	162.2
97.5% Chebyshev(Mean, Sd) UCL	199.3	99% Chebyshev(Mean, Sd) UCL	272.2

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Phenanthrene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
		Number of Missing Observations	0
Minimum	5.51	Mean	972.6
Maximum	2780	Median	632
SD	914.3	Std. Error of Mean	236.1
Coefficient of Variation	0.94	Skewness	1.113
Mean of logged Data	6.111	SD of logged Data	1.832

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1388	95% Adjusted-CLT UCL (Chen-1995)	1433
		95% Modified-t UCL (Johnson-1978)	1400

Nonparametric Distribution Free UCLs

95% CLT UCL	1361	95% Jackknife UCL	1388
95% Standard Bootstrap UCL	1345	95% Bootstrap-t UCL	1560
95% Hall's Bootstrap UCL	1351	95% Percentile Bootstrap UCL	1356
95% BCA Bootstrap UCL	1402		
90% Chebyshev(Mean, Sd) UCL	1681	95% Chebyshev(Mean, Sd) UCL	2002
97.5% Chebyshev(Mean, Sd) UCL	2447	99% Chebyshev(Mean, Sd) UCL	3321

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Pyrene

General Statistics

Total Number of Observations	15	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	14	Mean	2059
Maximum	5320	Median	1560
SD	1734	Std. Error of Mean	447.8
Coefficient of Variation	0.842	Skewness	0.915
Mean of logged Data	6.93	SD of logged Data	1.771

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2847	95% Adjusted-CLT UCL (Chen-1995)	2908
		95% Modified-t UCL (Johnson-1978)	2865

Nonparametric Distribution Free UCLs

95% CLT UCL	2795	95% Jackknife UCL	2847
95% Standard Bootstrap UCL	2770	95% Bootstrap-t UCL	3048
95% Hall's Bootstrap UCL	2875	95% Percentile Bootstrap UCL	2774
95% BCA Bootstrap UCL	2900		
90% Chebyshev(Mean, Sd) UCL	3402	95% Chebyshev(Mean, Sd) UCL	4010
97.5% Chebyshev(Mean, Sd) UCL	4855	99% Chebyshev(Mean, Sd) UCL	6514

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:55:52 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32439036) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.16	Mean	4.504
Maximum	7.94	Median	3.95
SD	2.208	Std. Error of Mean	0.736
Coefficient of Variation	0.49	Skewness	0.632
Mean of logged Data	1.399	SD of logged Data	0.488

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.873	95% Adjusted-CLT UCL (Chen-1995)	5.881
		95% Modified-t UCL (Johnson-1978)	5.899

Nonparametric Distribution Free UCLs

95% CLT UCL	5.715	95% Jackknife UCL	5.873
95% Standard Bootstrap UCL	5.643	95% Bootstrap-t UCL	6.042
95% Hall's Bootstrap UCL	5.53	95% Percentile Bootstrap UCL	5.677
95% BCA Bootstrap UCL	5.733		
90% Chebyshev(Mean, Sd) UCL	6.712	95% Chebyshev(Mean, Sd) UCL	7.713
97.5% Chebyshev(Mean, Sd) UCL	9.101	99% Chebyshev(Mean, Sd) UCL	11.83

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	3.11	Mean	12.41
Maximum	26	Median	8.08
SD	8.591	Std. Error of Mean	2.864
Coefficient of Variation	0.692	Skewness	0.593
Mean of logged Data	2.28	SD of logged Data	0.759

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.74	95% Adjusted-CLT UCL (Chen-1995)	17.73
		95% Modified-t UCL (Johnson-1978)	17.83

Nonparametric Distribution Free UCLs

95% CLT UCL	17.12	95% Jackknife UCL	17.74
95% Standard Bootstrap UCL	16.93	95% Bootstrap-t UCL	18.6
95% Hall's Bootstrap UCL	16.33	95% Percentile Bootstrap UCL	16.92
95% BCA Bootstrap UCL	17.29		
90% Chebyshev(Mean, Sd) UCL	21	95% Chebyshev(Mean, Sd) UCL	24.9
97.5% Chebyshev(Mean, Sd) UCL	30.3	99% Chebyshev(Mean, Sd) UCL	40.91

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.11	Mean	39.29
Maximum	159	Median	25.1
SD	47.68	Std. Error of Mean	15.89
Coefficient of Variation	1.214	Skewness	2.411
Mean of logged Data	3.212	SD of logged Data	0.952

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	68.84	95% Adjusted-CLT UCL (Chen-1995)	79.08
		95% Modified-t UCL (Johnson-1978)	70.97

Nonparametric Distribution Free UCLs

95% CLT UCL	65.43	95% Jackknife UCL	68.84
95% Standard Bootstrap UCL	63.78	95% Bootstrap-t UCL	129.1
95% Hall's Bootstrap UCL	173.3	95% Percentile Bootstrap UCL	66.92
95% BCA Bootstrap UCL	77.72		
90% Chebyshev(Mean, Sd) UCL	86.97	95% Chebyshev(Mean, Sd) UCL	108.6
97.5% Chebyshev(Mean, Sd) UCL	138.5	99% Chebyshev(Mean, Sd) UCL	197.4

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	76.7	Mean	238.5
Maximum	738	Median	196
SD	206.8	Std. Error of Mean	68.95
Coefficient of Variation	0.867	Skewness	2.056
Mean of logged Data	5.212	SD of logged Data	0.74

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	366.7	95% Adjusted-CLT UCL (Chen-1995)	402.4
		95% Modified-t UCL (Johnson-1978)	374.6

Nonparametric Distribution Free UCLs

95% CLT UCL	351.9	95% Jackknife UCL	366.7
95% Standard Bootstrap UCL	342.8	95% Bootstrap-t UCL	493.1
95% Hall's Bootstrap UCL	816.7	95% Percentile Bootstrap UCL	353.4
95% BCA Bootstrap UCL	400.9		
90% Chebyshev(Mean, Sd) UCL	445.4	95% Chebyshev(Mean, Sd) UCL	539.1
97.5% Chebyshev(Mean, Sd) UCL	669.1	99% Chebyshev(Mean, Sd) UCL	924.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	82.6	Mean	266.7
Maximum	820	Median	181
SD	236.8	Std. Error of Mean	78.92
Coefficient of Variation	0.888	Skewness	1.887
Mean of logged Data	5.303	SD of logged Data	0.769

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	413.4	95% Adjusted-CLT UCL (Chen-1995)	449.5
		95% Modified-t UCL (Johnson-1978)	421.7

Nonparametric Distribution Free UCLs

95% CLT UCL	396.5	95% Jackknife UCL	413.4
95% Standard Bootstrap UCL	393.3	95% Bootstrap-t UCL	585.5
95% Hall's Bootstrap UCL	955.2	95% Percentile Bootstrap UCL	404
95% BCA Bootstrap UCL	446.4		
90% Chebyshev(Mean, Sd) UCL	503.4	95% Chebyshev(Mean, Sd) UCL	610.7
97.5% Chebyshev(Mean, Sd) UCL	759.5	99% Chebyshev(Mean, Sd) UCL	1052

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	111	Mean	341.8
Maximum	1050	Median	246
SD	298.7	Std. Error of Mean	99.56
Coefficient of Variation	0.874	Skewness	1.96
Mean of logged Data	5.565	SD of logged Data	0.747

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	526.9	95% Adjusted-CLT UCL (Chen-1995)	575
		95% Modified-t UCL (Johnson-1978)	537.7

Nonparametric Distribution Free UCLs

95% CLT UCL	505.5	95% Jackknife UCL	526.9
95% Standard Bootstrap UCL	498.7	95% Bootstrap-t UCL	745.5
95% Hall's Bootstrap UCL	1172	95% Percentile Bootstrap UCL	507.6
95% BCA Bootstrap UCL	575.8		
90% Chebyshev(Mean, Sd) UCL	640.4	95% Chebyshev(Mean, Sd) UCL	775.7
97.5% Chebyshev(Mean, Sd) UCL	963.5	99% Chebyshev(Mean, Sd) UCL	1332

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	48.9	Mean	171.5
Maximum	568	Median	116
SD	165.5	Std. Error of Mean	55.18
Coefficient of Variation	0.965	Skewness	2.077
Mean of logged Data	4.833	SD of logged Data	0.792

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	274.1	95% Adjusted-CLT UCL (Chen-1995)	303.1
		95% Modified-t UCL (Johnson-1978)	280.5

Nonparametric Distribution Free UCLs

95% CLT UCL	262.2	95% Jackknife UCL	274.1

95% Standard Bootstrap UCL	256.7	95% Bootstrap-t UCL	461.8
95% Hall's Bootstrap UCL	678.7	95% Percentile Bootstrap UCL	264.5
95% BCA Bootstrap UCL	306.8		
90% Chebyshev(Mean, Sd) UCL	337	95% Chebyshev(Mean, Sd) UCL	412
97.5% Chebyshev(Mean, Sd) UCL	516.1	99% Chebyshev(Mean, Sd) UCL	720.5

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	43.6	Mean	137.2
Maximum	408	Median	101
SD	116.6	Std. Error of Mean	38.88
Coefficient of Variation	0.85	Skewness	1.825
Mean of logged Data	4.656	SD of logged Data	0.751

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	209.5	95% Adjusted-CLT UCL (Chen-1995)	226.4
		95% Modified-t UCL (Johnson-1978)	213.4

Nonparametric Distribution Free UCLs

95% CLT UCL	201.2	95% Jackknife UCL	209.5
95% Standard Bootstrap UCL	196.5	95% Bootstrap-t UCL	279.2
95% Hall's Bootstrap UCL	478.4	95% Percentile Bootstrap UCL	199.9
95% BCA Bootstrap UCL	227		
90% Chebyshev(Mean, Sd) UCL	253.8	95% Chebyshev(Mean, Sd) UCL	306.7
97.5% Chebyshev(Mean, Sd) UCL	380	99% Chebyshev(Mean, Sd) UCL	524

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	108	Mean	314.4
Maximum	870	Median	254
SD	243.4	Std. Error of Mean	81.13
Coefficient of Variation	0.774	Skewness	1.69
Mean of logged Data	5.52	SD of logged Data	0.708

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	465.3	95% Adjusted-CLT UCL (Chen-1995)	496.7
		95% Modified-t UCL (Johnson-1978)	472.9

Nonparametric Distribution Free UCLs

95% CLT UCL	447.9	95% Jackknife UCL	465.3
95% Standard Bootstrap UCL	440.7	95% Bootstrap-t UCL	587.8
95% Hall's Bootstrap UCL	1094	95% Percentile Bootstrap UCL	450.9
95% BCA Bootstrap UCL	502.2		
90% Chebyshev(Mean, Sd) UCL	557.8	95% Chebyshev(Mean, Sd) UCL	668.1
97.5% Chebyshev(Mean, Sd) UCL	821.1	99% Chebyshev(Mean, Sd) UCL	1122

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	14.2	Mean	41.07
Maximum	103	Median	32.5
SD	29.94	Std. Error of Mean	9.981
Coefficient of Variation	0.729	Skewness	1.343
Mean of logged Data	3.501	SD of logged Data	0.684

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.63	95% Adjusted-CLT UCL (Chen-1995)	62.26
		95% Modified-t UCL (Johnson-1978)	60.37

Nonparametric Distribution Free UCLs

95% CLT UCL	57.48	95% Jackknife UCL	59.63
95% Standard Bootstrap UCL	56.64	95% Bootstrap-t UCL	76.53
95% Hall's Bootstrap UCL	132.7	95% Percentile Bootstrap UCL	57.89
95% BCA Bootstrap UCL	59.08		
90% Chebyshev(Mean, Sd) UCL	71.01	95% Chebyshev(Mean, Sd) UCL	84.57
97.5% Chebyshev(Mean, Sd) UCL	103.4	99% Chebyshev(Mean, Sd) UCL	140.4

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	113	Mean	415.4
Maximum	1590	Median	295
SD	464.1	Std. Error of Mean	154.7
Coefficient of Variation	1.117	Skewness	2.462
Mean of logged Data	5.652	SD of logged Data	0.859

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	703.1	95% Adjusted-CLT UCL (Chen-1995)	805.6
		95% Modified-t UCL (Johnson-1978)	724.3

Nonparametric Distribution Free UCLs

95% CLT UCL	669.9	95% Jackknife UCL	703.1
95% Standard Bootstrap UCL	660.3	95% Bootstrap-t UCL	1168
95% Hall's Bootstrap UCL	1626	95% Percentile Bootstrap UCL	693.2
95% BCA Bootstrap UCL	790		
90% Chebyshev(Mean, Sd) UCL	879.6	95% Chebyshev(Mean, Sd) UCL	1090
97.5% Chebyshev(Mean, Sd) UCL	1382	99% Chebyshev(Mean, Sd) UCL	1955

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.77	Mean	6.34
Maximum	14.9	Median	3.76
SD	4.825	Std. Error of Mean	1.608
Coefficient of Variation	0.761	Skewness	0.843
Mean of logged Data	1.575	SD of logged Data	0.794

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	9.331	95% Adjusted-CLT UCL (Chen-1995)	9.469
		95% Modified-t UCL (Johnson-1978)	9.406

Nonparametric Distribution Free UCLs

95% CLT UCL	8.986	95% Jackknife UCL	9.331
95% Standard Bootstrap UCL	8.837	95% Bootstrap-t UCL	10.42
95% Hall's Bootstrap UCL	8.923	95% Percentile Bootstrap UCL	8.892
95% BCA Bootstrap UCL	9.157		
90% Chebyshev(Mean, Sd) UCL	11.17	95% Chebyshev(Mean, Sd) UCL	13.35
97.5% Chebyshev(Mean, Sd) UCL	16.38	99% Chebyshev(Mean, Sd) UCL	22.34

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	51.9	Mean	179.3
Maximum	626	Median	122
SD	181.5	Std. Error of Mean	60.49
Coefficient of Variation	1.012	Skewness	2.258
Mean of logged Data	4.864	SD of logged Data	0.8

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	291.8	95% Adjusted-CLT UCL (Chen-1995)	327.4
		95% Modified-t UCL (Johnson-1978)	299.4

Nonparametric Distribution Free UCLs

95% CLT UCL	278.8	95% Jackknife UCL	291.8
95% Standard Bootstrap UCL	275.7	95% Bootstrap-t UCL	523.3
95% Hall's Bootstrap UCL	703.8	95% Percentile Bootstrap UCL	283.4
95% BCA Bootstrap UCL	324.7		
90% Chebyshev(Mean, Sd) UCL	360.8	95% Chebyshev(Mean, Sd) UCL	443
97.5% Chebyshev(Mean, Sd) UCL	557.1	99% Chebyshev(Mean, Sd) UCL	781.2

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.99	Mean	10.6
Maximum	24.6	Median	8.25
SD	8.469	Std. Error of Mean	2.823
Coefficient of Variation	0.799	Skewness	1.021
Mean of logged Data	2.018	SD of logged Data	0.979

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	**95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	15.85	95% Adjusted-CLT UCL (Chen-1995)	16.27
		95% Modified-t UCL (Johnson-1978)	16.01

Nonparametric Distribution Free UCLs

95% CLT UCL	15.24	95% Jackknife UCL	15.85
95% Standard Bootstrap UCL	15.07	95% Bootstrap-t UCL	20.48
95% Hall's Bootstrap UCL	24.6	95% Percentile Bootstrap UCL	15.01
95% BCA Bootstrap UCL	16.1		
90% Chebyshev(Mean, Sd) UCL	19.07	95% Chebyshev(Mean, Sd) UCL	22.91
97.5% Chebyshev(Mean, Sd) UCL	28.23	99% Chebyshev(Mean, Sd) UCL	38.69

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	50.3	Mean	201
Maximum	802	Median	135
SD	237.1	Std. Error of Mean	79.02
Coefficient of Variation	1.179	Skewness	2.486
Mean of logged Data	4.887	SD of logged Data	0.897

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	348	95% Adjusted-CLT UCL (Chen-1995)	400.9
		95% Modified-t UCL (Johnson-1978)	358.9

Nonparametric Distribution Free UCLs

95% CLT UCL	331	95% Jackknife UCL	348
95% Standard Bootstrap UCL	321.2	95% Bootstrap-t UCL	611.6
95% Hall's Bootstrap UCL	823.4	95% Percentile Bootstrap UCL	337.9
95% BCA Bootstrap UCL	385.5		
90% Chebyshev(Mean, Sd) UCL	438.1	95% Chebyshev(Mean, Sd) UCL	545.4
97.5% Chebyshev(Mean, Sd) UCL	694.5	99% Chebyshev(Mean, Sd) UCL	987.2

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	113	Mean	405.1
Maximum	1380	Median	295
SD	400.2	Std. Error of Mean	133.4
Coefficient of Variation	0.988	Skewness	2.145
Mean of logged Data	5.672	SD of logged Data	0.828

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	653.2	95% Adjusted-CLT UCL (Chen-1995)	726.5
		95% Modified-t UCL (Johnson-1978)	669.1

Nonparametric Distribution Free UCLs

95% CLT UCL	624.5	95% Jackknife UCL	653.2
95% Standard Bootstrap UCL	614.3	95% Bootstrap-t UCL	933.9
95% Hall's Bootstrap UCL	1400	95% Percentile Bootstrap UCL	628.6
95% BCA Bootstrap UCL	712.7		
90% Chebyshev(Mean, Sd) UCL	805.3	95% Chebyshev(Mean, Sd) UCL	986.6
97.5% Chebyshev(Mean, Sd) UCL	1238	99% Chebyshev(Mean, Sd) UCL	1733

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	9.11	Mean	25.98
Maximum	57.9	Median	15
SD	20.76	Std. Error of Mean	6.919
Coefficient of Variation	0.799	Skewness	0.866
Mean of logged Data	2.983	SD of logged Data	0.766

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	38.84	95% Adjusted-CLT UCL (Chen-1995)	39.49
		95% Modified-t UCL (Johnson-1978)	39.18

Nonparametric Distribution Free UCLs

95% CLT UCL	37.36	95% Jackknife UCL	38.84
95% Standard Bootstrap UCL	36.63	95% Bootstrap-t UCL	41.66
95% Hall's Bootstrap UCL	33.3	95% Percentile Bootstrap UCL	36.55
95% BCA Bootstrap UCL	39.21		
90% Chebyshev(Mean, Sd) UCL	46.74	95% Chebyshev(Mean, Sd) UCL	56.14
97.5% Chebyshev(Mean, Sd) UCL	69.19	99% Chebyshev(Mean, Sd) UCL	94.82

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	56.14

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.9	Mean	10.36
Maximum	23.3	Median	8.67
SD	4.973	Std. Error of Mean	1.658
Coefficient of Variation	0.48	Skewness	2.731
Mean of logged Data	2.27	SD of logged Data	0.352

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	13.44	95% Adjusted-CLT UCL (Chen-1995)	14.7
		95% Modified-t UCL (Johnson-1978)	13.69

Nonparametric Distribution Free UCLs

95% CLT UCL	13.08	95% Jackknife UCL	13.44

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	26	Mean	32.4
Maximum	42.1	Median	31.9
SD	4.983	Std. Error of Mean	1.661
Coefficient of Variation	0.154	Skewness	0.785
Mean of logged Data	3.468	SD of logged Data	0.15

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.49	95% Adjusted-CLT UCL (Chen-1995)	35.6
		95% Modified-t UCL (Johnson-1978)	35.56

Nonparametric Distribution Free UCLs

95% CLT UCL	35.13	95% Jackknife UCL	35.49
95% Standard Bootstrap UCL	34.93	95% Bootstrap-t UCL	36.42
95% Hall's Bootstrap UCL	38.47	95% Percentile Bootstrap UCL	35
95% BCA Bootstrap UCL	35.17		
90% Chebyshev(Mean, Sd) UCL	37.38	95% Chebyshev(Mean, Sd) UCL	39.64
97.5% Chebyshev(Mean, Sd) UCL	42.77	99% Chebyshev(Mean, Sd) UCL	48.93

Suggested UCL to Use
Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/8/2020 10:57:39 AM
From File	Table 1. Parcel Analytical Results (Kingman APN 32439037) - HRA_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.54	Mean	7.926
Maximum	50.7	Median	2.13
SD	16.08	Std. Error of Mean	5.36
Coefficient of Variation	2.029	Skewness	2.973
Mean of logged Data	1.208	SD of logged Data	1.088

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	17.89	95% Adjusted-CLT UCL (Chen-1995)	22.42
		95% Modified-t UCL (Johnson-1978)	18.78

Nonparametric Distribution Free UCLs

95% CLT UCL	16.74	95% Jackknife UCL	17.89
95% Standard Bootstrap UCL	16.3	95% Bootstrap-t UCL	143.7
95% Hall's Bootstrap UCL	89.3	95% Percentile Bootstrap UCL	18.47
95% BCA Bootstrap UCL	23.91		
90% Chebyshev(Mean, Sd) UCL	24.01	95% Chebyshev(Mean, Sd) UCL	31.29
97.5% Chebyshev(Mean, Sd) UCL	41.4	99% Chebyshev(Mean, Sd) UCL	61.25

Suggested UCL to Use
Data appear Approximate Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ACENAPHTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0

Minimum	0.475	Mean	21.68
Maximum	157	Median	2.27
SD	51.1	Std. Error of Mean	17.03
Coefficient of Variation	2.357	Skewness	2.926
Mean of logged Data	1.465	SD of logged Data	1.679

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.35	95% Adjusted-CLT UCL (Chen-1995)	67.44
		95% Modified-t UCL (Johnson-1978)	56.12

Nonparametric Distribution Free UCLs

95% CLT UCL	49.69	95% Jackknife UCL	53.35
95% Standard Bootstrap UCL	48.6	95% Bootstrap-t UCL	644.9
95% Hall's Bootstrap UCL	452.2	95% Percentile Bootstrap UCL	54.29
95% BCA Bootstrap UCL	71.08		
90% Chebyshev(Mean, Sd) UCL	72.77	95% Chebyshev(Mean, Sd) UCL	95.92
97.5% Chebyshev(Mean, Sd) UCL	128	99% Chebyshev(Mean, Sd) UCL	191.1

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.44	Mean	54
Maximum	235	Median	8.05
SD	89.75	Std. Error of Mean	29.92
Coefficient of Variation	1.662	Skewness	1.683
Mean of logged Data	2.761	SD of logged Data	1.586

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL **95% UCLs (Adjusted for Skewness)**

95% Student's-t UCL	109.6	95% Adjusted-CLT UCL (Chen-1995)	121.1
		95% Modified-t UCL (Johnson-1978)	112.4

Nonparametric Distribution Free UCLs

95% CLT UCL	103.2	95% Jackknife UCL	109.6
95% Standard Bootstrap UCL	99.84	95% Bootstrap-t UCL	743.3
95% Hall's Bootstrap UCL	634.8	95% Percentile Bootstrap UCL	104.2
95% BCA Bootstrap UCL	117.6		
90% Chebyshev(Mean, Sd) UCL	143.8	95% Chebyshev(Mean, Sd) UCL	184.4
97.5% Chebyshev(Mean, Sd) UCL	240.8	99% Chebyshev(Mean, Sd) UCL	351.7

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZ(A)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	16.4	Mean	314.7
Maximum	1690	Median	71.4
SD	550.7	Std. Error of Mean	183.6
Coefficient of Variation	1.75	Skewness	2.432
Mean of logged Data	4.71	SD of logged Data	1.434

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	656	95% Adjusted-CLT UCL (Chen-1995)	775.6
		95% Modified-t UCL (Johnson-1978)	680.8

Nonparametric Distribution Free UCLs

95% CLT UCL	616.6	95% Jackknife UCL	656
95% Standard Bootstrap UCL	598.9	95% Bootstrap-t UCL	3443
95% Hall's Bootstrap UCL	2230	95% Percentile Bootstrap UCL	620.4
95% BCA Bootstrap UCL	798.8		
90% Chebyshev(Mean, Sd) UCL	865.3	95% Chebyshev(Mean, Sd) UCL	1115
97.5% Chebyshev(Mean, Sd) UCL	1461	99% Chebyshev(Mean, Sd) UCL	2141

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(A)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	19.3	Mean	380.7
Maximum	2140	Median	107
SD	686.1	Std. Error of Mean	228.7
Coefficient of Variation	1.802	Skewness	2.626
Mean of logged Data	4.932	SD of logged Data	1.401

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	806	95% Adjusted-CLT UCL (Chen-1995)	970.8
		95% Modified-t UCL (Johnson-1978)	839.4

Nonparametric Distribution Free UCLs

95% CLT UCL	756.9	95% Jackknife UCL	806
95% Standard Bootstrap UCL	728.6	95% Bootstrap-t UCL	3958
95% Hall's Bootstrap UCL	2721	95% Percentile Bootstrap UCL	780.3
95% BCA Bootstrap UCL	1063		
90% Chebyshev(Mean, Sd) UCL	1067	95% Chebyshev(Mean, Sd) UCL	1378
97.5% Chebyshev(Mean, Sd) UCL	1809	99% Chebyshev(Mean, Sd) UCL	2656

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	26.9	Mean	470.2
Maximum	2560	Median	146
SD	822.9	Std. Error of Mean	274.3
Coefficient of Variation	1.75	Skewness	2.551
Mean of logged Data	5.185	SD of logged Data	1.37

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	980.3	95% Adjusted-CLT UCL (Chen-1995)	1171
		95% Modified-t UCL (Johnson-1978)	1019

Nonparametric Distribution Free UCLs

95% CLT UCL	921.4	95% Jackknife UCL	980.3
95% Standard Bootstrap UCL	899.5	95% Bootstrap-t UCL	5141
95% Hall's Bootstrap UCL	3344	95% Percentile Bootstrap UCL	956
95% BCA Bootstrap UCL	1251		
90% Chebyshev(Mean, Sd) UCL	1293	95% Chebyshev(Mean, Sd) UCL	1666
97.5% Chebyshev(Mean, Sd) UCL	2183	99% Chebyshev(Mean, Sd) UCL	3200

Suggested UCL to Use
Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	15.4	Mean	245
Maximum	1280	Median	80.5
SD	408.9	Std. Error of Mean	136.3
Coefficient of Variation	1.669	Skewness	2.521
Mean of logged Data	4.615	SD of logged Data	1.325

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	498.5	95% Adjusted-CLT UCL (Chen-1995)	591.6
		95% Modified-t UCL (Johnson-1978)	517.6

Nonparametric Distribution Free UCLs

95% CLT UCL	469.2	95% Jackknife UCL	498.5

95% Standard Bootstrap UCL	451.5	95% Bootstrap-t UCL	2167
95% Hall's Bootstrap UCL	1562	95% Percentile Bootstrap UCL	475
95% BCA Bootstrap UCL	595.1		
90% Chebyshev(Mean, Sd) UCL	653.9	95% Chebyshev(Mean, Sd) UCL	839.2
97.5% Chebyshev(Mean, Sd) UCL	1096	99% Chebyshev(Mean, Sd) UCL	1601

Suggested UCL to Use

Data appear Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	10.5	Mean	201.7
Maximum	1140	Median	57.9
SD	365.5	Std. Error of Mean	121.8
Coefficient of Variation	1.812	Skewness	2.635
Mean of logged Data	4.291	SD of logged Data	1.4

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	428.3	95% Adjusted-CLT UCL (Chen-1995)	516.5
		95% Modified-t UCL (Johnson-1978)	446.1

Nonparametric Distribution Free UCLs

95% CLT UCL	402.1	95% Jackknife UCL	428.3
95% Standard Bootstrap UCL	389.9	95% Bootstrap-t UCL	2214
95% Hall's Bootstrap UCL	1456	95% Percentile Bootstrap UCL	416.6
95% BCA Bootstrap UCL	565.1		
90% Chebyshev(Mean, Sd) UCL	567.2	95% Chebyshev(Mean, Sd) UCL	732.8
97.5% Chebyshev(Mean, Sd) UCL	962.6	99% Chebyshev(Mean, Sd) UCL	1414

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	19.7	Mean	415.6
Maximum	2420	Median	95.2
SD	777.6	Std. Error of Mean	259.2
Coefficient of Variation	1.871	Skewness	2.67
Mean of logged Data	4.95	SD of logged Data	1.437

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	897.6	95% Adjusted-CLT UCL (Chen-1995)	1088
		95% Modified-t UCL (Johnson-1978)	936.1

Nonparametric Distribution Free UCLs

95% CLT UCL	842	95% Jackknife UCL	897.6
95% Standard Bootstrap UCL	817.2	95% Bootstrap-t UCL	4995
95% Hall's Bootstrap UCL	3424	95% Percentile Bootstrap UCL	870.6
95% BCA Bootstrap UCL	1172		
90% Chebyshev(Mean, Sd) UCL	1193	95% Chebyshev(Mean, Sd) UCL	1545
97.5% Chebyshev(Mean, Sd) UCL	2034	99% Chebyshev(Mean, Sd) UCL	2995

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

DIBENZ(A,H)ANTHRACENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	3.75	Mean	77.26
Maximum	457	Median	21.1
SD	146	Std. Error of Mean	48.68
Coefficient of Variation	1.89	Skewness	2.745
Mean of logged Data	3.287	SD of logged Data	1.423

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	167.8	95% Adjusted-CLT UCL (Chen-1995)	204.9
		95% Modified-t UCL (Johnson-1978)	175.2

Nonparametric Distribution Free UCLs

95% CLT UCL	157.3	95% Jackknife UCL	167.8
95% Standard Bootstrap UCL	152.7	95% Bootstrap-t UCL	797
95% Hall's Bootstrap UCL	539.8	95% Percentile Bootstrap UCL	166.7
95% BCA Bootstrap UCL	219.8		
90% Chebyshev(Mean, Sd) UCL	223.3	95% Chebyshev(Mean, Sd) UCL	289.4
97.5% Chebyshev(Mean, Sd) UCL	381.3	99% Chebyshev(Mean, Sd) UCL	561.6

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORANTHENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	30.2	Mean	499.6
Maximum	2350	Median	92.7
SD	815.5	Std. Error of Mean	271.8
Coefficient of Variation	1.632	Skewness	1.952
Mean of logged Data	5.16	SD of logged Data	1.458

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Lognormal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1005	95% Adjusted-CLT UCL (Chen-1995)	1136
		95% Modified-t UCL (Johnson-1978)	1035

Nonparametric Distribution Free UCLs

95% CLT UCL	946.7	95% Jackknife UCL	1005
95% Standard Bootstrap UCL	919.9	95% Bootstrap-t UCL	4991
95% Hall's Bootstrap UCL	4174	95% Percentile Bootstrap UCL	993.6
95% BCA Bootstrap UCL	1140		
90% Chebyshev(Mean, Sd) UCL	1315	95% Chebyshev(Mean, Sd) UCL	1685
97.5% Chebyshev(Mean, Sd) UCL	2197	99% Chebyshev(Mean, Sd) UCL	3204

Suggested UCL to Use

Data appear Lognormal, May want to try Lognormal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

FLUORENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	1.06	Mean	10.63
Maximum	64.2	Median	1.42
SD	20.84	Std. Error of Mean	6.948
Coefficient of Variation	1.961	Skewness	2.648
Mean of logged Data	1.161	SD of logged Data	1.454

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.55	95% Adjusted-CLT UCL (Chen-1995)	28.61
		95% Modified-t UCL (Johnson-1978)	24.57

Nonparametric Distribution Free UCLs

95% CLT UCL	22.06	95% Jackknife UCL	23.55
95% Standard Bootstrap UCL	21.42	95% Bootstrap-t UCL	160.8
95% Hall's Bootstrap UCL	166.5	95% Percentile Bootstrap UCL	23.72
95% BCA Bootstrap UCL	30.04		
90% Chebyshev(Mean, Sd) UCL	31.47	95% Chebyshev(Mean, Sd) UCL	40.92
97.5% Chebyshev(Mean, Sd) UCL	54.02	99% Chebyshev(Mean, Sd) UCL	79.76

Suggested UCL to Use

95% Hall's Bootstrap UCL	166.5

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	17.5	Mean	281.7
Maximum	1490	Median	85.8
SD	476.8	Std. Error of Mean	158.9
Coefficient of Variation	1.693	Skewness	2.532
Mean of logged Data	4.73	SD of logged Data	1.338

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	577.2	95% Adjusted-CLT UCL (Chen-1995)	686.4
		95% Modified-t UCL (Johnson-1978)	599.5

Nonparametric Distribution Free UCLs

95% CLT UCL	543.1	95% Jackknife UCL	577.2
95% Standard Bootstrap UCL	528.9	95% Bootstrap-t UCL	2474
95% Hall's Bootstrap UCL	1808	95% Percentile Bootstrap UCL	584
95% BCA Bootstrap UCL	715.6		
90% Chebyshev(Mean, Sd) UCL	758.4	95% Chebyshev(Mean, Sd) UCL	974.4
97.5% Chebyshev(Mean, Sd) UCL	1274	99% Chebyshev(Mean, Sd) UCL	1863

Suggested UCL to Use
Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

NAPHTHALENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	2.82	Mean	20.61
Maximum	146	Median	4.08
SD	47.1	Std. Error of Mean	15.7
Coefficient of Variation	2.286	Skewness	2.981
Mean of logged Data	1.887	SD of logged Data	1.226

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	49.8	95% Adjusted-CLT UCL (Chen-1995)	63.1
		95% Modified-t UCL (Johnson-1978)	52.4

Nonparametric Distribution Free UCLs

95% CLT UCL	46.43	95% Jackknife UCL	49.8
95% Standard Bootstrap UCL	44.52	95% Bootstrap-t UCL	1779
95% Hall's Bootstrap UCL	1616	95% Percentile Bootstrap UCL	51.39
95% BCA Bootstrap UCL	67.9		
90% Chebyshev(Mean, Sd) UCL	67.71	95% Chebyshev(Mean, Sd) UCL	89.04
97.5% Chebyshev(Mean, Sd) UCL	118.7	99% Chebyshev(Mean, Sd) UCL	176.8

Suggested UCL to Use

95% Hall's Bootstrap UCL	1616

Recommended UCL exceeds the maximum observation

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PHENANTHRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	14.3	Mean	233.4
Maximum	967	Median	36.9
SD	371.9	Std. Error of Mean	124
Coefficient of Variation	1.593	Skewness	1.646
Mean of logged Data	4.347	SD of logged Data	1.506

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics
Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	463.9	95% Adjusted-CLT UCL (Chen-1995)	510
		95% Modified-t UCL (Johnson-1978)	475.3

Nonparametric Distribution Free UCLs

95% CLT UCL	437.3	95% Jackknife UCL	463.9
95% Standard Bootstrap UCL	420	95% Bootstrap-t UCL	2370
95% Hall's Bootstrap UCL	2190	95% Percentile Bootstrap UCL	434

95% BCA Bootstrap UCL	512.6		
90% Chebyshev(Mean, Sd) UCL	605.3	95% Chebyshev(Mean, Sd) UCL	773.8
97.5% Chebyshev(Mean, Sd) UCL	1008	99% Chebyshev(Mean, Sd) UCL	1467

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PYRENE

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	28.1	Mean	517.6
Maximum	2770	Median	99.4
SD	908	Std. Error of Mean	302.7
Coefficient of Variation	1.754	Skewness	2.387
Mean of logged Data	5.177	SD of logged Data	1.451

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Approximate Gamma Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1080	95% Adjusted-CLT UCL (Chen-1995)	1273
		95% Modified-t UCL (Johnson-1978)	1121

Nonparametric Distribution Free UCLs

95% CLT UCL	1015	95% Jackknife UCL	1080
95% Standard Bootstrap UCL	990	95% Bootstrap-t UCL	5964
95% Hall's Bootstrap UCL	3879	95% Percentile Bootstrap UCL	1027
95% BCA Bootstrap UCL	1316		
90% Chebyshev(Mean, Sd) UCL	1426	95% Chebyshev(Mean, Sd) UCL	1837
97.5% Chebyshev(Mean, Sd) UCL	2408	99% Chebyshev(Mean, Sd) UCL	3529

Suggested UCL to Use

Data appear Approximate Gamma, May want to try Gamma Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

COPPER

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	8.33	Mean	16.52
Maximum	34.2	Median	10
SD	10.67	Std. Error of Mean	3.558
Coefficient of Variation	0.646	Skewness	1.101
Mean of logged Data	2.643	SD of logged Data	0.576

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.13	95% Adjusted-CLT UCL (Chen-1995)	23.76
		95% Modified-t UCL (Johnson-1978)	23.35

Nonparametric Distribution Free UCLs

95% CLT UCL	22.37	95% Jackknife UCL	23.13
95% Standard Bootstrap UCL	22.02	95% Bootstrap-t UCL	28.82
95% Hall's Bootstrap UCL	22.05	95% Percentile Bootstrap UCL	22.11
95% BCA Bootstrap UCL	22.98		
90% Chebyshev(Mean, Sd) UCL	27.19	95% Chebyshev(Mean, Sd) UCL	32.02
97.5% Chebyshev(Mean, Sd) UCL	38.73	99% Chebyshev(Mean, Sd) UCL	51.92

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	32.02

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

LEAD

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	6.51	Mean	7.17
Maximum	7.89	Median	7.25
SD	0.487	Std. Error of Mean	0.162
Coefficient of Variation	0.068	Skewness	0.0341
Mean of logged Data	1.968	SD of logged Data	0.0681

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.472	95% Adjusted-CLT UCL (Chen-1995)	7.439
		95% Modified-t UCL (Johnson-1978)	7.472

Nonparametric Distribution Free UCLs

95% CLT UCL	7.437	95% Jackknife UCL	7.472
95% Standard Bootstrap UCL	7.419	95% Bootstrap-t UCL	7.477
95% Hall's Bootstrap UCL	7.415	95% Percentile Bootstrap UCL	7.418
95% BCA Bootstrap UCL	7.422		
90% Chebyshev(Mean, Sd) UCL	7.657	95% Chebyshev(Mean, Sd) UCL	7.878
97.5% Chebyshev(Mean, Sd) UCL	8.185	99% Chebyshev(Mean, Sd) UCL	8.786

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ZINC

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	26.6	Mean	29.02
Maximum	32.6	Median	28.5
SD	2.234	Std. Error of Mean	0.745
Coefficient of Variation	0.077	Skewness	0.565
Mean of logged Data	3.365	SD of logged Data	0.0759

Note: Sample size is small (e.g., <10), if data are collected using ISM approach
you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options.

Nonparametric Distribution Free UCL Statistics

Data appear Normal Distributed at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	30.41	95% Adjusted-CLT UCL (Chen-1995)	30.4
		95% Modified-t UCL (Johnson-1978)	30.43

Nonparametric Distribution Free UCLs

95% CLT UCL	30.25	95% Jackknife UCL	30.41
95% Standard Bootstrap UCL	30.2	95% Bootstrap-t UCL	30.63
95% Hall's Bootstrap UCL	30.43	95% Percentile Bootstrap UCL	30.23
95% BCA Bootstrap UCL	30.37		
90% Chebyshev(Mean, Sd) UCL	31.26	95% Chebyshev(Mean, Sd) UCL	32.27
97.5% Chebyshev(Mean, Sd) UCL	33.67	99% Chebyshev(Mean, Sd) UCL	36.43

Suggested UCL to Use

Data appear Normal, May want to try Normal Distribution

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Exhibit 4 Evaluation of Prior RI Parcel Sites

From 2014 through 2017, additional parcels were investigated. The results of these investigation are reported in the Remedial Investigation.

Data from these investigations were evaluated similar to the methods presented in the HHRA, however, data were not treated to represent the depths of concern evaluated in the HHRA (i.e. 0-1 foot bgs, and all depths). Alternatively, health impacts were assessed for each interval sampled. These intervals are referred to as Decision Units, or DUs. The variation in risk assessment methods as compared to the January to October 2019 data is due a mixture of sampling methods used for surface sampling from 2014 to 2017 (not all parcels were sampled in ISM triplicates for surface samples).

As presented in the RI, the 95% Upper Confidence Level (UCL) for each DU at each parcel was calculated and used to estimate potential health impacts. The use of the UCL provides protection against underestimation, but it may also overestimate the true mean (ITRC, 2020).Table 1 summarizes the incremental lifetime cancer risks and noncarcinogenic hazards, and Table 2 summarizes the lead indices for the parcels characterized from 2014 to 2017.

EXHIBIT 4
Table 1
Summary of Incremental Lifetime Cancer Risks and Noncarcinogenic Hazards at Parcels Characterized from 2014 - 2017

APN	Street #	Street	DU-1		DU-2		DU-3		DU-4		DU-5	
			Surface Soil		0'-1' BGS		1'-2' BGS		2'-3' BGS		3'-4' BGS	
			Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
32404212	3883	E Shaeffer	6E-07	0.3								
32404240	3850	E Devlin Ave	7E-07	0.3								
32404281	3849	E Shaeffer Ave	3E-07	0.2								
32404484	3860	E Hearne Ave	5E-06	0.2	1E-05	0.1	2E-07	0.1	7E-07	0.2	4E-06	0.2
32404485	3854	E Hearne Ave	4E-06	0.4	1E-06	0.2	6E-08	0.3				
32404486	3850	E Hearne Ave	7E-06	0.2	3E-06	0.2	3E-07	0.2				
32404559	3916	E Hearne Ave	1E-06	0.2								
32404570	3883	E Devlin Ave	4E-06	0.1								
32404571	3887	E Devlin Ave	1E-06	0.4								
32404572	3895	E Devlin Ave	1E-06	0.2	8E-07	0.3	9E-08	0.2				
32404639	3916	E Ryan Ave	5E-06	0.1								
32404640	3910	E Ryan Ave	9E-05	0.5								
32404643	3910	E Ryan Ave							5E-07	0.2	2E-07	0.2
32404653	3899	E Hearne Ave	4E-05	0.2	2E-05	0.2	4E-06	0.1				
32404686	3870	E Ryan Ave	1E-05	0.1	1E-06	0.1	6E-08	0.1				
32404687	3866	E Ryan Ave	7E-06	0.1	3E-06	0.2	2E-07	0.1				
32405150	3871	E Ryan Ave	3E-06	0.2	8E-07	0.3	2E-07	0.2				
32405181	3940	E Lum Ave	1E-06	0.1								
32405182	3936	E Lum Ave	3E-06	0.2	3E-06	0.7	3E-07	0.2				
32405208	3939	E Ryan Ave	7E-07	0.2								
32405270	3980	E Thompson Ave	4E-06	0.1	2E-06	0.2	3E-06	0.1				
32405273	3966	E Thompson Ave			4E-07	0.1	7E-09	0.2				
32405274	3960	E Thompson Ave	3E-06	0.2	5E-06	0.1	6E-08	0.2				
32405287	3896	E Thompson Ave	3E-06	0.1	7E-07	0.2	9E-08	0.2				
32405288	3890	E Thompson Ave	9E-07	0.3								
32405295	3887	E Lum Ave	1E-05	0.2	1E-06	0.1	1E-06	0.1				
32405296	3895	E Lum Ave	6E-06	0.2	6E-06	0.1	3E-07	0.1				
32405297	3899	E Lum Ave	2E-05	0.2	2E-05	0.2	2E-06	0.2				
32405306	3945	E Lum Ave	7E-06	0.2	1E-05	0.2	1E-06	0.1				
32405309	3959	E Lum Ave	2E-06	0.4								
32405310	3965	E Lum Ave	1E-06	0.2								
32436014	3954	E Lass Ave	4E-05	0.5	7E-06	0.3	5E-07	0.1				
32436015	3958	E Lass Ave	1E-04	0.7	3E-05	0.3	8E-06	0.2	1E-05	0.3	5E-06	0.2
32436021	3979	E Lass Ave	1E-06	0.1								
32436022	3975	E Lass Ave	7E-06	0.3	1E-06	0.2	5E-07	0.1				
32436023	3971	E Lass Ave	7E-07	0.2								
32436026	3959	E Lass Ave	8E-07	0.4								
32437020	3980	E Packard Ave	2E-07	0.1								
32439003	3974	E Snavely Ave	3E-06	0.2	1E-06	0.09	9E-08	0.1				
32439004	3970	E Snavely Ave	5E-06	0.4	1E-05	0.3	3E-07	0.2				
32439005	3962	E Snavely Way	1E-05	0.2	3E-05	0.2	3E-07	0.09				
32439006	3960	E Snavely Way	1E-05	0.2	7E-06	0.2	4E-06	0.1				
32439007	3958	E Snavely Way	2E-05	0.2	2E-05	0.2	9E-06	0.1				
32439013	3940	E Snavely Cir	7E-05	0.4	1E-05	0.04	8E-06	0.03				
32439014	3936	E Snavely Cir	8E-06	0.2	5E-06	0.1	1E-07	0.1				
32439015	3930	E Snavely Plz	7E-06	0.2	3E-06	0.1	3E-07	0.1				
32439016	3928	E Snavely Plz	2E-05	0.2	6E-06	0.1	1E-06	0.1				
32439017	3926	E Snavely Plz	1E-05	0.2	2E-06	0.01	6E-07	0.002				
32439026	3975	E Snavely Ave	1E-05	0.3	7E-05	0.3	1E-04	0.6				
32439032	3951	E Snavely Ave	1E-05	0.2	1E-05	0.0	2E-04	0.9				
32439033	3939	E Snavely Ave	1E-05	0.2	3E-05	0.3	5E-06	0.1				
32439035	3939	E Snavely Ave			1E-05	0.2	4E-07	0.1				
32404211B	3875	E Shaeffer	1E-06	0.2								
32404211D	3880	E Devlin Ave	2E-06	0.2	7E-07	0.1	2E-08	0.1				
32404211E	3880	E Devlin Ave	2E-06	0.1	5E-07	0.2	6E-08	0.1				
32404237A(E)	3870	E Devlin Ave	2E-05	0.2	8E-06	0.2	8E-07	0.1	3E-07	0.2	2E-07	0.2
32404237A(W)	3870	E Devlin Ave	5E-05	0.2	6E-05	0.3	6E-06	0.1	2E-06	0.2	1E-06	0.1
32404282A(E)	3871	E Shaeffer Ave	2E-06	0.5								
32404282A(W)	3871	E Shaeffer Ave	1E-06	0.2								
32404282B(E)	3855	E Shaeffer Ave	4E-07	0.1								
32404282B(W)	3855	E Shaeffer Ave	2E-07	0.2								

EXHIBIT 4
Table 1
Summary of Incremental Lifetime Cancer Risks and Noncarcinogenic Hazards at Parcels Characterized from 2014 - 2017

APN	**Street #**	Street	DU-1 Surface Soil Incremental Lifetime Cancer Risk	DU-1 Surface Soil Non-Cancer Hazard	DU-2 0'-1' BGS Incremental Lifetime Cancer Risk	DU-2 0'-1' BGS Non-Cancer Hazard	DU-3 1'-2' BGS Incremental Lifetime Cancer Risk	DU-3 1'-2' BGS Non-Cancer Hazard	DU-4 2'-3' BGS Incremental Lifetime Cancer Risk	DU-4 2'-3' BGS Non-Cancer Hazard	DU-5 3'-4' BGS Incremental Lifetime Cancer Risk	DU-5 3'-4' BGS Non-Cancer Hazard
32404561C	3890	E Hearne Ave	1E-05	0.2	5E-06	0.1	7E-06	0.09	1E-06	0.09	4E-07	0.1
32404655A(E)	3905	E Hearne Ave	4E-06	0.2	3E-06	0.006	3E-07	0.0007				
32404655A(W)	3905	E Hearne Ave	4E-06	0.1	4E-06	0.2	4E-07	0.1				
32405180A(E)	3950	E Lum Ave	1E-06	0.2	5E-07	0.3	1E-07	0.1				
32405180A(W)	3950	E Lum Ave	1E-06	0.2	3E-07	0.1	5E-08	0.1	5E-08	0.2	4E-08	0.2
32405194B(C)	3876	E Lum Ave	3E-06	0.2	4E-07	0.1	1E-07	0.1				
32405194B(E)	3876	E Lum Ave	6E-06	0.1	4E-07	0.1	1E-07	0.1				
32405194B(W)	3876	E Lum Ave	5E-06	0.2	7E-07	0.1	2E-07	0.1				
32405205A(E)	3925	E Ryan Ave	3E-06	0.2	3E-06	0.3	2E-07	0.3				
32405205A(W)	3925	E Ryan Ave	3E-06	0.2	8E-06	0.3	1E-06	0.2				
32405272A(E)	3970	E Thompson Ave	3E-06	0.2	2E-07	0.2	9E-08	0.09				
32405272A(W)	3970	E Thompson Ave	1E-06	0.2	1E-06	0.1	2E-07	0.08				
32405276A(E)	3950	E Thompson Ave	2E-05	0.3	6E-06	0.1	1E-07	0.1	1E-07	0.1		
32405276A(W)	3950	E Thompson Ave	9E-05	0.6	2E-05	0.2	3E-06	0.1	5E-07	0.1		
32405308A(E)	3955	E Lum Ave	1E-06	0.1	5E-07	0.1	1E-07	0.2				
32405308A(W)	3955	E Lum Ave	2E-06	0.2	6E-07	0.4	1E-08	0.2				

EXHIBIT 4
Table 2
Summary of Lead Ratios# at Parcels Characterized from 2014 - 2017

APN	Street #	Street	DU-1 Surface Soil	DU-2 0'-1' BGS	DU-3 1'-2' BGS	DU-4 2'-3' BGS	DU-5 3'-4' BGS
32404212	3883	E Shaeffer	0.5				
32404240	3850	E Devlin Ave	0.03				
32404281	3849	E Shaeffer Ave	0.04				
32404484	3860	E Hearne Ave	0.04	0.04	0.03	0.03	0.02
32404485	3854	E Hearne Ave	0.05	0.03	0.03		
32404486	3850	E Hearne Ave	0.05	0.04	0.03		
32404559	3916	E Hearne Ave	0.2				
32404570	3883	E Devlin Ave	0.04				
32404571	3887	E Devlin Ave	0.05				
32404572	3895	E Devlin Ave	0.5	0.5	0.03		
32404639	3916	E Ryan Ave	0.1				
32404640	3910	E Ryan Ave	0.3				
32404643	3910	E Ryan Ave				0.03	0.02
32404653	3899	E Hearne Ave	0.08	0.1	0.03		
32404686	3870	E Ryan Ave	0.05	0.03	0.02		
32404687	3866	E Ryan Ave	0.06	0.03	0.02		
32405150	3871	E Ryan Ave	0.04	0.04	0.03		
32405181	3940	E Lum Ave	0.09				
32405182	3936	E Lum Ave	0.07	2.0	0.28		
32405208	3939	E Ryan Ave	0.1				
32405270	3980	E Thompson Ave	0.4	0.2	0.04		
32405273	3966	E Thompson Ave		0.07	0.03		
32405274	3960	E Thompson Ave	0.1	0.4	0.03		
32405287	3896	E Thompson Ave	0.04	0.03	0.03		
32405288	3890	E Thompson Ave	0.05				
32405295	3887	E Lum Ave	0.04	0.02			
32405296	3895	E Lum Ave	0.03	0.03	0.02		
32405297	3899	E Lum Ave	0.03	0.03	0.03		
32405306	3945	E Lum Ave	0.09	0.1	0.05		
32405309	3959	E Lum Ave	0.9				
32405310	3965	E Lum Ave	0.4				
32436014	3954	E Lass Ave	0.05				
32436015	3958	E Lass Ave	0.05	0.03	0.03	0.03	0.02
32436021	3979	E Lass Ave	0.05				
32436022	3975	E Lass Ave	0.04	0.68	0.04		
32436023	3971	E Lass Ave	0.04				
32436026	3959	E Lass Ave	0.14				
32437020	3980	E Packard Ave	0.04				
32439003	3974	E Snavely Ave	0.04	0.08	0.03		
32439004	3970	E Snavely Ave	0.4	0.3	0.03		
32439005	3962	E Snavely Way	0.1	0.2	0.04		
32439006	3960	E Snavely Way	0.5	0.9	0.1		
32439007	3958	E Snavely Way	0.08	0.6	0.03		
32439013	3940	E Snavely Cir	0.06				

EXHIBIT 4
Table 2
Summary of Lead Ratios# at Parcels Characterized from 2014 - 2017
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APN	Street #	Street	DU-1 Surface Soil	DU-2 0'-1' BGS	DU-3 1'-2' BGS	DU-4 2'-3' BGS	DU-5 3'-4' BGS
32439014	3936	E Snavely Cir	0.04	0.04	0.04		
32439015	3930	E Snavely Plz	0.04	0.03	0.03		
32439016	3928	E Snavely Plz	0.04	0.04	0.03		
32439017	3926	E Snavely Plz	0.04				
32439026	3975	E Snavely Ave	0.06				
32439032	3951	E Snavely Ave	0.04				
32439033	3939	E Snavely Ave	0.03	0.1	0.04		
32439035	3939	E Snavely Ave		0.05	0.03		
32404211B	3875	E Shaeffer	0.2				
32404211D	3880	E Devlin Ave	0.15	0.05	0.03		
32404211E	3880	E Devlin Ave	0.07	0.05	0.03		
32404237A(E)	3870	E Devlin Ave	0.07	0.04	0.03	0.03	0.02
32404237A(W)	3870	E Devlin Ave	0.05	0.06	0.02	0.02	0.03
32404282A(E)	3871	E Shaeffer Ave	1				
32404282A(W)	3871	E Shaeffer Ave	0.1				
32404282B(E)	3855	E Shaeffer Ave	0.04				
32404282B(W)	3855	E Shaeffer Ave	0.04				
32404561C	3890	E Hearne Ave	0.04	0.04	0.03	0.03	0.02
32404655A(E)	3905	E Hearne Ave	1	0.05	0.03		
32404655A(W)	3905	E Hearne Ave	0.06	0.1	0.03		
32405180A(E)	3950	E Lum Ave	0.4	0.4	0.03		
32405180A(W)	3950	E Lum Ave	0.07	0.04	0.03	0.02	0.02
32405194B(C)	3876	E Lum Ave	0.05	0.03	0.02		
32405194B(E)	3876	E Lum Ave	0.06	0.03	0.03		
32405194B(W)	3876	E Lum Ave	0.06	0.03	0.03		
32405205A(E)	3925	E Ryan Ave	0.06	0.23	0.05		
32405205A(W)	3925	E Ryan Ave	0.07	0.07	0.05		
32405272A(E)	3970	E Thompson Ave	1	0.2	0.3		
32405272A(W)	3970	E Thompson Ave	0.06	0.06	0.12		
32405276A(E)	3950	E Thompson Ave	0.08	0.07	0.02	0.02	
32405276A(W)	3950	E Thompson Ave	0.3	0.1	0.03	0.02	
32405308A(E)	3955	E Lum Ave	0.2	0.4	0.03		
32405308A(W)	3955	E Lum Ave	0.09	0.2	0.03		

The lead ratio represents a comparions of site concentrations to the USEPA lead residential screening level of 400 mg/kg (i.e., [site concentration]/[400 mg/kg])

Site: Kingman APN 32404237A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration										DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs		DU-5 3'-4' bgs		Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg										EPC_{DU1}/ RSL_c*1x10^{-6}	EPC_{DU1}/RSL_{nc}	EPC_{DU2}/ RSL_c*1x10^{-6}	EPC_{DU2}/RSL_{nc}	EPC_{DU3}/ RSL_c*1x10^{-6}	EPC_{DU3}/RSL_{nc}	EPC_{DU4}/ RSL_c*1x10^{-6}	EPC_{DU4}/RSL_{nc}	EPC_{DU5}/ RSL_c*1x10^{-6}	EPC_{DU5}/RSL_{nc}
Antimony		31	1.50	M	2.10	M	1.60	M	4.81		3.32			0.05		0.1		0.05		0.2		0.1
Copper		3100	9.70	M	10.30	M	9.90	M	13.1		10.1			0.003		0.003		0.003		0.004		0.003
Zinc		23000	79.00	M	46.70	M	40.80	M	47.1		48.9			0.003		0.002		0.002		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg										(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}	EPC_{DU1}x0.001/ RSL_{nc}	EPC_{DU2} x0.001/ RSL_c*1x10^{-6}	EPC_{DU2}/RSL_{nc}	(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}	EPC_{DU3}x0.001/ RSL_{nc}	EPC_{DU4} x0.001/ RSL_c*1x10^{-6}	EPC_{DU4}/RSL_{nc}	EPC_{DU5} x0.001/ RSL_c*1x10^{-6}	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	31.00	M	52.00	M	4.10	M	1.11		ND		2E-09	0.000007	3E-09	0.00001	2E-10	0.000001	6E-11	0.0000003		
2-Methylnaphthalene		240	66.00	M	89.00	M	7.50	M	5.66		ND			0.0003		0.0004		0.00003		0.00002		
Acenaphthene		3600	160.00	M	240.00	M	23.00	M	7.61		8.80			0.00004		0.00007		0.000006		0.000002		0.000002
Acenaphthylene	not available		ND		ND		ND		4.88		ND											
Anthracene		18000	600.00	M	790.00	M	100.00	M	33.1		19.2			0.00003		0.00004		0.000006		0.000002		0.000001
Benzo(a)anthracene	1.10E+00		3800.00	M	4900.00	M	600.00	M	179		111		3E-06		4E-06		5E-07					
Benzo(a)pyrene	1.10E-01	18	3000.00	M	3700.00	M	410.00	M	130		97.3		3E-05	0.2	3E-05	0.2	4E-06	0.02	1E-06	0.007	9E-07	0.005
Benzo(b)fluoranthene	1.10E+00		5800.00	M	7600.00	M	870.00	M	276		207		5E-06		7E-06		8E-07		3E-07		2E-07	
Benzo(g,h,i)perylene	not available		3200.00	M	3900.00	M	440.00	M	141		108											
Benzo(k)fluoranthene	1.10E+01		2300.00	M	2500.00	M	260.00	M	79.4		61.3		2E-07		2E-07		2E-08		7E-09		6E-09	
Chrysene	1.10E+02		5000.00	M	6100.00	M	690.00	M	209		172		5E-08		6E-08		6E-09		2E-09		2E-09	
Dibenz(a,h)anthracene	1.10E-01		790.00	M	980.00	M	110.00	M	35.4		26.4		7E-06		9E-06		1E-06		3E-07		2E-07	
Fluoranthene		2400	6700.00	M	8200.00	M	1100.00	M	307		242			0.003		0.003		0.0005		0.00013		0.00010
Fluorene		2400	90.00	M	140.00	M	18.00	M	8.39		3.26			0.00004		0.00006		0.00001		0.000003		0.000001
Indeno(1,2,3-c,d)pyrene	1.10E+00		2800.00	M	3400.00	M	390.00	M	129		92.9		3E-06		3E-06		4E-07		1E-07		8E-08	
Naphthalene	2.00E+00	130	160.00	M	240.00	M	24.00	M	10.4		11.0		8E-08	0.001	1E-07	0.002	1E-08	0.000	5E-09	0.00008		0.00008
Phenanthrene	not available		3200.00	M	3800.00	M	530.00	M	148		118											
Pyrene		1800	7000.00	M	8900.00	M	1100.00	M	320		224			0.004		0.005		0.0006		0.0002		0.0001
													DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates													**5E-05**	**0.2**	**6E-05**	**0.3**	**6E-06**	**0.08**	**2E-06**	**0.2**	**1E-06**	**0.1**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration									DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs		DU-5 3'-4' bgs					
	mg/kg	mg/kg									$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	18.10	M	24.30	M	9.80	M	9.85		11.90	**0.05**	**0.06**	**0.02**	**0.02**	**0.03**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404282B(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.08						0.1								
Copper		3100	14.7						0.005								
Zinc		23000	77.1						0.003								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.13					6E-11	0.0000003								
2-Methylnaphthalene		240	7.13						0.00003								
Anthracene		18000	5.22						0.0000003								
Benzo(a)anthracene	1.10E+00		39.3					4E-08									
Benzo(a)pyrene	1.10E-01	18	20.0					2E-07	0.001								
Benzo(b)fluoranthene	1.10E+00		35.1					3E-08									
Benzo(g,h,i)perylene	not available		39.8														
Benzo(k)fluoranthene	1.10E+01		43.7					4E-09									
Chrysene	1.10E+02		52.0					5E-10									
Dibenz(a,h)anthracene	1.10E-01		14.9					1E-07									
Fluoranthene		2400	36.5						0.00002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		40.6					4E-08									
Naphthalene	2.00E+00	130	5.97					3E-09	0.00005								
Phenanthrene	not available		14.6														
Pyrene		1800	57.3						0.00003								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**4E-07**	**0.1**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	16.70					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404211B

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.26						0.2								
Copper		3100	18.4						0.006								
Zinc		23000	95.1						0.004								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.47					8E-11	0.0000004								
Acenaphthene		3600	6.44						0.000002								
Anthracene		18000	8.81						0.0000005								
Benzo(a)anthracene	1.10E+00		116					1E-07									
Benzo(a)pyrene	1.10E-01	18	72.5					7E-07	0.004								
Benzo(b)fluoranthene	1.10E+00		138					1E-07									
Benzo(g,h,i)perylene	not available		75.2														
Benzo(k)fluoranthene	1.10E+01		54.7					5E-09									
Chrysene	1.10E+02		127					1E-09									
Dibenz(a,h)anthracene	1.10E-01		21.5					2E-07									
Fluoranthene		2400	163						0.0001								
Fluorene		2400	1.49						0.0000006								
Indeno(1,2,3-c,d)pyrene	1.10E+00		90.4					8E-08									
Naphthalene	2.00E+00	130	5.3					3E-09	0.00004								
Phenanthrene	not available		50.2														
Pyrene		1800	198						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.2**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	94					**0.2**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404211D

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.40 M	2.48	2.93				0.2		0.1		0.1				
Copper		3100	12.40 M	17.2	14.1				0.004		0.006		0.005				
Zinc		23000	57.10 M	58.6	49.8				0.002		0.003		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.40 M	ND	ND			8E-11	0.0000003								
2-Methylnaphthalene		240	2.50 M	ND	ND				0.00001								
Acenaphthene		3600	4.40 M	4.2	ND				0.000001		0.000001						
Anthracene		18000	15.00 M	7.9	ND				0.000001		0.0000004						
Benzo(a)anthracene	1.10E+00		100.00 M	59.1	ND			9E-08		5E-08							
Benzo(a)pyrene	1.10E-01	18	120.00 M	58.4	1.7			1E-06	0.01	5E-07	0.003	2E-08	0.0001				
Benzo(b)fluoranthene	1.10E+00		190.00 M	120	4.9			2E-07		1E-07		4E-09					
Benzo(g,h,i)perylene	not available		85.00 M	38.5	ND												
Benzo(k)fluoranthene	1.10E+01		26.00 M	149	ND			2E-09		1E-08							
Chrysene	1.10E+02		150.00 M	80.8	ND			1E-09		7E-10							
Dibenz(a,h)anthracene	1.10E-01		18.00 M	ND	ND			2E-07									
Fluoranthene		2400	200.00 M	111	ND				0.0001		0.00005						
Fluorene		2400	2.00 M	ND	ND				0.000001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		81.00 M	41.8	ND			7E-08		4E-08							
Naphthalene	2.00E+00	130	4.50 M	4.1	ND			2E-09	0.00003	2E-09	0.00003						
Phenanthrene	not available		81.00 M	43.7	ND												
Pyrene		1800	210.00 M	124	ND				0.0001		0.0001						
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-06**	**0.19**	**7E-07**	**0.09**	**2E-08**	**0.10**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	60.60 M	18.70	11.60			**0.2**	**0.05**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404211E

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.80	M	4.58		3.05					0.1		0.1		0.1				
Copper		3100	12.90	M	15.7		15.5					0.004		0.005		0.005				
Zinc		23000	119.00	M	56.8		48.8					0.005		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.10	M	ND		ND				1E-10	0.000001								
2-Methylnaphthalene		240	3.70	M	ND		ND					0.00002								
Acenaphthene		3600	9.50	M	2.02		ND					0.000003		0.0000006						
Anthracene		18000	23.00	M	8.29		ND					0.000001		0.0000005						
Benzo(a)anthracene	1.10E+00		120.00	M	60.9		40.4				1E-07		6E-08		4E-08					
Benzo(a)pyrene	1.10E-01	18	130.00	M	19.9		ND				1E-06	0.01	2E-07	0.001						
Benzo(b)fluoranthene	1.10E+00		160.00	M	51.2		28.7				1E-07		5E-08		3E-08					
Benzo(g,h,i)perylene	not available				23.7		ND													
Benzo(k)fluoranthene	1.10E+01		92.00	M	13.5		9.35				8E-09		1E-09		9E-10					
Chrysene	1.10E+02		190.00	M	ND		ND				2E-09									
Dibenz(a,h)anthracene	1.10E-01		21.00	M	22.1		ND				2E-07		2E-07							
Fluoranthene		2400	230.00	M	66.7		17.2					0.0001		0.00003		0.000007				
Fluorene		2400	4.20	M	ND		ND					0.000002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		86.00	M	22.6		ND				8E-08		2E-08							
Naphthalene	2.00E+00	130	7.30	M	3.63		ND				4E-09	0.0001	2E-09	0.00003						
Phenanthrene	not available		110.00	M	33.6		7.48													
Pyrene		1800	260.00	M	60.7		ND					0.0001		0.00003						
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**2E-06**	**0.1**	**5E-07**	**0.2**	**6E-08**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	26.10	M	21.30	12.30			**0.07**	**0.05**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404212

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)**		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					EPC$_{DU1}$/ RSL$_c$*1x10^{-6}	EPC$_{DU1}$/RSL$_{nc}$	EPC$_{DU2}$/ RSL$_c$*1x10^{-6}	EPC$_{DU2}$/RSL$_{nc}$	EPC$_{DU3}$/ RSL$_c$*1x10^{-6}	EPC$_{DU3}$/RSL$_{nc}$	EPC$_{DU4}$/ RSL$_c$*1x10^{-6}	EPC$_{DU4}$/RSL$_{nc}$	EPC$_{DU5}$/ RSL$_c$*1x10^{-6}	EPC$_{DU5}$/RSL$_{nc}$
Antimony		31	7.48						0.2		-		-		-		-
Copper		3100	27.9						0.009		-		-		-		-
Zinc		23000	68.1						0.003		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					(EPC$_{DU1}$x0.001) / RSL$_c$*1x10^{-6}	EPC$_{DU1}$x0.001/ RSL$_{nc}$	EPC$_{DU2}$ x0.001/ RSL$_c$*1x10^{-6}	EPC$_{DU2}$/ RSL$_{nc}$	(EPC$_{DU3}$x0.001) / RSL$_c$*1x10^{-6}	EPC$_{DU3}$x0.001/ RSL$_{nc}$	EPC$_{DU4}$ x0.001/ RSL$_c$*1x10^{-6}	EPC$_{DU4}$/ RSL$_{nc}$	EPC$_{DU5}$ x0.001/ RSL$_c$*1x10^{-6}	EPC$_{DU5}$/ RSL$_{nc}$
Acenaphthene		3600	1.49						0.0000004								
Anthracene		18000	9.76						0.0000005								
Benzo(a)anthracene	1.10E+00		74.2					7E-08									
Benzo(a)pyrene	1.10E-01	18	40.2					4E-07	0.002								
Benzo(b)fluoranthene	1.10E+00		45.8					4E-08									
Benzo(g,h,i)perylene	not available		39.2														
Benzo(k)fluoranthene	1.10E+01		20.8					2E-09									
Chrysene	1.10E+02		53.9					5E-10									
Dibenz(a,h)anthracene	1.10E-01		11.1					1E-07									
Fluoranthene		2400	110						0.00005								
Naphthalene	2.00E+00	130	4.46					2E-09	0.00003								
Phenanthrene	not available		51.1														
Pyrene		1800	93.7						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**6E-07**	**0.3**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					EPC$_{DU1}$/RSL$_{res-lead}$	EPC$_{DU2}$/RSL$_{res-lead}$	EPC$_{DU3}$/RSL$_{res-lead}$	EPC$_{DU4}$/RSL$_{res-lead}$	EPC$_{DU5}$/RSL$_{res-lead}$
Lead	400	188.00					**0.5**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404237A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	2.70 M	5.00 M	2.50 M	5.29	6.87		0.1		0.2		0.08		0.2		0.2
Copper		3100	12.20 M	12.30 M	12.00 M	10.6	7.71		0.004		0.00		0.004		0.003		0.002
Zinc		23000	58.10 M	42.40 M	43.90 M	39.1	31.4		0.003		0.002		0.002		0.002		0.001
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	20.00 M	5.00 M	1.30 M	ND	ND	1E-09	0.000005	3E-10	0.000001	7E-11	0.0000003				
2-Methylnaphthalene		240	32.00 M	7.20 M	2.00 M	ND	ND		0.0001		0.00003		0.000008				
Acenaphthene		3600	98.00 M	27.00 M	6.10 M	ND	ND		0.00003		0.000008		0.000002				
Acenaphthylene	not available		2.90 M	1.00 M	ND	ND	ND										
Anthracene		18000	230.00 M	77.00 M	11.00 M	3.90	2.10		0.00001		0.000004		0.000001		0.0000002		0.0000001
Benzo(a)anthracene	1.10E+00		2000.00 M	640.00 M	63.00 M	ND	ND	2E-06		6E-07		6E-08					
Benzo(a)pyrene	1.10E-01	18	1700.00 M	540.00 M	57.00 M	22.3	15.3	2E-05	0.09	5E-06	0.03	5E-07	0.003	2E-07	0.001	1E-07	0.001
Benzo(b)fluoranthene	1.10E+00		2100.00 M	760.00 M	90.00 M	50.9	46.4	2E-06		7E-07		8E-08		5E-08		4E-08	
Benzo(g,h,i)perylene	not available		1200.00 M	490.00 M	50.00 M	ND	ND										
Benzo(k)fluoranthene	1.10E+01		1100.00 M	530.00 M	52.00 M	49.0	43.2	1E-07		5E-08		5E-09					
Chrysene	1.10E+02		2400.00 M	890.00 M	100.00 M	20.7	13.7	2E-08		8E-09		9E-10		2E-10		1E-10	
Dibenz(a,h)anthracene	1.10E-01		340.00 M	130.00 M	8.60 M	ND	ND	3E-06		1E-06		8E-08					
Fluoranthene		2400	3100.00 M	1100.00 M	140.00 M	47.8	26.3		0.001		0.0005		0.0001		0.00002		0.00001
Fluorene		2400	35.00 M	15.00 M	3.00 M	ND	ND		0.00001		0.000006		0.0000				
Indeno(1,2,3-c,d)pyrene	1.10E+00		1200.00 M	420.00 M	47.00 M	15.0	11.4	1E-06		4E-07		4E-08		1E-08		1E-08	
Naphthalene	2.00E+00	130	83.00 M	17.00 M	4.20 M	0.800	NA	4E-08	0.0006	9E-09	0.0001	2E-09	0.0000	4E-10	0.00001		
Phenanthrene	not available		1200.00 M	510.00 M	65.00 M	23.7	13.1										
Pyrene		1800	3400.00 M	1200.00 M	140.00 M	41.9	17.9		0.002		0.0007		0.0001		0.00002		0.00001
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-05**	**0.2**	**8E-06**	**0.2**	**8E-07**	**0.09**	**3E-07**	**0.2**	**2E-07**	**0.2**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	28.00 M	14.60 M	10.50 M	11.40	8.77	**0.07**	**0.04**	**0.03**	**0.03**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404240

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	8.88						0.3		-		-		-		-
Copper		3100	14.3						0.005		-		-		-		-
Zinc		23000	73.4						0.003		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.30					7E-11	0.00000								
2-Methylnaphthalene		240	2.74						0.00001								
Acenaphthene		3600	5.60						0.000002								
Anthracene		18000	19.2						0.000001								
Benzo(a)anthracene	1.10E+00		66.1					6E-08									
Benzo(a)pyrene	1.10E-01	18	23.6					2E-07	0.001								
Benzo(b)fluoranthene	1.10E+00		66.3					6E-08									
Benzo(g,h,i)perylene	not available		30.5														
Benzo(k)fluoranthene	1.10E+01		17.2					2E-09									
Chrysene	1.10E+02		52.9					5E-10									
Dibenz(a,h)anthracene	1.10E-01		36.7					3E-07									
Fluoranthene		2400	74.9						0.00003								
Fluorene		2400	2.74														
Indeno(1,2,3-c,d)pyrene	1.10E+00		82.1					7E-08									
Naphthalene	2.00E+00	130	5.67					3E-09	0.00004								
Phenanthrene	not available		31.6														
Pyrene		1800	71.4						0.00004								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-07**	**0.3**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	10.50					**0.03**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404281

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	7.02						0.2		-		-		-		-
Copper		3100	9.79						0.003		-		-		-		-
Zinc		23000	123						0.005		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
2-Methylnaphthalene		240	4.77						0.00002								
Anthracene		18000	3.80						0.0000002								
Benzo(a)pyrene	1.10E-01	18	24.3					2E-07	0.001								
Benzo(b)fluoranthene	1.10E+00		49.4					4E-08									
Benzo(k)fluoranthene	1.10E+01		45.8					4E-09									
Chrysene	1.10E+02		20.1					2E-10									
Fluoranthene		2400	44.5						0.00002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		12.3					1E-08									
Naphthalene	2.00E+00	130	3.50					2E-09	0.00003								
Phenanthrene	not available		21.1														
Pyrene		1800	19.0						0.0000								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-07**	**0.2**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	15.20					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404282A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	13.5						0.4								
Copper		3100	69.0						0.02								
Zinc		23000	70.6						0.003								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	16.5					9E-10	0.000004								
2-Methylnaphthalene		240	13.2						0.00006								
Acenaphthene		3600	13.8						0.000004								
Anthracene		18000	13.1						0.0000007								
Benzo(a)anthracene	1.10E+00		243					2E-07									
Benzo(a)pyrene	1.10E-01	18	74.1					7E-07	0.004								
Benzo(b)fluoranthene	1.10E+00		418					4E-07									
Benzo(g,h,i)perylene	not available		76.1														
Benzo(k)fluoranthene	1.10E+01		152					1E-08									
Chrysene	1.10E+02		129					1E-09									
Dibenz(a,h)anthracene	1.10E-01		23.8					2E-07									
Fluoranthene		2400	162						0.0001								
Fluorene		2400	13.6						0.000006								
Indeno(1,2,3-c,d)pyrene	1.10E+00		327					3E-07									
Naphthalene	2.00E+00	130	12.6					6E-09	0.0001								
Phenanthrene	not available		66.7														
Pyrene		1800	186						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-06**	**0.5**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	462.00					**1.2**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404282A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.87						0.2								
Copper		3100	13.2						0.004								
Zinc		23000	60.9						0.003								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	16.8					9E-10	0.000004								
2-Methylnaphthalene		240	13.7						0.00006								
Acenaphthene		3600	16.8						0.000005								
Acenaphthylene	not available		16.8														
Anthracene		18000	11.4						0.0000006								
Benzo(a)anthracene	1.10E+00		220					2E-07									
Benzo(a)pyrene	1.10E-01	18	50.7					5E-07	0.003								
Benzo(b)fluoranthene	1.10E+00		388					4E-07									
Benzo(g,h,i)perylene	not available		48.7														
Benzo(k)fluoranthene	1.10E+01		136					1E-08									
Chrysene	1.10E+02		86.5					8E-10									
Dibenz(a,h)anthracene	1.10E-01		13.1					1E-07									
Fluoranthene		2400	122						0.00005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		289					3E-07									
Naphthalene	2.00E+00	130	13.7					7E-09	0.0001								
Phenanthrene	not available		43.0														
Pyrene		1800	120						0.00007								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.20**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	51.40					**0.1**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404282B(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.52						0.1								
Copper		3100	15.5						0.005								
Zinc		23000	65.9						0.003								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.49					8E-11	0.0000004								
2-Methylnaphthalene		240	7.34						0.00003								
Anthracene		18000	3.58						0.0000002								
Benzo(a)anthracene	1.10E+00		22.4					2E-08									
Benzo(a)pyrene	1.10E-01	18	14.6					1E-07	0.0008								
Benzo(b)fluoranthene	1.10E+00		19					2E-08									
Chrysene	1.10E+02		33.6					3E-10									
Fluoranthene		2400	26.2						0.00001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		1.49					1E-09									
Naphthalene	2.00E+00	130	7.78					4E-09	0.00006								
Phenanthrene	not available		8.34														
Pyrene		1800	38.6						0.00002								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-07**	**0.2**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	15.50					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404484

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.40 M	3.200 M	2.600 M	6.45	4.66		0.2		0.1		0.08		0.2		0.2
Copper		3100	24.90 M	16.30 M	14.80 M	11.8	10.4		0.008		0.005		0.005		0.004		0.003
Zinc		23000	79.70 M	52.60 M	53.30 M	45.1	40.9		0.003		0.002		0.002		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.200 M	7.500 M	ND	ND	54.7	2E-10	0.00000	4.17E-10	0.000002					3.04E-09	0.00001
2-Methylnaphthalene		240	ND	29.00 M	ND	ND	ND				0.0001						
Acenaphthene		3600	13.00 M	44.00 M	ND	3.99	79.4		0.000004		0.00001				0.000001		0.00002
Acenaphthylene	not available		ND	ND	ND	ND	464										
Anthracene		18000	39.00 M	140.00 M	ND	19.2	291		0.000002		0.000008				0.000001		0.00002
Benzo(a)anthracene	1.10E+00		350.00 M	850.00 M	37.00 M	106	745	3E-07		8E-07		3E-08		1E-07		7E-07	
Benzo(a)pyrene	1.10E-01	18	350.00 M	610.00 M	9.60 M	45.5	274	3E-06	0.019	6E-06	0.034	9E-08	0.0005	4E-07	0.003	2E-06	0.02
Benzo(b)fluoranthene	1.10E+00		530.00 M	1300.00 M	ND	83.9	209	5E-07		1E-06				8E-08		2E-07	
Benzo(g,h,i)perylene	not available		280.00 M	610.00 M	9.90 M	43.2	534										
Benzo(k)fluoranthene	1.10E+01		110.00 M	360.00 M	ND	38.6	82.2	1E-08		3E-08				4E-09		7E-09	
Chrysene	1.10E+02		490.00 M	890.00 M	16.00 M	72.4	700	4E-09		8E-09		1E-10		7E-10		6E-09	
Dibenz(a,h)anthracene	1.10E-01		74.00 M	160.00 M	2.30 M	11.9	22.6	7E-07		1E-06		2E-08		1E-07		2E-07	
Fluoranthene		2400	620.00 M	1400.00 M	23.00 M	149	258		0.00026		0.0006		0.00001		0.0001		0.0001
Fluorene		2400	4.20 M	19.00 M	ND	2.56	29.3				0.000008				0.000001		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00		250.00 M	570.00 M	9.40 M	38.4	325	2E-07		5E-07		9E-09		3E-08		3E-07	
Naphthalene	2.00E+00	130	11.00 M	28.00 M	ND	2.76	773	6E-09	0.00008	1E-08	0.0002			1E-09	0.00002	4E-07	0.006
Phenanthrene	not available		260.00 M	620.00 M	9.40 M	83.4	190.00										
Pyrene		1800	630.00 M	1400.00 M	22.00 M	123	450.00		0.0004		0.0008		0.00001		0.00007		
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**5E-06**	**0.2**	**1E-05**	**0.15**	**2E-07**	**0.09**	**7E-07**	**0.22**	**4E-06**	**0.18**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	14.40 M	14.90 M	11.70 M	10.90	8.95	**0.04**	**0.04**	**0.03**	**0.03**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404485

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	10.3	7.05	8.99				0.332		0.2		0.3				
Copper		3100	13.2	11.8	13.8				0.004		0.004		0.004				
Zinc		23000	61.2	41.5	61.1				0.003		0.002		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	4.60	ND	ND			3E-10	0.00000								
2-Methylnaphthalene		240	8.47	2.82	ND						0.00001						
Acenaphthene		3600	13.8	5.51	ND				0.0000038		0.000002						
Anthracene		18000	44.6	10.1	ND				0.0000025		0.000001						
Benzo(a)anthracene	1.10E+00		298	93.7	4.16			3E-07		9E-08		4E-09					
Benzo(a)pyrene	1.10E-01	18	312	116	5.22			3E-06	0.017	1E-06	0.006	5E-08	0.00029				
Benzo(b)fluoranthene	1.10E+00		480	152	9.29			4E-07		1E-07		8E-09					
Benzo(g,h,i)perylene	not available		210	62.7	ND												
Benzo(k)fluoranthene	1.10E+01		112	59.7	ND			1E-08		5E-09							
Chrysene	1.10E+02		341	148	ND			3E-09		1E-09							
Dibenz(a,h)anthracene	1.10E-01		59	ND	ND			5E-07									
Fluoranthene		2400	585	169	11.4				0.00024		0.0001		0.00000475				
Fluorene		2400	4.50	ND	ND				0.00000								
Indeno(1,2,3-c,d)pyrene	1.10E+00		190	86.3	ND			2E-07		8E-08							
Naphthalene	2.00E+00	130	18.4	8.15	ND			9E-09	0.00014	4E-09	0.0001						
Phenanthrene	not available		279	61.2	4.4												
Pyrene		1800	537	188	7.67				0.0003		0.0001		4.26111E-06				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**4E-06**	**0.4**	**1E-06**	**0.2**	**6E-08**	**0.3**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	20.10	12.00	11.60			**0.05**	**0.03**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404486

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.17	5.48	6.35				0.2		0.2		0.20				
Copper		3100	13.4	15.1	16.2				0.004		0.00		0.005				
Zinc		23000	63.6	58.1	64.6				0.003		0.003		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	5.31	2.14	ND			3E-10	0.000001		0.0000005						
2-Methylnaphthalene		240	9.26	2.74	ND				0.00004		0.00001						
Acenaphthene		3600	20.7	5.79	3.22				0.000006		0.000002		0.000001				
Acenaphthylene	not available		2.44	ND	ND												
Anthracene		18000	65.0	21.3	6.07				0.000004		0.0000012		0.0000003				
Benzo(a)anthracene	1.10E+00		535	157	20.7			5E-07		1E-07		2E-08					
Benzo(a)pyrene	1.10E-01	18	512	203	24.0			5E-06	0.03	2E-06	0.011	2E-07	0.0013				
Benzo(b)fluoranthene	1.10E+00		845	286	38.3			8E-07		3E-07		3E-08					
Benzo(g,h,i)perylene	not available		380	174	ND												
Benzo(k)fluoranthene	1.10E+01		188	84.4	19.0			2E-08		8E-09		2E-09					
Chrysene	1.10E+02		557	234	3.22			5E-09		2E-09		3E-11					
Dibenz(a,h)anthracene	1.10E-01		115	12.9	ND			1E-06		1E-07							
Fluoranthene		2400	860	289	41.4				0.0004		0.0001		0.000017				
Fluorene		2400	7.21	3.04	NA				0.000003		0.000001						
Indeno(1,2,3-c,d)pyrene	1.10E+00		377	159	19.0			3E-07		1E-07		2E-08					
Naphthalene	2.00E+00	130	20.7	5.57	ND			1E-08	0.0002	3E-09	0.00004						
Phenanthrene	not available		370	115	17.5												
Pyrene		1800	866	262	39.9				0.0005		0.0001		0.00002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-06**	**0.2**	**3E-06**	**0.2**	**3E-07**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	20.50	14.70	12.60			**0.05**	**0.04**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404559

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration						DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg						$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.14							0.2		-		-		-		-
Copper		3100	16.1							0.005		-		-		-		-
Zinc		23000	93.0							0.004		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg						$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU2}/\ RSL_{nc}$	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU4}/\ RSL_{nc}$	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU5}/\ RSL_{nc}$
1-Methylnaphthalene	1.80E+01	4200	2.74						2E-10	0.0000007								
2-Methylnaphthalene		240	6.02							0.00003								
Acenaphthene		3600	6.18							0.000002								
Anthracene		18000	11.9							0.0000007								
Benzo(a)anthracene	1.10E+00		110						1E-07									
Benzo(a)pyrene	1.10E-01	18	63.3						6E-07	0.004								
Benzo(b)fluoranthene	1.10E+00		114						1E-07									
Benzo(g,h,i)perylene	not available		72.0															
Benzo(k)fluoranthene	1.10E+01		81.3						7E-09									
Chrysene	1.10E+02		135						1E-09									
Dibenz(a,h)anthracene	1.10E-01		35.1						3E-07									
Fluoranthene		2400	149							0.00006								
Indeno(1,2,3-c,d)pyrene	1.10E+00		103						9E-08									
Naphthalene	2.00E+00	130	6.85						3E-09	0.00005								
Phenanthrene	not available		61.7															
Pyrene		1800	188							0.0001								
									DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates									**1E-06**	**0.2**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	67.60					**0.2**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404561C

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.10 M	2.40 M	1.90 M	2.35	3.76		0.1		0.1		0.06		0.1		0.1
Copper		3100	15.40 M	12.10 M	13.30 M	11.3	8.52		0.005		0.004		0.004		0.004		0.003
Zinc		23000	52.60 M	47.10 M	51.50 M	45.9	36.3		0.002		0.002		0.002		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	11.00 M	2.90 M	16.00 M	ND	1.13	6E-10	0.000003	2E-10	0.000001	9E-10	0.0000038			6E-11	0.0000003
2-Methylnaphthalene		240	18.00 M	6.10 M	24.00 M	ND	5.64		0.0001		0.00003		0.00010				0.00002
Acenaphthene		3600	65.00 M	19.00 M	110.00 M	4.88	4.95		0.00002		0.00001		0.00003		0.000001		0.000001
Acenaphthylene	not available		1.10	ND	ND	ND	16.0										
Anthracene		18000	120.00 M	85.00 M	120.00 M	33.3	6.90		0.00001		0.000005		0.000007		0.000002		0.0000004
Benzo(a)anthracene	1.10E+00		890.00 M	470.00 M	730.00 M	139	33.9	8E-07		4E-07		7E-07					
Benzo(a)pyrene	1.10E-01	18	870.00 M	320.00 M	430.00 M	89.5	18.1	8E-06	0.05	3E-06	0.02	4E-06	0.02	8E-07	0.005	2E-07	0.001
Benzo(b)fluoranthene	1.10E+00		1200.00 M	690.00 M	1000.00 M	194	40.7	1E-06		6E-07		9E-07		2E-07		4E-08	
Benzo(g,h,i)perylene	not available		640.00 M	350.00 M	460.00 M	95.9	21.8										
Benzo(k)fluoranthene	1.10E+01		460.00 M	200.00 M	300.00 M	61.9	26.5	4E-08		2E-08		3E-08		6E-09		2E-09	
Chrysene	1.10E+02		1300.00 M	560.00 M	1000.00 M	165	49.4	1E-08		5E-09		9E-09		2E-09		4E-10	
Dibenz(a,h)anthracene	1.10E-01		180.00 M	85.00 M	130.00 M	27.0	14.0	2E-06		8E-07		1E-06		2E-07		1E-07	
Fluoranthene		2400	1400.00 M	830.00 M	1200.00 M	300	54.9		0.001		0.0003		0.0005		0.00013		0.00002
Fluorene		2400	30.00 M	15.00 M	42.00 M	8.63	3.65		0.00001		0.00001		0.00002		0.000004		0.000002
Indeno(1,2,3-c,d)pyrene	1.10E+00		590.00 M	300.00 M	400.00 M	90.7	28.2	5E-07		3E-07		4E-07		8E-08		3E-08	
Naphthalene	2.00E+00	130	44.00 M	15.00 M	67.00 M	5.29	6.56	2E-08	0.0003	8E-09	0.0001	3E-08	0.001	3E-09	0.00004		0.00005
Phenanthrene	not available		640.00 M	380.00 M	650.00 M	147	30.1										
Pyrene		1800	1600.00 M	920.00 M	1500.00 M	278	66.8		0.001		0.001		0.0008		0.0002		0.0000
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.2**	**5E-06**	**0.1**	**7E-06**	**0.1**	**1E-06**	**0.09**	**4E-07**	**0.1**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	16.80 M	16.20 M	13.40 M	11.60	8.50	**0.04**	**0.04**	**0.03**	**0.03**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404570

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.10 M						0.1		-		-		-		-
Copper		3100	11.30 M						0.004		-		-		-		-
Zinc		23000	72.00 M						0.003		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.50 M					2E-10	0.0000008								
2-Methylnaphthalene		240	5.50 M						0.00002								
Acenaphthene		3600	11.00 M						0.000003								
Anthracene		18000	30.00 M						0.000002								
Benzo(a)anthracene	1.10E+00		260.00 M					2E-07									
Benzo(a)pyrene	1.10E-01	18	290.00 M					3E-06	0.02								
Benzo(b)fluoranthene	1.10E+00		430.00 M					4E-07									
Benzo(k)fluoranthene	1.10E+01		76.00 M					7E-09									
Chrysene	1.10E+02		400.00 M					4E-09									
Dibenz(a,h)anthracene	1.10E-01		54.00 M					5E-07									
Fluoranthene		2400	450.00 M						0.0002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		190.00 M					2E-07									
Naphthalene	2.00E+00	130	11.00 M					6E-09	0.00008								
Phenanthrene	not available		170.00 M														
Pyrene		1800	530.00 M						0.0003								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**4E-06**	**0.1**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	16.20 M					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404571

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	11.8						0.4		-		-		-		-
Copper		3100	16.9						0.005		-		-		-		-
Zinc		23000	109						0.005		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.42					2E-10	0.0000008								
2-Methylnaphthalene		240	5.76						0.00002								
Acenaphthene		3600	5.18						0.000001								
Anthracene		18000	10.3						0.0000006								
Benzo(a)anthracene	1.10E+00		105					1E-07									
Benzo(a)pyrene	1.10E-01	18	63.0					6E-07	0.004								
Benzo(b)fluoranthene	1.10E+00		122					1E-07									
Benzo(g,h,i)perylene	not available		71.4														
Benzo(k)fluoranthene	1.10E+01		71.1					6E-09									
Chrysene	1.10E+02		147					1E-09									
Dibenz(a,h)anthracene	1.10E-01		55.4					5E-07									
Fluoranthene		2400	129						0.00005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		70.7					6E-08									
Naphthalene	2.00E+00	130	7.6					4E-09	0.00006								
Phenanthrene	not available		57.0														
Pyrene		1800	159						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.4**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	19.30					**0.05**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404572

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								EPC_{DU1}/ RSL_c*1x10^{-6}	EPC_{DU1}/RSL_{nc}	EPC_{DU2}/ RSL_c*1x10^{-6}	EPC_{DU2}/RSL_{nc}	EPC_{DU3}/ RSL_c*1x10^{-6}	EPC_{DU3}/RSL_{nc}	EPC_{DU4}/ RSL_c*1x10^{-6}	EPC_{DU4}/RSL_{nc}	EPC_{DU5}/ RSL_c*1x10^{-6}	EPC_{DU5}/RSL_{nc}
Antimony		31	5.79		9.69		4.83					0.2		0.3		0.2				
Copper		3100	20.2		19.9		14.0					0.007		0.01		0.005				
Zinc		23000	65.4		52.0		50.0					0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}	EPC_{DU1}x0.001/ RSL_{nc}	EPC_{DU2} x0.001/ RSL_c*1x10^{-6}	EPC_{DU2}/ RSL_{nc}	(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}	EPC_{DU3}x0.001/ RSL_{nc}	EPC_{DU4} x0.001/ RSL_c*1x10^{-6}	EPC_{DU4}/ RSL_{nc}	EPC_{DU5} x0.001/ RSL_c*1x10^{-6}	EPC_{DU5}/ RSL_{nc}
Acenaphthene		3600	3.55		8.48		ND					0.000001		0.000002						
Anthracene		18000	6.25		ND		ND					0.000000								
Benzo(a)anthracene	1.10E+00		96.1		85.7		5.10				9E-08		8E-08		5E-09					
Benzo(a)pyrene	1.10E-01	18	95.5		49.9		5.60				9E-07	0.01	5E-07	0.003	5E-08	0.0003				
Benzo(b)fluoranthene	1.10E+00		106		104		32.0				1E-07		9E-08		3E-08					
Benzo(g,h,i)perylene	not available		93.2		49.2		6.13													
Benzo(k)fluoranthene	1.10E+01		108		41.8		ND				1E-08		4E-09							
Chrysene	1.10E+02		98.5		108		11.9				9E-10		1E-09		1E-10					
Dibenz(a,h)anthracene	1.10E-01		28.0		13.3		NA				3E-07		1E-07							
Fluoranthene		2400	118		114		9.64					0.00005		0.00005		0.000004				
Fluorene		2400	1.31		ND		ND					0.0000005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		76.7		44.4		8.28				7E-08		4E-08		8E-09					
Naphthalene	2.00E+00	130	3.28		4.80		ND				2E-09	0.00003	2E-09	0.00004						
Phenanthrene	not available		38.1		38.6		ND													
Pyrene		1800	116		134		11.5					0.0001		0.00007		0.000006				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**1E-06**	**0.2**	**8E-07**	**0.3**	**9E-08**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	216.00	213.00	12.40			**0.5**	**0.5**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404639

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	2.10 M						0.1		-		-		-		-
Copper		3100	8.40 M						0.003		-		-		-		-
Zinc		23000	37.30 M						0.002		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.10 M					2E-10	0.0000007								
2-Methylnaphthalene		240	6.50 M						0.00003								
Acenaphthene		3600	14.00 M						0.000004								
Anthracene		18000	47.00 M						0.000003								
Benzo(a)anthracene	1.10E+00		420.00 M					4E-07									
Benzo(a)pyrene	1.10E-01	18	290.00 M					3E-06	0.016								
Benzo(b)fluoranthene	1.10E+00		560.00 M					5E-07									
Benzo(g,h,i)perylene	not available		300.00 M														
Benzo(k)fluoranthene	1.10E+01		240.00 M					2E-08									
Chrysene	1.10E+02		450.00 M					4E-09									
Dibenz(a,h)anthracene	1.10E-01		79.00 M					7E-07									
Fluoranthene		2400	710.00 M						0.0003								
Indeno(1,2,3-c,d)pyrene	1.10E+00		290.00 M					3E-07									
Naphthalene	2.00E+00	130	15.00 M					8E-09	0.00012								
Phenanthrene	not available		300.00 M														
Pyrene		1800	740.00 M						0.0004								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**5E-06**	**0.1**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	40.60 M					**0.10**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404640

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.00 M						0.1		-		-		-		-
Copper		3100	9.90 M						0.003		-		-		-		-
Zinc		23000	45.10 M						0.002		-		-		-		-
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	110.00 M					6E-09	0.00003								
2-Methylnaphthalene		240	160.00 M						0.0007								
Acenaphthene		3600	550.00 M						0.0002								
Anthracene		18000	1200.00 M						0.00007								
Benzo(a)anthracene	1.10E+00		8000.00 M					7E-06									
Benzo(a)pyrene	1.10E-01	18	5700.00 M					5E-05	0.3								
Benzo(b)fluoranthene	1.10E+00		13000.00 M					1E-05									
Benzo(g,h,i)perylene	not available		6000.00 M														
Benzo(k)fluoranthene	1.10E+01		4200.00 M					4E-07									
Chrysene	1.10E+02		11000.00 M					1E-07									
Dibenz(a,h)anthracene	1.10E-01		1600.00 M					1E-05									
Fluoranthene		2400	14000.00 M						0.006								
Indeno(1,2,3-c,d)pyrene	1.10E+00		5100.00 M					5E-06									
Naphthalene	2.00E+00	130	460.00 M					2E-07	0.004								
Phenanthrene	not available		6200.00 M														
Pyrene		1800	16000.00 M						0.009								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**9E-05**	**0.5**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	108.00 M					**0.3**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404643

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31				5.9	6.87								0.2		0.2
Copper		3100				9.74	8.67								0.003		0.003
Zinc		23000				37.4	31.1								0.002		0.001
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU2}/\ RSL_{nc}$	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU4}/\ RSL_{nc}$	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU5}/\ RSL_{nc}$
Anthracene		18000				5.60	ND								0.0000003		
Benzo(a)anthracene	1.10E+00					8.90	ND							8E-09			
Benzo(a)pyrene	1.10E-01	18				40.0	16.2							4E-07	0.002	1E-07	0.001
Benzo(b)fluoranthene	1.10E+00					81.9	34.6							7E-08		3E-08	
Benzo(g,h,i)perylene	not available					18.0	ND										
Benzo(k)fluoranthene	1.10E+01					93.1	ND							8E-09			
Chrysene	1.10E+02					48.0	ND							4E-10			
Fluoranthene		2400				67.2	23.4								0.00003		0.00001
Indeno(1,2,3-c,d)pyrene	1.10E+00					30.2	ND							3E-08			
Naphthalene	2.00E+00	130				1.70	ND							9E-10	0.00001		
Phenanthrene	not available					31.3	10.9										
Pyrene		1800				63.7	NA								0.00004		
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates														**5E-07**	**0.2**	**2E-07**	**0.2**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400				10.10	8.82				**0.03**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404653

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	2.40	M	3.49		2.06					0.08		0.1		0.07				
Copper		3100	10.10	M	13.0		12.3					0.003		0.004		0.004				
Zinc		23000	60.70	M	51.9		49.3					0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	33.00	M	NA		ND				2E-09	0.000008								
2-Methylnaphthalene		240	53.00	M	29.2		ND					0.0002		0.0001						
Acenaphthene		3600	200.00	M	136		ND					0.00006		0.00004						
Acenaphthylene	not available		4.50	M	70.3		ND													
Anthracene		18000	340.00	M	208		185					0.00002		0.00001						
Benzo(a)anthracene	1.10E+00		3600.00	M	1,380		76.8				3E-06		1E-06		7E-08					
Benzo(a)pyrene	1.10E-01	18	2500.00	M	1,020		290				2E-05	0.14	9E-06	0.06	3E-06	0.02				
Benzo(b)fluoranthene	1.10E+00		5700.00	M	1,770		78				5E-06		2E-06		7E-08					
Benzo(g,h,i)perylene	not available		2700.00	M	1,040		117													
Benzo(k)fluoranthene	1.10E+01		1700.00	M	877		156				2E-07		8E-08		1E-08					
Chrysene	1.10E+02		3900.00	M	1,890		119				4E-08		2E-08		1E-09					
Dibenz(a,h)anthracene	1.10E-01		700.00	M	238		185				6E-06		2E-06		2E-06					
Fluoranthene		2400	4900.00	M	2,890		ND					0.002		0.001						
Fluorene		2400	62.00	M	ND		202					0.00003								
Indeno(1,2,3-c,d)pyrene	1.10E+00		2400.00	M	878		ND				2E-06		8E-07							
Naphthalene	2.00E+00	130	180.00	M	81.3		78.8				9E-08	0.001	4E-08	0.0006						
Phenanthrene	not available		2200.00	M	1,640		188													
Pyrene		1800	6100.00	M	2,870		130.00					0.003		0.002		0.00007				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**4E-05**	**0.2**	**2E-05**	**0.2**	**4E-06**	**0.09**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	31.10	M	49.60	11.20			**0.08**	**0.12**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404655A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.61	3.42	3.81				0.2		0.0001		0.0001				
Copper		3100	10.3	12.4	13.1				0.003		0.000004		0.000004				
Zinc		23000	54.8	44.5	47.8				0.002		0.000002		0.000002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.68	14.3	ND			2E-10	0.0000009								
2-Methylnaphthalene		240	7.11	14.3	ND				0.00003								
Acenaphthene		3600	13.3	14.1	ND				0.000004		0.000004						
Acenaphthylene	not available		ND	14.3	ND												
Anthracene		18000	38.6	14.3	ND				0.000002								
Benzo(a)anthracene	1.10E+00		299	291	21.5			3E-07		3E-07		2E-08					
Benzo(a)pyrene	1.10E-01	18	244	95.7	10.3			2E-06	0.01	9E-07	0.005	9E-08	0.0006				
Benzo(b)fluoranthene	1.10E+00		487	447	32.4			4E-07		4E-07		3E-08					
Benzo(g,h,i)perylene	not available		242	105	9.65												
Benzo(k)fluoranthene	1.10E+01		182	176	14.6			2E-08		2E-08		1E-09					
Chrysene	1.10E+02		400	179	13.5			4E-09		2E-09		1E-10					
Dibenz(a,h)anthracene	1.10E-01		64.5	112	14			6E-07		1E-06		1E-07					
Fluoranthene		2400	502	277	24.6				0.0002		0.0001		0.00001				
Fluorene		2400	6.67	14.3	ND				0.000003								
Indeno(1,2,3-c,d)pyrene	1.10E+00		222	311	21.1			2E-07		3E-07		2E-08					
Naphthalene	2.00E+00	130	17.7	14.3	ND			9E-09	0.0001								
Phenanthrene	not available		224	93.1	8.42												
Pyrene		1800	567	225	19.7				0.0003		0.0001		0.00001				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**4E-06**	**0.2**	**3E-06**	**0.006**	**3E-07**	**0.001**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	408.00	19.20	12.60			**1.0**	**0.05**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404655A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.00 M	5.60	3.32				0.1		0.2		0.1				
Copper		3100	10.90 M	12.3	12.7				0.004		0.004		0.004				
Zinc		23000	74.10 M	52.5	46.7				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/ RSL_{nc}$	$EPC_{DU2}\,x0.001/ RSL_c*1x10^{-6}$	EPC_{DU2}/ RSL_{nc}	$(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/ RSL_{nc}$	$EPC_{DU4}\,x0.001/ RSL_c*1x10^{-6}$	EPC_{DU4}/ RSL_{nc}	$EPC_{DU5}\,x0.001/ RSL_c*1x10^{-6}$	EPC_{DU5}/ RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.90 M	ND	ND			2E-10	0.0000007								
2-Methylnaphthalene		240	5.90 M	18.1	ND				0.00002		0.00008						
Acenaphthene		3600	12.00 M	48.3	ND				0.000003		0.00001						
Acenaphthylene	not available		ND	81.0	ND												
Anthracene		18000	38.00 M	NA	3.63				0.000002				0.0000002				
Benzo(a)anthracene	1.10E+00		330.00 M	302	41.7			3E-07		3E-07		4E-08					
Benzo(a)pyrene	1.10E-01	18	240.00 M	165	9.82			2E-06	0.01	2E-06	0.009	9E-08	0.0005				
Benzo(b)fluoranthene	1.10E+00		450.00 M	492	53.7			4E-07		4E-07		5E-08					
Benzo(g,h,i)perylene	not available		250.00 M	158	28.2												
Benzo(k)fluoranthene	1.10E+01		220.00 M	202	29.9			2E-08		2E-08		3E-09					
Chrysene	1.10E+02		420.00 M	282	29.3			4E-09		3E-09		3E-10					
Dibenz(a,h)anthracene	1.10E-01		65.00 M	133	19.4			6E-07		1E-06		2E-07					
Fluoranthene		2400	550.00 M	364	44.9				0.0002		0.0002		0.00002				
Fluorene		2400	6.50 M	ND	ND				0.000003								
Indeno(1,2,3-c,d)pyrene	1.10E+00		220.00 M	275	37.9			2E-07		3E-07		3E-08					
Naphthalene	2.00E+00	130	11.00 M	38.1	ND			6E-09	0.0001	2E-08	0.0003						
Phenanthrene	not available		230.00 M	131	21.7												
Pyrene		1800	610.00 M	393	42.7				0.0003		0.0002		0.00002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**4E-06**	**0.12**	**4E-06**	**0.197**	**4E-07**	**0.114**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	24.60 M	59.80	11.00			**0.1**	**0.1**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404687

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.50	M	4.56	M	3.82	M				0.1		0.1		0.1				
Copper		3100	11.40	M	9.41	M	10.2	M				0.004		0.003		0.003				
Zinc		23000	52.90	M	37.4	M	39.8	M				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	6.80	M	16.8		ND				4E-10	0.000002								
2-Methylnaphthalene		240	9.50	M	16.8		ND					0.00004								
Acenaphthene		3600	24.00	M	14.8		ND					0.00001								
Anthracene		18000	59.00	M	16.8		ND					0.00000								
Benzo(a)anthracene	1.10E+00		570.00	M	307		27.7				5E-07		3E-07		3E-08					
Benzo(a)pyrene	1.10E-01	18	420.00	M	101		12.9				4E-06	0.02	9E-07	0.006	1E-07	0.0007				
Benzo(b)fluoranthene	1.10E+00		900.00	M	474		39				8E-07		4E-07		4E-08					
Benzo(g,h,i)perylene	not available		470.00	M	97.8		11.5													
Benzo(k)fluoranthene	1.10E+01		300.00	M	228		17.5				3E-08		2E-08		2E-09					
Chrysene	1.10E+02		800.00	M	153		18.4				7E-09		1E-09		2E-10					
Dibenz(a,h)anthracene	1.10E-01		120.00	M	115		7.46				1E-06		1E-06							
Fluoranthene		2400	970.00	M	241		34.5					0.0004		0.0001		0.00001				
Fluorene		2400	9.70	M	16.8		ND					0.000004								
Indeno(1,2,3-c,d)pyrene	1.10E+00		410.00	M	360		22.8				4E-07		3E-07		2E-08					
Naphthalene	2.00E+00	130	24.00	M	14.3		ND				1E-08	0.0002	7E-09	0.0001						
Phenanthrene	not available		420.00	M	84.2		17.5													
Pyrene		1800	1100.00	M	199		30.2					0.001		0.0001		0.00002				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**7E-06**	**0.1**	**3E-06**	**0.2**	**2E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	22.90	M	12.10	9.04			**0.06**	**0.03**	**0.02**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405150

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.00	7.47	4.71				0.2		0.2		0.2				
Copper		3100	15.0	23.6	11.6				0.005		0.008		0.004				
Zinc		23000	77.2	67.7	50.9				0.003		0.003		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.85	2.14	ND			2E-10	0.000001	1E-10	0.0000005						
2-Methylnaphthalene		240	3.65	3.39	1.97				0.00002		0.00001		0.000008				
Acenaphthene		3600	16.8	5.03	2.32				0.000005		0.000001		0.0000006				
Anthracene		18000	40.9	5.72	1.57				0.000002		0.0000003		0.0000001				
Benzo(a)anthracene	1.10E+00		226	49.7	17.2			2E-07		5E-08		2E-08					
Benzo(a)pyrene	1.10E-01	18	216	67.9	17.6			2E-06	0.01	6E-07	0.004	2E-07	0.0010				
Benzo(b)fluoranthene	1.10E+00		365	98.2	27.8			3E-07		9E-08		3E-08					
Benzo(g,h,i)perylene	not available		131	31.5	ND												
Benzo(k)fluoranthene	1.10E+01		104	26.2	15.5			9E-09		2E-09		1E-09					
Chrysene	1.10E+02		237	64.6	ND			2E-09		6E-10							
Dibenz(a,h)anthracene	1.10E-01		38.0	ND	ND			3E-07									
Fluoranthene		2400	496	111	37.4				0.00021		0.00005		0.00002				
Fluorene		2400	14.7	6.28	ND				0.000006		0.000003						
Indeno(1,2,3-c,d)pyrene	1.10E+00		123	50.0	12.2			1E-07		5E-08		1E-08					
Naphthalene	2.00E+00	130	6.99	2.76	2.32			3E-09	0.00005	1E-09	0.00002	1E-09	0.00002				
Phenanthrene	not available		293	47.5	15.1												
Pyrene		1800	422	104	32.6				0.0002		0.0001		0.00002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-06**	**0.21**	**8E-07**	**0.26**	**2E-07**	**0.159**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	17.70	14.00	10.40			**0.04**	**0.04**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405180A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.10 M	8.84	3.82				0.2		0.3		0.1				
Copper		3100	11.40 M	11.64	12.02				0.004		0.004		0.004				
Zinc		23000	69.40 M	45.25	41.32				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/ RSL_{nc}$	$EPC_{DU2}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU2}/ RSL_{nc}	$(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/ RSL_{nc}$	$EPC_{DU4}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU4}/ RSL_{nc}	$EPC_{DU5}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU5}/ RSL_{nc}
2-Methylnaphthalene		240	1.40 M	2.737	ND				0.00001		0.00001						
Acenaphthene		3600	1.90 M	9.041	ND				0.000001		0.000003						
Acenaphthylene	not available		ND	7.203	ND												
Anthracene		18000	7.00 M	15.64	ND				0.0000004		0.000001						
Benzo(a)anthracene	1.10E+00		49.00 M	52.03	51.0			4E-08		5E-08		5E-08					
Benzo(a)pyrene	1.10E-01	18	76.00 M	14.52	ND			7E-07	0.004	1E-07	0.001						
Benzo(b)fluoranthene	1.10E+00		120.00 M	52.5	31.01			1E-07		5E-08		3E-08					
Benzo(g,h,i)perylene	not available		52.00 M	28.51	9.525												
Benzo(k)fluoranthene	1.10E+01		35.00 M	29.48	11.39			3E-09		3E-09		1E-09					
Chrysene	1.10E+02		96.00 M	22.07	ND			9E-10		2E-10							
Dibenz(a,h)anthracene	1.10E-01		8.60 M	21.15	ND			8E-08		2E-07							
Fluoranthene		2400	120.00 M	51.14	22.59				0.0001		0.00002		0.00001				
Fluorene		2400	1.00 M	10.24	ND				0.0000004		0.000004						
Indeno(1,2,3-c,d)pyrene	1.10E+00		50.00 M	37.24	34.07			5E-08		3E-08		3E-08					
Naphthalene	2.00E+00	130	3.00 M	5.953	ND			2E-09	0.00002	3E-09	0.00005						
Phenanthrene	not available		43.00 M	20.52	8.991												
Pyrene		1800	120.00 M	58.71	7.609				0.0001		0.00003		0.000004				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.2**	**5E-07**	**0.3**	**1E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	174.00 M	153.00	13.26			**0.4**	**0.4**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405180A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration										DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs		DU-5 3'-4' bgs		Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg										EPC_{DU1}/ RSL_c*1x10^{-6}	EPC_{DU1}/RSL_{nc}	EPC_{DU2}/ RSL_c*1x10^{-6}	EPC_{DU2}/RSL_{nc}	EPC_{DU3}/ RSL_c*1x10^{-6}	EPC_{DU3}/RSL_{nc}	EPC_{DU4}/ RSL_c*1x10^{-6}	EPC_{DU4}/RSL_{nc}	EPC_{DU5}/ RSL_c*1x10^{-6}	EPC_{DU5}/RSL_{nc}
Antimony		31	4.50	M	3.80	M	2.90	M	4.90	M	6.40	M		0.1		0.1		0.09		0.2		0.2
Copper		3100	13.30	M	12.40	M	11.70	M	9.30	M	10.30	M		0.004		0.004		0.004		0.003		0.003
Zinc		23000	78.80	M	56.40	M	48.30	M	37.80	M	34.50	M		0.003		0.002		0.002		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg										(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}	EPC_{DU1}x0.001/ RSL_{nc}	EPC_{DU2} x0.001/ RSL_c*1x10^{-6}	EPC_{DU2}/ RSL_{nc}	(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}	EPC_{DU3}x0.001/ RSL_{nc}	EPC_{DU4} x0.001/ RSL_c*1x10^{-6}	EPC_{DU4}/ RSL_{nc}	EPC_{DU5} x0.001/ RSL_c*1x10^{-6}	EPC_{DU5}/ RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.00	M	ND		ND		ND		ND		1E-10	0.0000005								
2-Methylnaphthalene		240	3.70	M	ND		ND		ND		ND			0.00002								
Acenaphthene		3600	4.00	M	1.30	M	ND		ND		ND			0.000001		0.0000004						
Acenaphthylene	not available		3.90	M	ND		ND		ND		ND											
Anthracene		18000	14.00	M	3.40	M	ND		ND		ND			0.000001		0.0000002						
Benzo(a)anthracene	1.10E+00		76.00	M	26.00	M	3.20	M	2.80	M	1.60	M	7E-08		2E-08		3E-09		3E-09		1E-09	
Benzo(a)pyrene	1.10E-01	18	99.00	M	24.00	M	3.40	M	3.20	M	2.80	M	9E-07	0.01	2E-07	0.001	3E-08	0.0002	3E-08	0.0002	3E-08	0.0002
Benzo(b)fluoranthene	1.10E+00		180.00	M	34.00	M	ND		2.90	M	ND		2E-07		3E-08				3E-09			
Benzo(g,h,i)perylene	not available		73.00	M	22.00	M	4.00	M	3.40	M	2.70	M										
Benzo(k)fluoranthene	1.10E+01		55.00	M	7.80	M	ND		ND		ND		5E-09		7E-10							
Chrysene	1.10E+02		220.00	M	35.00	M	6.30	M	5.80	M	5.30	M	2E-09		3E-10		6E-11		5E-11		5E-11	
Dibenz(a,h)anthracene	1.10E-01		14.00	M	5.90	M	1.40	M	1.10	M	1.10	M	1E-07		5E-08		1E-08		1E-08		1E-08	
Fluoranthene		2400	250.00	M	49.00	M	6.20	M	6.80	M	5.50	M		0.0001		0.00002		0.000003		0.000003		0.000002
Fluorene		2400	2.50	M	ND		ND		ND		ND			0.000001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		65.00	M	17.00	M	3.50	M	2.60	M	1.90	M	6E-08		2E-08		3E-09		2E-09		2E-09	
Naphthalene	2.00E+00	130	7.40	M	2.50	M	ND		ND		ND		4E-09	0.0001	1E-09	0.00002						
Phenanthrene	not available		86.00	M	18.00	M	2.50	M	2.90	M	1.90	M										
Pyrene		1800	240.00	M	45.00	M	5.60	M	5.80	M	4.80	M		0.0001		0.00003		0.000003		0.000003		0.000003
													DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates													**1E-06**	**0.2**	**3E-07**	**0.1**	**5E-08**	**0.1**	**5E-08**	**0.2**	**4E-08**	**0.2**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration										DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs		DU-5 3'-4' bgs						
	mg/kg	mg/kg										EPC_{DU1}/$RSL_{res-lead}$	EPC_{DU2}/$RSL_{res-lead}$	EPC_{DU3}/$RSL_{res-lead}$	EPC_{DU4}/$RSL_{res-lead}$	EPC_{DU5}/$RSL_{res-lead}$
Lead	400	27.90	M	16.70	M	10.80	M	8.90	M	8.00		**0.07**	**0.04**	**0.03**	**0.02**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405181

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.13						0.1								
Copper		3100	66.1						0.02								
Zinc		23000	88.3						0.004								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Acenaphthene		3600	7.46						0.000002								
Anthracene		18000	23.7						0.000001								
Benzo(a)anthracene	1.10E+00		137					1E-07									
Benzo(a)pyrene	1.10E-01	18	72.0					7E-07	0.004								
Benzo(b)fluoranthene	1.10E+00		177					2E-07									
Benzo(g,h,i)perylene	not available		87.5														
Benzo(k)fluoranthene	1.10E+01		49.7					5E-09									
Chrysene	1.10E+02		128					1E-09									
Dibenz(a,h)anthracene	1.10E-01		30.0					3E-07									
Fluoranthene		2400	215						0.00009								
Fluorene		2400	5.24						0.000002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		101					9E-08									
Naphthalene	2.00E+00	130	15.1					8E-09	0.0001								
Phenanthrene	not available		100														
Pyrene		1800	200						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.1**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	35.60					**0.09**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405182

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.30 M	20.8	4.49				0.2		0.7		0.1				
Copper		3100	19.90 M	16.4	12.5				0.006		0.005		0.004				
Zinc		23000	95.10 M	57.4	53.4				0.004		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Acenaphthene		3600	9.40 M	13.7	2.74				0.000003		0.000004		0.0000008				
Anthracene		18000	53.00 M	77.8	11.1				0.000003		0.000004		0.0000006				
Benzo(a)anthracene	1.10E+00		260.00 M	321	44.0			2E-07		3E-07		4E-08					
Benzo(a)pyrene	1.10E-01	18	240.00 M	185	7.9			2E-06	0.01	2E-06	0.010	7E-08	0.0004				
Benzo(b)fluoranthene	1.10E+00		390.00 M	407	42.7			4E-07		4E-07		4E-08					
Benzo(g,h,i)perylene	not available		180.00 M	190	19.2												
Benzo(k)fluoranthene	1.10E+01		110.00 M	109	16.5			1E-08		1E-08		2E-09					
Chrysene	1.10E+02		350.00 M	309	9.55			3E-09		3E-09		9E-11					
Dibenz(a,h)anthracene	1.10E-01		48.00 M	52.6	15.6			4E-07		5E-07		1E-07					
Fluoranthene		2400	520.00 M	603	39.1				0.0002		0.0003		0.00002				
Fluorene		2400	8.50 M	16.5	3.81				0.000004		0.000007		0.000002				
Indeno(1,2,3-c,d)pyrene	1.10E+00		170.00 M	216	31.4			2E-07		2E-07		3E-08					
Naphthalene	2.00E+00	130	8.50 M	9.44	2.38			4E-09	0.00007	5E-09	0.00007	1E-09	0.00002				
Phenanthrene	not available		250.00 M	390	19.7												
Pyrene		1800	490.00 M	567	39.2				0.0003		0.0003		0.00002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-06**	**0.20**	**3E-06**	**0.69**	**3E-07**	**0.152**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	29.40 M	782.00	113.00			**0.07**	**2**	**0.3**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405194B(C)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.20	M	4.27		3.45					0.1		0.1		0.1				
Copper		3100	12.50	M	9.3		9.15					0.004		0.003		0.003				
Zinc		23000	113.00	M	67.3		42.8					0.005		0.003		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/ RSL_{nc}$	$EPC_{DU2}\ x0.001/ RSL_c*1x10^{-6}$	$EPC_{DU2}/\ RSL_{nc}$	$(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/ RSL_{nc}$	$EPC_{DU4}\ x0.001/ RSL_c*1x10^{-6}$	$EPC_{DU4}/\ RSL_{nc}$	$EPC_{DU5}\ x0.001/ RSL_c*1x10^{-6}$	$EPC_{DU5}/\ RSL_{nc}$
1-Methylnaphthalene	1.80E+01	4200	2.1	M	ND		ND				1E-10	0.0000005								
2-Methylnaphthalene		240	3.8	M	ND		ND					0.00002								
Acenaphthene		3600	9.4	M	ND		ND					0.000003								
Acenaphthylene	not available		1.1	M	ND		ND													
Anthracene		18000	17.0	M	ND		ND					0.0000009								
Benzo(a)anthracene	1.10E+00		190	M	26.9		18.8				2E-07		2E-08		2E-08					
Benzo(a)pyrene	1.10E-01	18	180	M	21.6		7.70				2E-06	0.01	2E-07	0.001	7E-08	0.0004				
Benzo(b)fluoranthene	1.10E+00		280	M	53.8		13.3				3E-07		5E-08		1E-08					
Benzo(g,h,i)perylene	not available		150	M	21.6		8.54													
Benzo(k)fluoranthene	1.10E+01		100	M	ND		ND				9E-09									
Chrysene	1.10E+02		230	M	ND		ND				2E-09									
Dibenz(a,h)anthracene	1.10E-01		33.0	M	6.62		1.31				3E-07		6E-08		1E-08					
Fluoranthene		2400	310	M	42.0		13.2					0.0001		0.00002		0.000006				
Fluorene		2400	3.6	M	ND		ND					0.000002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		140	M	26.1		ND				1E-07		2E-08							
Naphthalene	2.00E+00	130	8.9	M	2.20		ND				4E-09	0.00007	1E-09	0.00002						
Phenanthrene	not available		110	M	13.3		5.65													
Pyrene		1800	330	M	40.0		12.5					0.0002		0.00002		0.000007				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**3E-06**	**0.2**	**4E-07**	**0.1**	**1E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	20.50	M	10.60	8.82			**0.1**	**0.03**	**0.02**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405194B(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_{c}*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_{c}*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_{c}*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_{c}*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_{c}*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.50 M	3.25	4.32				0.1		0.1		0.1				
Copper		3100	12.50 M	11.8	11.8				0.004		0.004		0.004				
Zinc		23000	67.50 M	47.3	53.5				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.7 M	ND	ND			2E-10	0.0000009								
2-Methylnaphthalene		240	5.1 M	ND	ND				0.00002								
Acenaphthene		3600	12.0 M	ND	ND				0.000003								
Acenaphthylene	not available		ND	ND	ND												
Anthracene		18000	34.0 M	4.29	1.84				0.000002		0.0000002		0.0000001				
Benzo(a)anthracene	1.10E+00		400 M	30.1	11.5			4E-07		3E-08		1E-08					
Benzo(a)pyrene	1.10E-01	18	440 M	25.5	7.00			4E-06	0.02	2E-07	0.001	6E-08	0.0004				
Benzo(b)fluoranthene	1.10E+00		660 M	71.1	13.8			6E-07		6E-08		1E-08					
Benzo(g,h,i)perylene	not available		360 M	23.5	7.23												
Benzo(k)fluoranthene	1.10E+01		230 M	ND	ND			2E-08									
Chrysene	1.10E+02		630 M	5.77	ND			6E-09		5E-11							
Dibenz(a,h)anthracene	1.10E-01		94.0 M	8.28	2.33			9E-07		8E-08		2E-08					
Fluoranthene		2400	730 M	50.6	11.4				0.0003		0.00002		0.000005				
Fluorene		2400	3.5 M	ND	ND				0.000001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		320 M	23.5	6.59			3E-07		2E-08		6E-09					
Naphthalene	2.00E+00	130	13.0 M	1.82	2.24			7E-09	0.00010	9E-10	0.00001	1E-09	0.00002				
Phenanthrene	not available		270 M	18.7	4.85												
Pyrene		1800	790 M	44.5	11.3				0.0004		0.00002		0.000006				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**6E-06**	**0.1**	**4E-07**	**0.1**	**1E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	24.00 M	11.10	10.80			**0.1**	**0.03**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405194B(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.00 M	4.06	3.52				0.2		0.1		0.1				
Copper		3100	13.50 M	27.3	14.3				0.004		0.009		0.005				
Zinc		23000	82.20 M	50.1	57.0				0.004		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.70 M	ND	ND			2E-10	0.0000006								
2-Methylnaphthalene		240	4.30 M	ND	ND				0.00002								
Acenaphthene		3600	12.00 M	2.38	ND				0.000003		0.000001						
Anthracene		18000	26.00 M	6.21	ND				0.000001		0.0000003						
Benzo(a)anthracene	1.10E+00		320.00 M	61.7	ND			3E-07		6E-08							
Benzo(a)pyrene	1.10E-01	18	390.00 M	50.0	10.7			4E-06	0.02	5E-07	0.003	1E-07	0.0006				
Benzo(b)fluoranthene	1.10E+00		590.00 M	83.5	21.6			5E-07				2E-08					
Benzo(g,h,i)perylene	not available		320.00 M	50.0	9.84												
Benzo(k)fluoranthene	1.10E+01		210.00 M	44.6	ND			2E-08		4E-09							
Chrysene	1.10E+02		510.00 M	54.5	ND			5E-09		5E-10							
Dibenz(a,h)anthracene	1.10E-01		80.00 M	12.5	2.92			7E-07		1E-07		3E-08					
Fluoranthene		2400	570.00 M	95.2	16.2				0.0002		0.00004		0.000007				
Fluorene		2400	4.10 M	ND	ND				0.000002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		270.00 M	49.5	15.2			2E-07		5E-08		1E-08					
Naphthalene	2.00E+00	130	15.00 M	3.11	1.62			8E-09	0.00012	2E-09	0.00002	8E-10	0.00001				
Phenanthrene	not available		190.00 M	29.2	5.91												
Pyrene		1800	650.00 M	93.0	16.2				0.0004		0.00005		0.000009				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**5E-06**	**0.2**	**7E-07**	**0.1**	**2E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	22.40 M	11.90	11.90			**0.1**	**0.03**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405205A(E)

Detected ContamiNDnts	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					EPC_{DU1}/ RSL_c*1x10^{-6}	EPC_{DU1}/RSL_{nc}	EPC_{DU2}/ RSL_c*1x10^{-6}	EPC_{DU2}/RSL_{nc}	EPC_{DU3}/ RSL_c*1x10^{-6}	EPC_{DU3}/RSL_{nc}	EPC_{DU4}/ RSL_c*1x10^{-6}	EPC_{DU4}/RSL_{nc}	EPC_{DU5}/ RSL_c*1x10^{-6}	EPC_{DU5}/RSL_{nc}
Antimony		31	4.08	7.85	8.32				0.1		0.3		0.3				
Copper		3100	14.9	14.8	16.6				0.005		0.005		0.005				
Zinc		23000	87.0	57.5	57.6				0.004		0.003		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}	EPC_{DU1}x0.001/ RSL_{nc}	EPC_{DU2} x0.001/ RSL_c*1x10^{-6}	EPC_{DU2}/ RSL_{nc}	(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}	EPC_{DU3}x0.001/ RSL_{nc}	EPC_{DU4} x0.001/ RSL_c*1x10^{-6}	EPC_{DU4}/ RSL_{nc}	EPC_{DU5} x0.001/ RSL_c*1x10^{-6}	EPC_{DU5}/ RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	8.45	5.55	ND			5E-10	0.000002	3E-10	0.000001						
2-Methylnaphthalene		240	43.5	14.5	2.86				0.0002		0.00006		0.00001				
Acenaphthene		3600	10.3	5.70	ND				0.000003		0.000002						
Acenaphthylene	not available		ND	ND	ND												
Anthracene		18000	24.0	33.5	1.48				0.000001		0.000002		0.00000008				
Benzo(a)anthracene	1.10E+00		247	191	11.8			2E-07		2E-07		1E-08					
Benzo(a)pyrene	1.10E-01	18	196	183	20.9			2E-06	0.01	2E-06	0.010	2E-07	0.0012				
Benzo(b)fluoranthene	1.10E+00		373	319	23.7			3E-07		3E-07		2E-08					
Benzo(g,h,i)perylene	not available		195	164	15.1												
Benzo(k)fluoranthene	1.10E+01		125	80.6	4.82			1E-08		7E-09		4E-10					
Chrysene	1.10E+02		260	200	15.5			2E-09		2E-09		1E-10					
Dibenz(a,h)anthracene	1.10E-01		52.5	40.6	ND			5E-07		4E-07							
Fluoranthene		2400	336	360	20.8				0.0001		0.0002		0.000009				
Fluorene		2400	5.81	4.70	ND				0.000002		0.000002						
Indeno(1,2,3-c,d)pyrene	1.10E+00		182	119	14.2			2E-07		1E-07		1E-08					
Naphthalene	2.00E+00	130	51.4	8.02	ND			3E-08	0.00040	4E-09	0.00006						
Phenanthrene	not available		159	160	7.21												
Pyrene		1800	408	314	20.8				0.0002		0.0002		0.00001				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-06**	**0.2**	**3E-06**	**0.3**	**2E-07**	**0.3**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	23.40	91.80	18.00			**0.1**	**0.2**	**0.05**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405205A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.27	8.04	6.87				0.1		0.3		0.2				
Copper		3100	204	16.8	16.7				0.07		0.005		0.005				
Zinc		23000	71.8	59.3	58.5				0.003		0.003		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	ND	11.6	2.23					6E-10	0.000003	1E-10	0.000001				
2-Methylnaphthalene		240	4.73	21.3	3.99				0.00002		0.00009		0.00002				
Acenaphthene		3600	15.6	45.6	9.63				0.000004		0.00001		0.000003				
Anthracene		18000	45.2	64.2	10.3				0.000003		0.000004		0.0000006				
Benzo(a)anthracene	1.10E+00		312	577	153			3E-07		5E-07		1E-07					
Benzo(a)pyrene	1.10E-01	18	200	576	56.2			2E-06	0.01	5E-06	0.03	5E-07	0.003				
Benzo(b)fluoranthene	1.10E+00		450	851	304			4E-07		8E-07		3E-07					
Benzo(g,h,i)perylene	not available		217	452	178												
Benzo(k)fluoranthene	1.10E+01		145	209	67.3			1E-08		2E-08		6E-09					
Chrysene	1.10E+02		353	657	177			3E-09		6E-09		2E-09					
Dibenz(a,h)anthracene	1.10E-01		59.7	130	46.3			5E-07		1E-06							
Fluoranthene		2400	457	844	164				0.0002		0.0004		0.00007				
Fluorene		2400	7.58	17.8	5.00				0.000003		0.000007						
Indeno(1,2,3-c,d)pyrene	1.10E+00		207	392	150			2E-07		4E-07		1E-07					
Naphthalene	2.00E+00	130	20.5	68.9	6.50			1E-08	0.0002	3E-08	0.0005						
Phenanthrene	not available		231	344	52.3												
Pyrene		1800	505	968	199				0.0003		0.0005		0.00011				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-06**	**0.2**	**8E-06**	**0.3**	**1E-06**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	27.70	27.50	19.40			**0.07**	**0.07**	**0.05**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405208

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.62						0.2								
Copper		3100	19.1						0.006								
Zinc		23000	107						0.005								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	4.98					3E-10	0.000001								
2-Methylnaphthalene		240	12.1						0.00005								
Anthracene		18000	12.3						0.000001								
Benzo(a)anthracene	1.10E+00		77.7					7E-08									
Benzo(a)pyrene	1.10E-01	18	57.6					5E-07	0.003								
Benzo(b)fluoranthene	1.10E+00		84.9					8E-08									
Benzo(g,h,i)perylene	not available		56.2														
Benzo(k)fluoranthene	1.10E+01		63.8					6E-09									
Chrysene	1.10E+02		75.6					7E-10									
Fluoranthene		2400	112						0.00005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		56.5					5E-08									
Naphthalene	2.00E+00	130	16.6					8E-09	0.0001								
Phenanthrene	not available		54.4														
Pyrene		1800	116						0.00006								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-07**	**0.20**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	59.50					**0.1**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405270

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.5	4.46	3.28				0.1		0.1		0.1				
Copper		3100	52.2	13.8	13.4				0.02		0.004		0.004				
Zinc		23000	77.0	52.4	49.8				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	14.3	ND	ND			8E-10	0.000003								
2-Methylnaphthalene		240	17.0	ND	ND				0.00007								
Acenaphthene		3600	14.0	ND	ND				0.000004								
Anthracene		18000	14.0	105	157				0.0000008		0.000006		0.000009				
Benzo(a)anthracene	1.10E+00		365	65.9	110			3E-07		6E-08		1E-07					
Benzo(a)pyrene	1.10E-01	18	129	109	174			1E-06	0.01	1E-06	0.006	2E-06	0.0097				
Benzo(b)fluoranthene	1.10E+00		301	61.7	105			3E-07		6E-08		1E-07					
Benzo(g,h,i)perylene	not available		180	73.2	97.6												
Benzo(k)fluoranthene	1.10E+01		475	99.3	148			4E-08		9E-09		1E-08					
Chrysene	1.10E+02		280	33.2	64.2			3E-09		3E-10		6E-10					
Dibenz(a,h)anthracene	1.10E-01		164	103	113			1E-06		9E-07		1E-06					
Fluoranthene		2400	410	ND	ND				0.0002								
Fluorene		2400	12.8	73.0	126				0.000005		0.00003		0.0001				
Indeno(1,2,3-c,d)pyrene	1.10E+00		437	ND	ND			4E-07									
Naphthalene	2.00E+00	130	13.9	21.6	12.3			7E-09	0.00011		0.00017		0.0001				
Phenanthrene	not available		70.0	109	132												
Pyrene		1800	234	75.00	83.00				0.0001		0.00004		0.00005				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**4E-06**	**0.1**	**2E-06**	**0.2**	**3E-06**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	145.00	92.30	15.90			**0.4**	**0.2**	**0.04**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405272A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	7.05	5.19	2.55				0.2		0.2		0.1				
Copper		3100	13.9	10.7	10.7				0.00		0.003		0.003				
Zinc		23000	158	47.9	48.2				0.007		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	14.3	ND	ND			8E-10	0.000								
2-Methylnaphthalene		240	8.8	ND	ND				0.00004								
Acenaphthene		3600	13.4	ND	ND				0.000004								
Anthracene		18000	16.7	ND	ND				0.000001								
Benzo(a)anthracene	1.10E+00		329	22	15.5			3E-07		2E-08		1E-08					
Benzo(a)pyrene	1.10E-01	18	97.5	10.4	3.87			9E-07	0.005	9E-08	0.0006	4E-08	0.0002				
Benzo(b)fluoranthene	1.10E+00		184	35	24.6			2E-07		3E-08		2E-08					
Benzo(g,h,i)perylene	not available		117	9.9	3.71												
Benzo(k)fluoranthene	1.10E+01		500	12.5	9.41			5E-08		1E-09		9E-10					
Chrysene	1.10E+02		242	14.9	7.54			2E-09		1E-10		7E-11					
Dibenz(a,h)anthracene	1.10E-01		154	ND	ND			1E-06									
Fluoranthene		2400	417	27.5	11.7				0.0002		0.00001		0.000005				
Fluorene		2400	12.2	ND	ND				0.000005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		403	21.5	18.5			4E-07		2E-08		2E-08					
Naphthalene	2.00E+00	130	10.7	ND	ND			5E-09	0.0001								
Phenanthrene	not available		133	11.3	3.99												
Pyrene		1800	224	22.7	9.40				0.0001		0.00001		0.000005				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-06**	**0.2**	**2E-07**	**0.2**	**9E-08**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	552.00 M	86.00 M	104.00			**1.4**	**0.2**	**0.3**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405272A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_{c}*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_{c}*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_{c}*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_{c}*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_{c}*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.64	2.92	2.35				0.2		0.1		0.1				
Copper		3100	22.1	13.1	12.0				0.01		0.004		0.004				
Zinc		23000	69.7	52.0	51.5				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	ND	ND	ND												
2-Methylnaphthalene		240	9.25	ND	ND				0.00004								
Acenaphthene		3600	4.88	ND	ND				0.000001								
Anthracene		18000	13.1	ND	ND				0.000001								
Benzo(a)anthracene	1.10E+00		88.5	141	22.6			8E-08		1E-07		2E-08					
Benzo(a)pyrene	1.10E-01	18	88.6	37.0	9.85			8E-07	0.005	3E-07	0.002	9E-08	0.0005				
Benzo(b)fluoranthene	1.10E+00		152	252	34.0			1E-07		2E-07		3E-08					
Benzo(g,h,i)perylene	not available		77.3	36.1	9.51												
Benzo(k)fluoranthene	1.10E+01		82.1	93.8	12.5			7E-09		9E-09		1E-09					
Chrysene	1.10E+02		ND	53.8	14.8					5E-10		1E-10					
Dibenz(a,h)anthracene	1.10E-01		20.6	ND	ND			2E-07									
Fluoranthene		2400	230	93.9	23.6				0.0001		0.00004		0.000010				
Fluorene		2400	1.95	ND	ND				0.000001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		69.6	351	21.2			6E-08		3E-07		2E-08					
Naphthalene	2.00E+00	130	7.74	ND	ND			4E-09	0.0001								
Phenanthrene	not available		71.9	37.7	6.17												
Pyrene		1800	185	55.3	21.4				0.0001		0.00003		0.00001				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.2**	**1E-06**	**0.1**	**2E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	24.50	24.60	46.10			**0.06**	**0.06**	**0.1**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405273

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31		3.96	4.85						0.1		0.2				
Copper		3100		13.4	12.3						0.004		0.004				
Zinc		23000		50.8	52.5						0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200		1.13	ND												
2-Methylnaphthalene		240		1.49	ND												
Acenaphthene		3600		3.40	ND												
Anthracene		18000		4.89	ND						0.0000003						
Benzo(a)anthracene	1.10E+00			32.9	7.20					3E-08		7E-09					
Benzo(a)pyrene	1.10E-01	18		24.2	ND					2E-07	0.001						
Benzo(b)fluoranthene	1.10E+00			63.2	ND					6E-08							
Benzo(g,h,i)perylene	not available			25.4	ND												
Chrysene	1.10E+02			6.31	ND					6E-11							
Dibenz(a,h)anthracene	1.10E-01			5.87	ND					5E-08							
Fluoranthene		2400		41.2	2.14						0.00002		0.000001				
Fluorene		2400		1.67	ND						0.000001						
Indeno(1,2,3-c,d)pyrene	1.10E+00			24.4	ND					2E-08							
Naphthalene	2.00E+00	130		3.47	1.49					2E-09	0.00003	7E-10	0.00001				
Phenanthrene	not available			20.4	1.31												
Pyrene		1800		39.9	1.71						0.00002		0.00000				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates										**4E-07**	**0.1**	**7E-09**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400		26.70	10.80				**0.1**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405274

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.80	M	3.87		4.55					0.2		0.1		0.1				
Copper		3100	17.10	M	10.8		11.5					0.01		0.003		0.004				
Zinc		23000	104.00	M	43.4		48.3					0.005		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.20	M	3.10		ND				1E-10	0.000001	2E-10	0.000						
2-Methylnaphthalene		240	3.90	M	4.35		ND					0.00002		0.00002						
Acenaphthene		3600	6.60	M	20.4		ND					0.000002		0.000006						
Anthracene		18000	20.00	M	65.8		ND					0.000001		0.000004						
Benzo(a)anthracene	1.10E+00		180.00	M	431		16.0				2E-07		4E-07		1E-08					
Benzo(a)pyrene	1.10E-01	18	190.00	M	318		4.17				2E-06	0.01	3E-06	0.02	4E-08	0.0002				
Benzo(b)fluoranthene	1.10E+00		250.00	M	586		3.45				2E-07		5E-07		3E-09					
Benzo(g,h,i)perylene	not available		150.00	M	302		4.23													
Benzo(k)fluoranthene	1.10E+01		140.00	M	392		ND				1E-08		4E-08							
Chrysene	1.10E+02		250.00	M	523		ND				2E-09		5E-09							
Dibenz(a,h)anthracene	1.10E-01		35.00	M	82.7		ND				3E-07		8E-07							
Fluoranthene		2400	340.00	M	756		ND					0.0001		0.0003						
Fluorene		2400	2.80	M	8.45		ND					0.000001		0.00000						
Indeno(1,2,3-c,d)pyrene	1.10E+00		130.00	M	301		4.35				1E-07		3E-07		4E-09					
Naphthalene	2.00E+00	130	8.20	M	11.9		2.37				4E-09	0.00006	6E-09	0.00009	1E-09	0.00002				
Phenanthrene	not available		130.00	M	355		3.71													
Pyrene		1800	350.00	M	621		8.55					0.0002		0.0003		0.000005				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**3E-06**	**0.24**	**5E-06**	**0.15**	**6E-08**	**0.153**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	50.90	M	178.00	11.20			**0.1**	**0.4**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405276A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.40 M	3.50 M	2.90 M	3.50 M			0.2		0.1		0.1		0.1		
Copper		3100	10.60 M	11.00 M	9.40 M	7.60 M			0.00		0.004		0.003		0.002		
Zinc		23000	60.50 M	44.30 M	40.20 M	38.10 M			0.003		0.002		0.002		0.002		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	11.00 M	4.60 M	ND	ND		6E-10	0.000003	3E-10	0.000001						
2-Methylnaphthalene		240	19.00 M	8.50 M	ND	ND			0.00008								
Acenaphthene		3600	59.00 M	28.00 M	ND	ND			0.00002								
Acenaphthylene	not available		1.80 M	ND	ND	ND											
Anthracene		18000	170.00 M	76.00	1.6 M	ND			0.000009		0.000004		0.0000001				
Benzo(a)anthracene	1.10E+00		1500.00 M	660.00 M	16 M	16.00 M		1E-06		6E-07		1E-08		1E-08			
Benzo(a)pyrene	1.10E-01	18	1400.00 M	440.00 M	7.8 M	7.90 M		1E-05	0.08	4E-06	0.02	7E-08	0.0004	7E-08	0.0004		
Benzo(b)fluoranthene	1.10E+00		1800.00 M	890.00 M	17 M	12.00 M		2E-06		8E-07		2E-08		1E-08			
Benzo(g,h,i)perylene	not available		980.00 M	390.00 M	7.9 M	8.30 M											
Benzo(k)fluoranthene	1.10E+01		790.00 M	440.00 M	ND	ND		7E-08		4E-08							
Chrysene	1.10E+02		1900.00 M	700.00 M	ND	ND		2E-08		6E-09							
Dibenz(a,h)anthracene	1.10E-01		280.00 M	110.00 M	2.3 M	1.80 M		3E-06		4E-10		2E-11		2E-08			
Fluoranthene		2400	2300.00 M	930.00 M	17 M	16.00 M			0.001		0.0004		0.000007		0.00001		
Fluorene		2400	25.00 M	13.00 M	ND	ND			0.00001		0.000005						
Indeno(1,2,3-c,d)pyrene	1.10E+00		1000.00 M	420.00 M	8.3 M	9.30 M		9E-07		4E-07		8E-09		8E-09			
Naphthalene	2.00E+00	130	58.00 M	24.00 M	1.2 M	1.60 M		3E-08	0.0004	1E-08	0.0002	6E-10	0.0000	8E-10	0.00001		
Phenanthrene	not available		860.00 M	380.00 M	7.2 M	5.80 M											
Pyrene		1800	2400.00 M	850.00 M	14 M	14.00 M			0.001		0.0005		0.000008		0.00001		
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-05**	**0.3**	**6E-06**	**0.1**	**1E-07**	**0.1**	**1E-07**	**0.1**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	31.20 M	27.10 M	8.70 M	7.40 M		**0.08**	**0.07**	**0.02**	**0.02**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405276A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration										DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs		DU-5 3'-4' bgs		Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg										$EPC_{DU1}/RSL_{c}*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_{c}*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_{c}*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_{c}*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_{c}*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.20	M	2.70	M	3.40	M	3.40	M				0.2		0.1		0.1		0.1		
Copper		3100	11.50	M	11.70	M	10.60	M	7.50	M				0.00		0.004		0.003		0.002		
Zinc		23000	59.10	M	47.30	M	43.80	M	33.20	M				0.003		0.002		0.002		0.001		
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg										$(EPC_{DU1}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_{c}*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_{c}*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	44.00	M	15.00	M	2.1	M	ND				2E-09	0.00001	8E-10	0.000004	1E-10	0.000001				
2-Methylnaphthalene		240	74.00	M	23.00	M	3.9	M	ND					0.0003		0.0001		0.00002				
Acenaphthene		3600	220.00	M	79.00	M	14	M	1.60	M				0.00006		0.00002		0.000004		0.0000004		
Acenaphthylene	not available		5.60	M	1.50	M	ND		ND													
Anthracene		18000	620.00	M	250.00	M	38	M	7.90	M				0.00003		0.00001		0.000002		0.0000004		
Benzo(a)anthracene	1.10E+00		7100.00	M	2500.00	M	350	M	53.00	M			6E-06		2E-06		3E-07		5E-08			
Benzo(a)pyrene	1.10E-01	18	6400.00	M	1500.00	M	250	M	33.00	M			6E-05	0.4	1E-05	0.08	2E-06	0.01	3E-07	0.002		
Benzo(b)fluoranthene	1.10E+00		8200.00	M	3100.00	M	480	M	60.00	M			7E-06		3E-06		4E-07		5E-08			
Benzo(g,h,i)perylene	not available		3300.00	M	1400.00	M	220	M	32.00	M												
Benzo(k)fluoranthene	1.10E+01		3600.00	M	1400.00	M	280	M	19.00	M			3E-07		1E-07		3E-08		2E-09			
Chrysene	1.10E+02		7700.00	M	2500.00	M	390	M	25.00	M			7E-08		2E-08		4E-09		2E-10			
Dibenz(a,h)anthracene	1.10E-01		920.00	M	380.00	M	63	M	6.60	M			8E-06		4E-10		2E-10		6E-08			
Fluoranthene		2400	9400.00	M	3100.00	M	500	M	90.00	M				0.004		0.001		0.0002		0.00004		
Fluorene		2400	90.00	M	34.00	M	9.5	M	ND					0.00004		0.00001		0.000004				
Indeno(1,2,3-c,d)pyrene	1.10E+00		4600.00	M	1400.00	M	230	M	33.00	M			4E-06		1E-06		2E-07		3E-08			
Naphthalene	2.00E+00	130	210.00	M	71.00	M	13	M	2.10	M			1E-07	0.002	4E-08	0.0005	7E-09	0.0001	1E-09	0.00002		
Phenanthrene	not available		2800.00	M	1400.00	M	210	M	43.00	M												
Pyrene		1800	10000.00	M	2900.00	M	470	M	70.00	M				0.006		0.002		0.0003		0.00004		
													DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates													**9E-05**	**0.6**	**2E-05**	**0.2**	**3E-06**	**0.1**	**5E-07**	**0.1**		

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration									DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs		DU-5 3'-4' bgs					
	mg/kg	mg/kg									$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	122.00	M	42.30	M	10.10	M	7.80	M		**0.3**	**0.1**	**0.03**	**0.02**	

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405287

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.81	4.40	4.82				0.1		0.1		0.2				
Copper		3100	11.3	13.1	12.1				0.004		0.004		0.004				
Zinc		23000	65.6	43.2	46.3				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.20	ND	ND			1E-10	0.000001								
Acenaphthene		3600	6.70	2.15	ND				0.000002		0.0000006						
Anthracene		18000	32.3	ND	ND				0.000002								
Benzo(a)anthracene	1.10E+00		259	68.3	4.10			2E-07		6E-08		4E-09					
Benzo(a)pyrene	1.10E-01	18	205	47.7	6.67			2E-06	0.01	4E-07	0.00	6E-08	0.0004				
Benzo(b)fluoranthene	1.10E+00		323	108	19.5			3E-07		1E-07		2E-08					
Benzo(g,h,i)perylene	not available		152	42.5	3.96												
Benzo(k)fluoranthene	1.10E+01		142	30.6	ND			1E-08		3E-09							
Chrysene	1.10E+02		210	79.8	8.50			2E-09		7E-10		8E-11					
Dibenz(a,h)anthracene	1.10E-01		43.4	12.0	ND			4E-07		1E-07							
Fluoranthene		2400	416	82.6	8.10				0.0002		0.00003		0.000003				
Fluorene		2400	2.66	ND	ND				0.000001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		128	37.2	8.28			1E-07		3E-08		8E-09					
Naphthalene	2.00E+00	130	5.82	ND	ND			3E-09	0.00004								
Phenanthrene	not available		177	18.4	ND												
Pyrene		1800	365	89.9	8.60				0.000		0.00005		0.000005				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**3E-06**	**0.1**	**7E-07**	**0.2**	**9E-08**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	15.60	11.50	10.60			**0.04**	**0.03**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405288

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	7.34						0.2								
Copper		3100	51.6						0.02								
Zinc		23000	82.2						0.004								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.49					8E-11	0.0000004								
Acenaphthene		3600	2.55						0.000001								
Anthracene		18000	10.5						0.000001								
Benzo(a)anthracene	1.10E+00		81.0					7E-08									
Benzo(a)pyrene	1.10E-01	18	62.6					6E-07	0.003								
Benzo(b)fluoranthene	1.10E+00		103					9E-08									
Benzo(g,h,i)perylene	not available		46.5														
Benzo(k)fluoranthene	1.10E+01		27.4					2E-09									
Chrysene	1.10E+02		104					9E-10									
Dibenz(a,h)anthracene	1.10E-01		13.8					1E-07									
Fluoranthene		2400	148						0.00006								
Fluorene		2400	1.31						0.0000005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		35.5					3E-08									
Naphthalene	2.00E+00	130	3.65					2E-09	0.00003								
Phenanthrene	not available		56.4														
Pyrene		1800	138						0.00008								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**9E-07**	**0.3**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	21.40 M					**0.1**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405295

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.50 M	4.19	4.19				0.2		0.1		0.1				
Copper		3100	9.90 M	8.82	8.82				0.003		0.003		0.003				
Zinc		23000	45.10 M	44.2	44.2				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	19.3 M	16.8	ND			1E-09	0.000005	9E-10	0.000004						
2-Methylnaphthalene		240	10.3 M	16.8	ND				0.00004		0.00007						
Acenaphthene		3600	105 M	16.5	ND				0.00003		0.000005						
Acenaphthylene	not available		14.3 M	16.8	ND												
Anthracene		18000	141 M	16.8	ND				0.000008		0.0000009						
Benzo(a)anthracene	1.10E+00		1,270 M	65.8	71.2			1E-06		6E-08		6E-08					
Benzo(a)pyrene	1.10E-01	18	750 M	64.1	83.7			7E-06	0.04	6E-07	0.004	8E-07	0.005				
Benzo(b)fluoranthene	1.10E+00		1,870 M	320	164			2E-06		3E-07		1E-07					
Benzo(g,h,i)perylene	not available		849 M	51.0	91.4												
Benzo(k)fluoranthene	1.10E+01		570 M	13.1	58.3			5E-08		1E-09		5E-09					
Chrysene	1.10E+02		1,630 M	100	97.5			1E-08		9E-10		9E-10					
Dibenz(a,h)anthracene	1.10E-01		214 M	11.4	22.6			2E-06		1E-07		2E-07					
Fluoranthene		2400	1,810 M	101	63.7				0.0008		0.00004		0.00003				
Fluorene		2400	17 M	16.8	ND				0.000007		0.000007						
Indeno(1,2,3-c,d)pyrene	1.10E+00		752 M	27.4	72.6			7E-07		2E-08		7E-08					
Naphthalene	2.00E+00	130	75 M	16.2	ND			4E-08	0.0006	8E-09	0.0001						
Phenanthrene	not available		768	14.9	4.70												
Pyrene		1800	2,350 M	113	73.1				0.001		0.00006		0.000041				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.23**	**1E-06**	**0.14**	**1E-06**	**0.145**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	14.90 M	9.92				**0.04**	**0.02**			

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405296

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.50 M	3.35	3.76				0.2		0.1		0.1				
Copper		3100	11.50 M	9.88	11.1				0.004		0.003		0.004				
Zinc		23000	53.10 M	46.0	48.0				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.90 M	3.45	ND			2E-10	0.000001	2E-10	0.000001						
2-Methylnaphthalene		240	5.70 M	6.67	ND				0.00002		0.00003						
Acenaphthene		3600	16.00 M	23.4	1.49				0.000004		0.000007		0.0000004				
Acenaphthylene	not available		1.10 M	ND	ND												
Anthracene		18000	51.00 M	75.9	2.92				0.000003		0.000004		0.0000002				
Benzo(a)anthracene	1.10E+00		420.00 M	506	26.3			4E-07		5E-07		2E-08					
Benzo(a)pyrene	1.10E-01	18	420.00 M	408	16.5			4E-06	0.02	4E-06	0.02	2E-07	0.0009				
Benzo(b)fluoranthene	1.10E+00		560.00 M	718	40.2			5E-07		7E-07		4E-08					
Benzo(g,h,i)perylene	not available		330.00 M	392	18.7												
Benzo(k)fluoranthene	1.10E+01		330.00 M	365	ND			3E-08		3E-08							
Chrysene	1.10E+02		560.00 M	831	ND			5E-09		8E-09							
Dibenz(a,h)anthracene	1.10E-01		87.00 M	101	3.99			8E-07		9E-07		4E-08					
Fluoranthene		2400	760.00 M	992	38.8				0.0003		0.0004		0.00002				
Fluorene		2400	6.60 M	11.9	ND				0.000003		0.000005						
Indeno(1,2,3-c,d)pyrene	1.10E+00		310.00 M	375	18.9			3E-07		3E-07		2E-08					
Naphthalene	2.00E+00	130	16.00 M	19.3	2.38			8E-09	0.0001	1E-08	0.0001	1E-09	0.00002				
Phenanthrene	not available		300.00 M	453	19.7												
Pyrene		1800	770.00 M	894	34.4				0.0004		0.0005		0.00002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**6E-06**	**0.2**	**6E-06**	**0.1**	**3E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	12.90 M	11.40	9.81			**0.03**	**0.03**	**0.02**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405297

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.00 M	3.97	5.35				0.1		0.1		0.2				
Copper		3100	10.10 M	8.95	10.9				0.003		0.003		0.004				
Zinc		23000	60.30 M	37.1	41.7				0.003		0.002		0.002				

Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	11.00 M	ND	ND			6E-10	0.000003								
2-Methylnaphthalene		240	17.00 M	18.5	ND				0.00007		0.00008						
Acenaphthene		3600	46.00 M	58.9	6.59				0.00001		0.00002		0.000002				
Acenaphthylene	not available		1.60 M	NA	1.13												
Anthracene		18000	150.00 M	275	22.8				0.000008		0.00002		0.000001				
Benzo(a)anthracene	1.10E+00		1200.00 M	1,860	188			1E-06		2E-06		2E-07					
Benzo(a)pyrene	1.10E-01	18	1100.00 M	1,140	122			1E-05	0.06	1E-05	0.06	1E-06	0.0068				
Benzo(b)fluoranthene	1.10E+00		1500.00 M	2,210	281			1E-06		2E-06		3E-07					
Benzo(g,h,i)perylene	not available		820.00 M	1,200	137												
Benzo(k)fluoranthene	1.10E+01		580.00 M	848	88.4			5E-08		8E-08		8E-09					
Chrysene	1.10E+02		1500.00 M	1,880	190			1E-08		2E-08		2E-09					
Dibenz(a,h)anthracene	1.10E-01		220.00 M	296	40.2			2E-06		3E-06		4E-07					
Fluoranthene		2400	1900.00 M	2,650	234				0.0008		0.001		0.0001				
Fluorene		2400	18.00 M	42.6	4.63				0.000008		0.00002						
Indeno(1,2,3-c,d)pyrene	1.10E+00		760.00 M	1,290	144			7E-07		1E-06		1E-07					
Naphthalene	2.00E+00	130	46.00 M	102	8.13			2E-08	0.0004	5E-08	0.0008	4E-09	0.00006				
Phenanthrene	not available		810.00 M	1,210	102												
Pyrene		1800	2000.00 M	3,100	287				0.001		0.002		0.0002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-05**	**0.2**	**2E-05**	**0.2**	**2E-06**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration: DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	12.70 M	12.60	10.50			**0.03**	**0.03**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405306

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.60 M	4.37	2.96				0.1		0.1		0.1				
Copper		3100	29.80 M	27.4	25.7				0.01		0.009		0.008				
Zinc		23000	57.30 M	77.4	56.0				0.002		0.003		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	4.50 M	18.4	14.3			3E-10	0.000001	1E-09	0.000004		0.000003				
2-Methylnaphthalene		240	7.00 M	34.5	14.2				0.00003		0.0001		0.000059				
Acenaphthene		3600	20.00 M	87.1	14.0				0.00001		0.00002		0.000004				
Acenaphthylene	not available		1.40 M	NA	14.3												
Anthracene		18000	52.00 M	101	14.3				0.000003		0.000006						
Benzo(a)anthracene	1.10E+00		470.00 M	1,040	245			4E-07		9E-07		2E-07					
Benzo(a)pyrene	1.10E-01	18	480.00 M	682	53.9			4E-06	0.03	6E-06	0.04	5E-07	0.0030				
Benzo(b)fluoranthene	1.10E+00		730.00 M	1,410	290			7E-07		1E-06		3E-07					
Benzo(g,h,i)perylene	not available		370.00 M	722	53.2												
Benzo(k)fluoranthene	1.10E+01		180.00 M	584	284			2E-08		5E-08		3E-08					
Chrysene	1.10E+02		660.00 M	1,050	96.0			6E-09		1E-08		9E-10					
Dibenz(a,h)anthracene	1.10E-01		98.00 M	201	16.1			9E-07		2E-06		1E-07					
Fluoranthene		2400	810.00 M	1,560	168				0.0003		0.0007		0.00007				
Fluorene		2400	8.50 M	NA	14.3				0.000004								
Indeno(1,2,3-c,d)pyrene	1.10E+00		320.00 M	580	180			3E-07		5E-07		2E-07					
Naphthalene	2.00E+00	130	18.00 M	124	14.0			9E-09	0.0001	6E-08	0.001	7E-09	0.0001				
Phenanthrene	not available		330.00 M	798	61.9												
Pyrene		1800	860.00 M	1,620	114				0.000		0.001		0.0001				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-06**	**0.19**	**1E-05**	**0.19**	**1E-06**	**0.110**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	34.70 M	41.80	19.20			**0.09**	**0.1**	**0.05**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405308A(E)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.30 M	3.96	4.90				0.1		0.1		0.2				
Copper		3100	10.80 M	12.1	11.5				0.00		0.004		0.004				
Zinc		23000	71.10 M	52.3	48.1				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Acenaphthene		3600	ND	2.50	ND						0.000001						
Anthracene		18000	10.00 M	20.4	ND				0.000001		0.000001						
Benzo(a)anthracene	1.10E+00		85.00 M	77.0	49.9			8E-08		7E-08		5E-08					
Benzo(a)pyrene	1.10E-01	18	84.00 M	33.3	ND			8E-07	0.005	3E-07	0.002						
Benzo(b)fluoranthene	1.10E+00		88.00 M	91.8	29.8			8E-08		8E-08		3E-08					
Benzo(g,h,i)perylene	not available		88.00 M	42.1	10.1												
Benzo(k)fluoranthene	1.10E+01		ND	39.1	10.5					4E-09		1E-09					
Chrysene	1.10E+02		120.00 M	60.9	ND			1E-09		6E-10							
Dibenz(a,h)anthracene	1.10E-01		28.00 M	19.2	ND			3E-07		7E-10							
Fluoranthene		2400	160.00 M	126	21.4				0.0001		0.00005		0.000009				
Fluorene		2400	ND	1.13	ND						0.00000						
Indeno(1,2,3-c,d)pyrene	1.10E+00		68.00 M	52.5	27.9			6E-08		5E-08		3E-08					
Naphthalene	2.00E+00	130	11.00 M	2.56	ND			6E-09	0.0001	1E-09	0.00002						
Phenanthrene	not available		61.00 M	74.4	8.11												
Pyrene		1800	150.00 M	116	5.24				0.0001		0.0001		0.000003				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.1**	**5E-07**	**0.1**	**1E-07**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	66.10 M	153.00	12.00			**0.2**	**0.4**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405308A(W)

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.70 M	13.5	6.89				0.2		0.4		0.2				
Copper		3100	9.70 M	15.0	14.0				0.003		0.005		0.005				
Zinc		23000	44.90 M	51.6	52.9				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
2-Methylnaphthalene		240	ND	3.65	ND						0.00002						
Acenaphthene		3600	ND	2.02	ND						0.000001						
Anthracene		18000	29.00 M	6.17	ND				0.000002		0.000000						
Benzo(a)anthracene	1.10E+00		160.00 M	53.0	6.14			1E-07		5E-08		6E-09					
Benzo(a)pyrene	1.10E-01	18	140.00 M	51.8	ND			1E-06	0.008	5E-07	0.003						
Benzo(b)fluoranthene	1.10E+00		170.00 M	90.6	7.53			2E-07		8E-08		7E-09					
Benzo(g,h,i)perylene	not available		120.00 M	37.2	7.77												
Benzo(k)fluoranthene	1.10E+01		ND	21.7	4.61					2E-09		4E-10					
Chrysene	1.10E+02		210.00 M	63.3	9.65			2E-09		6E-10		9E-11					
Dibenz(a,h)anthracene	1.10E-01		39.00 M	11.4	ND			4E-07		3E-10							
Fluoranthene		2400	300.00 M	103	12.0				0.0001		0.00004		0.000005				
Indeno(1,2,3-c,d)pyrene	1.10E+00		99.00 M	33.6	ND			9E-08		3E-08							
Naphthalene	2.00E+00	130	ND	2.66	ND					1E-09	0.00002						
Phenanthrene	not available		110.00 M	41.0	5.72												
Pyrene		1800	280.00 M	91.6	9.91				0.0002		0.00005		0.000006				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-06**	**0.2**	**6E-07**	**0.4**	**1E-08**	**0.2**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	34.80 M	92.80	13.40			**0.1**	**0.2**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405309

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	11.8						0.4								
Copper		3100	10.7						0.003								
Zinc		23000	58.6						0.003								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	1.13					6E-11	0.0000003								
Acenaphthene		3600	6.20						0.000002								
Anthracene		18000	43.2						0.000002								
Benzo(a)anthracene	1.10E+00		227					2E-07									
Benzo(a)pyrene	1.10E-01	18	147					1E-06	0.008								
Benzo(g,h,i)perylene	not available		108														
Benzo(k)fluoranthene	1.10E+01		94.7					9E-09									
Chrysene	1.10E+02		223					2E-09									
Dibenz(a,h)anthracene	1.10E-01		35.1					3E-07									
Fluoranthene		2400	410						0.0002								
Fluorene		2400	3.63						0.000002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		109					1E-07									
Naphthalene	2.00E+00	130	5.25					3E-09	0.00004								
Phenanthrene	not available		204														
Pyrene		1800	361						0.0002								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-06**	**0.40**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	348.00					**0.9**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32405310

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.76						0.2								
Copper		3100	11.0						0.004								
Zinc		23000	59.4						0.003								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	2.73					2E-10	0.0000007								
Acenaphthene		3600	7.33						0.000002								
Anthracene		18000	22.6						0.000001								
Benzo(a)anthracene	1.10E+00		116					1E-07									
Benzo(a)pyrene	1.10E-01	18	94.0					9E-07	0.005								
Benzo(b)fluoranthene	1.10E+00		148					1E-07									
Benzo(g,h,i)perylene	not available		73.7														
Benzo(k)fluoranthene	1.10E+01		83.1					8E-09									
Chrysene	1.10E+02		151					1E-09									
Dibenz(a,h)anthracene	1.10E-01		22.3					2E-07									
Fluoranthene		2400	227						0.0001								
Fluorene		2400	2.56						0.000001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		66.1					6E-08									
Naphthalene	2.00E+00	130	8.43					4E-09	0.00006								
Phenanthrene	not available		96.8														
Pyrene		1800	196						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.2**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	144.00					**0.4**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32436014

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration						DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg						$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	8.90	M	9.86	4.21				0.3		0.3		0.1				
Copper		3100	12.70	M	11.7	11.2				0.004		0.004		0.004				
Zinc		23000	102.00	M	48.0	46.6				0.004		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg						$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	34.00	M	ND	ND			2E-09	0.000008								
2-Methylnaphthalene		240	55.00	M	ND	ND				0.0002								
Acenaphthene		3600	190.00	M	21.8	ND				0.00005		0.00001						
Acenaphthylene	not available		2.10	M	ND	ND												
Anthracene		18000	670.00	M	ND	ND				0.00004								
Benzo(a)anthracene	1.10E+00		3700.00	M	510	38.1			3E-06		5E-07		3E-08					
Benzo(a)pyrene	1.10E-01	18	2900.00	M	416	31.8			3E-05	0.2	4E-06	0.02	3E-07	0.002				
Benzo(b)fluoranthene	1.10E+00		3500.00	M	851	63.7			3E-06		8E-07		6E-08					
Benzo(g,h,i)perylene	not available		2300.00	M	397	32.4												
Benzo(k)fluoranthene	1.10E+01		1900.00	M	232	19.0			2E-07		2E-08		2E-09					
Chrysene	1.10E+02		4000.00	M	811	53.0			4E-08		7E-09		5E-10					
Dibenz(a,h)anthracene	1.10E-01		580.00	M	141	8.63			5E-06		1E-06		8E-08					
Fluoranthene		2400	6000.00	M	1030	71.4				0.003		0.0004		0.00003				
Fluorene		2400	150.00	M	ND	ND				0.00006								
Indeno(1,2,3-c,d)pyrene	1.10E+00		2300.00	M	326	28.7			2E-06		3E-07		3E-08					
Naphthalene	2.00E+00	130	170.00	M	21.4	ND			9E-08	0.001	1E-08	0.0002						
Phenanthrene	not available		2900.00	M	458	27.9												
Pyrene		1800	5600.00	M	1040	65.5				0.003		0.001		0.00004				
									DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates									**4E-05**	**0.46**	**7E-06**	**0.35**	**5E-07**	**0.143**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	19.00	M	353.00	10.30			**0.05**	**0.9**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32436015

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	8.00	M	4.40	M	4.30	M	7.36	4.90		0.3		0.1		0.14		0.2		0.2
Copper		3100	14.60	M	9.10	M	9.80	M	9.80	8.35		0.005		0.003		0.003		0.003		0.003
Zinc		23000	37.60	M	36.70	M	38.70	M	42.3	39.3		0.002		0.002		0.002		0.002		0.002
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	70.00	M	24.00	M	6.00	M	4.43	3.63	4E-09	0.00002	1E-09	0.000006		0.000001		0.000001	2E-10	0.000001
2-Methylnaphthalene		240	120.00	M	220.00	M	27.00	M	45.8	44.9		0.0005		0.0009		0.0001		0.0002		0.0002
Acenaphthene		3600	360.00	M	130.00	M	31.00	M	27.3	20.7		0.0001		0.00004		0.000009		0.000008		0.000006
Acenaphthylene	not available		5.40		ND		ND		ND	ND										
Anthracene		18000	1600.00	M	720.00	M	140.00		204	87.2		0.00009		0.00004		0.00001		0.000011		0.000005
Benzo(a)anthracene	1.10E+00		8800.00	M	3300.00	M	770.00	M	977	470	8E-06		3E-06		7E-07		9E-07		4E-07	
Benzo(a)pyrene	1.10E-01	18	7000.00	M	2100.00	M	500.00	M	664	306	6E-05	0.4	2E-05	0.1	5E-06	0.03	6E-06	0.04	3E-06	0.02
Benzo(b)fluoranthene	1.10E+00		9000.00	M	4800.00	M	980.00	M	1,350	655	8E-06		4E-06		9E-07		1E-06		6E-07	
Benzo(g,h,i)perylene	not available		5300.00	M	2100.00	M	480.00	M	612	289										
Benzo(k)fluoranthene	1.10E+01		4400.00	M	1500.00	M	410.00	M	506	252	4E-07		1E-07		4E-08		5E-08		2E-08	
Chrysene	1.10E+02		9000.00	M	3000.00	M	710.00	M	774	442	8E-08		3E-08		6E-09		7E-09		4E-09	
Dibenz(a,h)anthracene	1.10E-01		1200.00	M	540.00	M	130.00	M	152	78.1	1E-05		5E-06		1E-06		1E-06		7E-07	
Fluoranthene		2400	15000.00	M	6600.00	M	1400.00	M	1830	882		0.006		0.003		0.0006		0.0008		0.0004
Fluorene		2400	280.00	M	80.00	M	22.00	M	24.0	13.9				0.00003				0.00001		0.000006
Indeno(1,2,3-c,d)pyrene	1.10E+00		4800.00	M	1800.00	M	440.00	M	533	260	4E-06		2E-06		4E-07		5E-07		2E-07	
Naphthalene	2.00E+00	130	370.00	M	110.00	M	28.00	M	18.5	15.5	2E-07	0.003	6E-08	0.0008	1E-08		9E-09	0.0001	8E-09	0.0001
Phenanthrene	not available		7100.00	M	2900.00	M	680.00	M	912	422										
Pyrene		1800	14000.00	M	5200.00	M	1300.00	M	1690	789		0.008		0.003		0.0007		0.0009		
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**1E-04**	**0.7**	**3E-05**	**0.3**	**8E-06**	**0.17**	**1E-05**	**0.28**	**5E-06**	**0.18**

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration								DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg								$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	21.40	M	13.70	M	10.40	M	10.90	8.72	**0.05**	**0.03**	**0.03**	**0.03**	**0.02**

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32436021

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.08						0.1								
Copper		3100	24.1						0.008								
Zinc		23000	39.9						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/ RSL_{nc}$	$EPC_{DU2}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/ RSL_{nc}$	$EPC_{DU4}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
2-Methylnaphthalene		240	11.8						0.00005								
Acenaphthene		3600	1.31						0.0000004								
Anthracene		18000	14.6						0.000001								
Benzo(a)anthracene	1.10E+00		127					1E-07									
Benzo(a)pyrene	1.10E-01	18	66.0					6E-07	0.004								
Benzo(b)fluoranthene	1.10E+00		144					1E-07									
Benzo(g,h,i)perylene	not available		66.7														
Benzo(k)fluoranthene	1.10E+01		90.9					8E-09									
Chrysene	1.10E+02		125					1E-09									
Dibenz(a,h)anthracene	1.10E-01		29.1					3E-07									
Fluoranthene		2400	212						0.0001								
Fluorene		2400	4.47						0.000002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		99.0					9E-08									
Phenanthrene	not available		98.5														
Pyrene		1800	189						0.0001								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-06**	**0.11**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	18.20					**0.05**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32436022

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.80 M	6.01	2.68				0.2		0.2		0.1				
Copper		3100	14.20 M	13.0	14.4				0.005		0.004		0.005				
Zinc		23000	65.20 M	48.4	51.7				0.003		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	3.10 M	ND	ND			2E-10	0.000001								
2-Methylnaphthalene		240	5.10 M	ND	ND				0.0000								
Acenaphthene		3600	24.00 M	4.80	1.49				0.00001		0.000001		0.0000004				
Anthracene		18000	210.00 M	21.4	12.5				0.000012		0.000001		0.0000007				
Benzo(a)anthracene	1.10E+00		750.00 M	116	56.5			7E-07		1E-07		5E-08					
Benzo(a)pyrene	1.10E-01	18	540.00 M	53.2	20.3			5E-06	0.03	5E-07	0.003	2E-07	0.001				
Benzo(b)fluoranthene	1.10E+00		670.00 M	110	59.2			6E-07		1E-07		5E-08					
Benzo(g,h,i)perylene	not available		400.00 M	64.7	36.0												
Benzo(k)fluoranthene	1.10E+01		450.00 M	63.2	38.2			4E-08		6E-09		3E-09					
Chrysene	1.10E+02		810.00 M	76.7	29.5			7E-09		7E-10		3E-10					
Dibenz(a,h)anthracene	1.10E-01		100.00 M	24.0	16.2			9E-07		2E-07		1E-07					
Fluoranthene		2400	1500.00 M	157	61.2				0.001		0.0001		0.00003				
Fluorene		2400	47.00 M	2.56	ND				0.00002		0.000001						
Indeno(1,2,3-c,d)pyrene	1.10E+00		360.00 M	75.7	44.5			3E-07		7E-08		4E-08					
Naphthalene	2.00E+00	130	9.20 M	7.36	ND			5E-09	0.0001	4E-09	0.00006						
Phenanthrene	not available		960.00 M	81.0	28.8												
Pyrene		1800	1300.00 M	152	64.1				0.001		0.000		0.0000				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-06**	**0.26**	**1E-06**	**0.20**	**5E-07**	**0.095**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	17.60 M	273.00	15.77			**0.04**	**0.7**	**0.04**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32436023

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.49						0.1								
Copper		3100	20.5						0.007								
Zinc		23000	40.0						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Anthracene		18000	7.40						0.0000004								
Benzo(a)anthracene	1.10E+00		41.4					4E-08									
Benzo(a)pyrene	1.10E-01	18	51.5					5E-07	0.003								
Benzo(b)fluoranthene	1.10E+00		114					1E-07									
Benzo(g,h,i)perylene	not available		35.9														
Benzo(k)fluoranthene	1.10E+01		141					1E-08									
Chrysene	1.10E+02		67.2					6E-10									
Dibenz(a,h)anthracene	1.10E-01		1.80					2E-08									
Fluoranthene		2400	106						0.00004								
Indeno(1,2,3-c,d)pyrene	1.10E+00		38.2					3E-08									
Naphthalene	2.00E+00	130	2.00					1E-09	0.00002								
Phenanthrene	not available		42.5														
Pyrene		1800	92.9						0.00005								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-07**	**0.16**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	15.10					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32436026

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	10.7						0.3								
Copper		3100	18.8						0.006								
Zinc		23000	55.5						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/ RSL_{nc}$	$EPC_{DU2}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU2}/ RSL_{nc}	$(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/ RSL_{nc}$	$EPC_{DU4} x0.001/ RSL_c*1x10^{-6}$	EPC_{DU4}/ RSL_{nc}	$EPC_{DU5} x0.001/ RSL_c*1x10^{-6}$	EPC_{DU5}/ RSL_{nc}
Acenaphthene		3600	1.49						0.0000004								
Acenaphthylene	not available		1.13														
Anthracene		18000	6.17						0.0000003								
Benzo(a)anthracene	1.10E+00		37.0					3E-08									
Benzo(a)pyrene	1.10E-01	18	47.7					4E-07	0.003								
Benzo(b)fluoranthene	1.10E+00		84.2					8E-08									
Benzo(g,h,i)perylene	not available		31.9														
Benzo(k)fluoranthene	1.10E+01		54.2					5E-09									
Chrysene	1.10E+02		55.0					5E-10									
Dibenz(a,h)anthracene	1.10E-01		19.2					2E-07									
Fluoranthene		2400	111						0.00005								
Indeno(1,2,3-c,d)pyrene	1.10E+00		35.9					3E-08									
Naphthalene	2.00E+00	130	2.01					1E-09	0.00002								
Phenanthrene	not available		41.7														
Pyrene		1800	92.7						0.00005								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**8E-07**	**0.36**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	55.40					**0.14**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32437020

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					EPC_{DU1}/ RSL_c*1x10^{-6}	EPC_{DU1}/RSL_{nc}	EPC_{DU2}/ RSL_c*1x10^{-6}	EPC_{DU2}/RSL_{nc}	EPC_{DU3}/ RSL_c*1x10^{-6}	EPC_{DU3}/RSL_{nc}	EPC_{DU4}/ RSL_c*1x10^{-6}	EPC_{DU4}/RSL_{nc}	EPC_{DU5}/ RSL_c*1x10^{-6}	EPC_{DU5}/RSL_{nc}
Antimony		31	3.69						0.1								
Copper		3100	12.2						0.004								
Zinc		23000	44.4						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}	EPC_{DU1}x0.001/ RSL_{nc}	EPC_{DU2} x0.001/ RSL_c*1x10^{-6}	EPC_{DU2}/ RSL_{nc}	(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}	EPC_{DU3}x0.001/ RSL_{nc}	EPC_{DU4} x0.001/ RSL_c*1x10^{-6}	EPC_{DU4}/ RSL_{nc}	EPC_{DU5} x0.001/ RSL_c*1x10^{-6}	EPC_{DU5}/ RSL_{nc}
Benzo(a)anthracene	1.10E+00		21.7					2E-08									
Benzo(a)pyrene	1.10E-01	18	13.4					1E-07	0.001								
Benzo(b)fluoranthene	1.10E+00		32.7					3E-08									
Benzo(g,h,i)perylene	not available		13.8														
Benzo(k)fluoranthene	1.10E+01		9.88					9E-10									
Chrysene	1.10E+02		20.7					2E-10									
Dibenz(a,h)anthracene	1.10E-01		6.14					6E-08									
Fluoranthene		2400	32.5						0.00001								
Indeno(1,2,3-c,d)pyrene	1.10E+00		13.0					1E-08									
Naphthalene	2.00E+00	130	1.4					7E-10	0.00001								
Phenanthrene	not available		8.55														
Pyrene		1800	31.0						0.00002								
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-07**	**0.13**								

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	15.10					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439003

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration									DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	5.91	M	2.41	M	2.92	M				0.2		0.1		0.1				
Copper		3100	16.7	M	16.8	M	14.0	M				0.005		0.005		0.005				
Zinc		23000	53.8	M	54.8	M	52.0	M				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
2-Methylnaphthalene		240	9.21		ND		ND					0.00004								
Acenaphthene		3600	14.4		ND		ND					0.000004								
Anthracene		18000	45.7		ND		ND					0.000003								
Benzo(a)anthracene	1.10E+00		224		165		15.5				2E-07		2E-07		1E-08					
Benzo(a)pyrene	1.10E-01	18	170		56.3		3.77				2E-06	0.01	5E-07	0.003	3E-08	0.0002				
Benzo(b)fluoranthene	1.10E+00		370		266		22.8				3E-07		2E-07		2E-08					
Benzo(g,h,i)perylene	not available		156		56.9		4.83													
Benzo(k)fluoranthene	1.10E+01		87.5		134		12.0				8E-09		1E-08		1E-09					
Chrysene	1.10E+02		209		114		8.45				2E-09		1E-09		8E-11					
Dibenz(a,h)anthracene	1.10E-01		39.0		ND		ND				4E-07									
Fluoranthene		2400	461		197		11.2					0.0002		0.0001		0.000005				
Fluorene		2400	6.04		ND		ND					0.000003								
Indeno(1,2,3-c,d)pyrene	1.10E+00		107		206		17.8				1E-07		2E-07		2E-08					
Naphthalene	2.00E+00	130	18.5		ND		ND				9E-09	0.0001								
Phenanthrene	not available		204		97.4		3.32													
Pyrene		1800	393		154		8.25					0.0002		0.0001		0.000005				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**3E-06**	**0.2**	**1E-06**	**0.09**	**9E-08**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	15.10	31.80	11.50			**0.04**	**0.1**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439004

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	12.3	6.03	5.72				0.4		0.2		0.2				
Copper		3100	15.6	12.4	14.2				0.005		0.004		0.005				
Zinc		23000	47.1	49.0	61.8				0.002		0.002		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	6.81	7.60	ND			4E-10	0.000002	4E-10	0.000002						
2-Methylnaphthalene		240	11.9	11.9	ND				0.00005		0.00005						
Acenaphthene		3600	22.4	46.4	2.32				0.000006		0.00001		0.0000006				
Anthracene		18000	46.0	325	2.68				0.000003		0.00002		0.0000001				
Benzo(a)anthracene	1.10E+00		306	1060	19.0			3E-07		1E-06		2E-08					
Benzo(a)pyrene	1.10E-01	18	336	871	24.2			3E-06	0.02	8E-06	0.05	2E-07	0.001				
Benzo(b)fluoranthene	1.10E+00		491	1,250	33.5			4E-07		1E-06		3E-08					
Benzo(g,h,i)perylene	not available		250	757	ND												
Benzo(k)fluoranthene	1.10E+01		125	406	14.5			1E-08		4E-08		1E-09					
Chrysene	1.10E+02		361	1310	ND			3E-09		1E-08							
Dibenz(a,h)anthracene	1.10E-01		68.7	178	ND			6E-07		2E-06							
Fluoranthene		2400	531	2170	36.8				0.0002		0.0009		0.00002				
Fluorene		2400	7.19	56.8	ND				0.000003		0.0000						
Indeno(1,2,3-c,d)pyrene	1.10E+00		192	594	13.8			2E-07		5E-07		1E-08					
Naphthalene	2.00E+00	130	40.7	30.5	1.66			2E-08	0.0003	2E-08	0.000	8E-10	0.00001				
Phenanthrene	not available		247	1370	14.1												
Pyrene		1800	498	1820	36.9				0.0003		0.001		0.00002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**5E-06**	**0.42**	**1E-05**	**0.25**	**3E-07**	**0.193**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	174.00	100.00	12.30			**0.4**	**0.3**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439006

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.00 M	4.85	3.52				0.2		0.2		0.1				
Copper		3100	11.40 M	14.9	13.6				0.004		0.005		0.004				
Zinc		23000	50.30 M	47.8	49.3				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/ RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/ RSL_{nc}	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/ RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	8.10 M	ND	ND			5E-10	0.000002								
2-Methylnaphthalene		240	13.00 M	ND	ND				0.00005								
Acenaphthene		3600	38.00 M	67.7	ND				0.00001		0.00002						
Acenaphthylene	not available		1.20 M	ND	45.2												
Anthracene		18000	97.00 M	44.6	ND				0.000005		0.000002						
Benzo(a)anthracene	1.10E+00		770.00 M	717	382			7E-07		7E-07		3E-07					
Benzo(a)pyrene	1.10E-01	18	770.00 M	442	212			7E-06	0.04	4E-06	0.02	2E-06	0.01				
Benzo(b)fluoranthene	1.10E+00		1100.00 M	946	561			1E-06		9E-07		5E-07					
Benzo(g,h,i)perylene	not available		610.00 M	458	212												
Benzo(k)fluoranthene	1.10E+01		370.00 M	440	209			3E-08		4E-08		2E-08					
Chrysene	1.10E+02		1100.00 M	855	363			1E-08		8E-09		3E-09					
Dibenz(a,h)anthracene	1.10E-01		160.00 M	145	151			1E-06		1E-06		1E-06					
Fluoranthene		2400	1200.00 M	1,040	485				0.0005		0.0004		0.0002				
Fluorene		2400	19.00 M	ND	ND				0.000008								
Indeno(1,2,3-c,d)pyrene	1.10E+00		530.00 M	498	299			5E-07		5E-07		3E-07					
Naphthalene	2.00E+00	130	34.00 M	40.7	ND			2E-08	0.0003	2E-08	0.0003						
Phenanthrene	not available		580.00 M	510	249												
Pyrene		1800	1300.00 M	1,150	477				0.0007		0.0006		0.0003				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.24**	**7E-06**	**0.19**	**4E-06**	**0.13**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	208.00 M	378.00	57.60			**0.5**	**0.9**	**0.1**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439007

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)* Cancer	Noncancer	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Health Risk Estimates Incremental Lifetime Cancer Risk	Non-Cancer Hazard	DU-2 (0'-1' bgs) Health Risk Estimates Incremental Lifetime Cancer Risk	Non-Cancer Hazard	DU-3 (1'-2' bgs) Health Risk Estimates Incremental Lifetime Cancer Risk	Non-Cancer Hazard	DU-4 (2'-3' bgs) Health Risk Estimates Incremental Lifetime Cancer Risk	Non-Cancer Hazard	DU-5 (3'-4' bgs) Health Risk Estimates Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.90 M	4.96	3.15				0.1		0.2		0.1				
Copper		3100	10.60 M	12.9	12.5				0.003		0.004		0.004				
Zinc		23000	48.80 M	52.0	47.1				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	14.00 M	21.1	ND			8E-10	0.000003	1E-09	0.000005						
2-Methylnaphthalene		240	24.00 M	22.6	12.7				0.0001		0.0001						
Acenaphthene		3600	65.00 M	103	6.67				0.00002		0.00003		0.000002				
Acenaphthylene	not available		1.70 M	8.81	47.6												
Anthracene		18000	180.00 M	395	348				0.00001		0.00002		0.00002				
Benzo(a)anthracene	1.10E+00		1400.00 M	2,320	185			1E-06		2E-06		2E-07					
Benzo(a)pyrene	1.10E-01	18	1100.00 M	1,260	382			1E-05	0.06	1E-05	0.07	3E-06	0.021				
Benzo(b)fluoranthene	1.10E+00		1500.00 M	2,430	185			1E-06		2E-06		2E-07					
Benzo(g,h,i)perylene	not available		880.00 M	1,160	112												
Benzo(k)fluoranthene	1.10E+01		700.00 M	1,030	299			6E-08		9E-08		3E-08					
Chrysene	1.10E+02		1500.00 M	2,510	46.7			1E-08		2E-08		4E-10					
Dibenz(a,h)anthracene	1.10E-01		240.00 M	335	576			2E-06		3E-06		5E-06					
Fluoranthene		2400	2100.00 M	3,630	1.13				0.0009		0.002		0.0000				
Fluorene		2400	28.00 M	53.6	169				0.00001		0.00002		0.00007				
Indeno(1,2,3-c,d)pyrene	1.10E+00		840.00 M	1,180	12.6			8E-07		1E-06		1E-08					
Naphthalene	2.00E+00	130	62.00 M	83.2	264			3E-08	0.0005	4E-08	0.0006	1E-07	0.002				
Phenanthrene	not available		960.00 M	1,940	517												
Pyrene		1800	2200.00 M	3,970	330.00				0.001		0.002		0.0002				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**2E-05**	**0.20**	**2E-05**	**0.24**	**9E-06**	**0.13**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	32.30 M	243.00	12.20			**0.1**	**0.6**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439013

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.22						0.1								
Copper		3100	18.4						0.006								
Zinc		23000	52.9						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	48.9	12.5	5.38			3E-09	0.00001	7E-10	0.000003	3E-10	0.000001				
2-Methylnaphthalene		240	69.1	20.4	9.02				0.0003		0.0001		0.00004				
Acenaphthene		3600	231	49.5	31.7				0.00006		0.00001		0.000009				
Anthracene		18000	775	106	133				0.00004		0.000006		0.000007				
Benzo(a)anthracene	1.10E+00		4,900	1,030	813			4E-06		9E-07		7E-07					
Benzo(a)pyrene	1.10E-01	18	4,360	755	499			4E-05	0.2	7E-06	0.04	5E-06	0.03				
Benzo(b)fluoranthene	1.10E+00		11,900	1,410	1,020			1E-05		1E-06		9E-07					
Benzo(g,h,i)perylene	not available		4,620	786	509												
Benzo(k)fluoranthene	1.10E+01		1,870	500	255			2E-07		5E-08		2E-08					
Chrysene	1.10E+02		7,740	1,010	752			7E-08		9E-09		7E-09					
Dibenz(a,h)anthracene	1.10E-01		1,110	184	116			1E-05		2E-06		1E-06					
Fluoranthene		2400	9,110	1560	1,320				0.004		0.001		0.0006				
Fluorene		2400	82.5	23.1	23.3				0.00003		0.00001		0.000010				
Indeno(1,2,3-c,d)pyrene	1.10E+00		4,370	694	440			4E-06		6E-07		4E-07					
Naphthalene	2.00E+00	130	182	65.4	20.1			9E-08	0.0014	3E-08	0.0005	1E-08					
Phenanthrene	not available		3,750	560	598												
Pyrene		1800	8,740	1,410	1,060				0.005		0.001		0.0006				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-05**	**0.4**	**1E-05**	**0.04**	**8E-06**	**0.03**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	25.60 M					**0.1**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439014

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.80	M	3.04		1.96					0.1		0.1		0.1				
Copper		3100	11.80	M	14.1		17.3					0.004		0.005		0.006				
Zinc		23000	46.00	M	50.4		59.8					0.002		0.002		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	6.20	M	14.9		ND				3E-10	0.000001	8E-10	0.000004						
2-Methylnaphthalene		240	9.60	M	16.8		ND					0.00004								
Acenaphthene		3600	24.00	M	76.5		ND					0.00001		0.00002						
Acenaphthylene	not available				106		ND													
Anthracene		18000	68.00	M	16.7		ND					0.000004		0.000001						
Benzo(a)anthracene	1.10E+00		640.00	M	410		7.02				6E-07		4E-07		6E-09					
Benzo(a)pyrene	1.10E-01	18	600.00	M	306		8.83				5E-06	0.03	3E-06	0.02	8E-08	0.0005				
Benzo(b)fluoranthene	1.10E+00		750.00	M	754		21.2				7E-07		7E-07		2E-08					
Benzo(g,h,i)perylene	not available				335		5.35													
Benzo(k)fluoranthene	1.10E+01		540.00	M	246		ND				5E-08		2E-08							
Chrysene	1.10E+02		830.00	M	690		8.22				8E-09		6E-09		7E-11					
Dibenz(a,h)anthracene	1.10E-01		140.00	M	98.7		ND				1E-06		9E-07							
Fluoranthene		2400	960.00	M	824		9.16					0.0004		0.0003		0.000004				
Fluorene		2400	8.80	M	16.8		ND					0.000004								
Indeno(1,2,3-c,d)pyrene	1.10E+00		420.00	M	337		6.63				4E-07		3E-07		6E-09					
Naphthalene	2.00E+00	130	28.00	M	26.7		ND				1E-08	0.0002	1E-08	0.0002						
Phenanthrene	not available		390.00	M	340		ND													
Pyrene		1800	1000.00	M	819		10.5					0.001		0.000		0.00001				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**8E-06**	**0.16**	**5E-06**	**0.12**	**1E-07**	**0.07**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration							DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg							$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	15.30	M	16.40	14.00				**0.04**	**0.04**	**0.04**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439015

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.30 M	3.17	2.76				0.1		0.1		0.1				
Copper		3100	10.40 M	11.6	12.2				0.003		0.004		0.004				
Zinc		23000	43.60 M	50.2	49.5				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	6.10 M	13.5	ND			3E-10	0.000001	8E-10	0.000003						
2-Methylnaphthalene		240	3.30 M	14.3	ND				0.00001								
Acenaphthene		3600	25.00 M	8.78	ND				0.00001		0.000002						
Acenaphthylene	not available		1.40	14.3	ND												
Anthracene		18000	86.00 M	19.9	ND				0.000005		0.000001						
Benzo(a)anthracene	1.10E+00		600.00 M	320	52.3			5E-07		3E-07		5E-08					
Benzo(a)pyrene	1.10E-01	18	450.00 M	205	19.3			4E-06	0.03	2E-06	0.01	2E-07	0.001				
Benzo(b)fluoranthene	1.10E+00		820.00 M	296	41.1			7E-07		3E-07		4E-08					
Benzo(g,h,i)perylene	not available		380.00	201	17.6												
Benzo(k)fluoranthene	1.10E+01		460.00 M	183	ND			4E-08		2E-08							
Chrysene	1.10E+02		720.00 M	321	28.5			7E-09		3E-09		3E-10					
Dibenz(a,h)anthracene	1.10E-01		110.00 M	48.0	ND			1E-06		4E-07							
Fluoranthene		2400	1000.00 M	504	54.4				0.0004		0.0002		0.00002				
Fluorene		2400	9.60 M	14.3	ND				0.000004								
Indeno(1,2,3-c,d)pyrene	1.10E+00		350.00 M	172	25.1			3E-07		2E-07		2E-08					
Naphthalene	2.00E+00	130	23.00 M	13.9	ND			1E-08	0.0002	7E-09	0.0001						
Phenanthrene	not available		430.00 M	268	32.8												
Pyrene		1800	960.00 M	503	49.8				0.001		0.0003		0.00003				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**7E-06**	**0.2**	**3E-06**	**0.1**	**3E-07**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	14.60 M	11.40	11.10			**0.04**	**0.03**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439016

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration								DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface		DU-2 0'-1' bgs		DU-3 1'-2' bgs		DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg								$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	3.80	M	3.78		2.84					0.1		0.1		0.1				
Copper		3100	10.40	M	13.5		15.3					0.003		0.004		0.005				
Zinc		23000	42.40	M	46.1		52.1					0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg								$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	21.00	M	ND		ND				1E-09	0.000005								
2-Methylnaphthalene		240	24.00	M	ND		ND					0.0001								
Acenaphthene		3600	89.00	M	ND		ND					0.00002								
Acenaphthylene	not available		3.80	M	ND		ND													
Anthracene		18000	300.00	M	ND		3.81					0.00002				0.0000002				
Benzo(a)anthracene	1.10E+00		1900.00	M	422		105				2E-06		4E-07		1E-07					
Benzo(a)pyrene	1.10E-01	18	1400.00	M	354		66.2				1E-05	0.08	3E-06	0.02	6E-07	0.004				
Benzo(b)fluoranthene	1.10E+00		2300.00	M	729		124				2E-06		7E-07		1E-07					
Benzo(g,h,i)perylene	not available		1100.00	M	376		69.5													
Benzo(k)fluoranthene	1.10E+01		1200.00	M	373		63.2				1E-07		3E-08		6E-09					
Chrysene	1.10E+02		2300.00	M	509		101				2E-08		5E-09		9E-10					
Dibenz(a,h)anthracene	1.10E-01		330.00	M	113		18.8				3E-06		1E-06		2E-07					
Fluoranthene		2400	3200.00	M	658		153					0.001		0.0003		0.00006				
Fluorene		2400	38.00	M	ND		ND					0.00002								
Indeno(1,2,3-c,d)pyrene	1.10E+00		1100.00	M	392		68.4				1E-06		4E-07		6E-08					
Naphthalene	2.00E+00	130	92.00	M	16.7		ND				5E-08	0.0007	8E-09	0.0001						
Phenanthrene	not available		1400.00	M	297		68.8													
Pyrene		1800	3000.00	M	690		155					0.002		0.0004		0.00009				
											DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates											**2E-05**	**0.2**	**6E-06**	**0.1**	**1E-06**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration						DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface		DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg						$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	16.70	M	14.40	12.30			**0.04**	**0.04**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439017

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.02						0.1								
Copper		3100	17.1						0.006								
Zinc		23000	46.5						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	16.2	2.32	ND			9E-10	0.000004	1E-10	0.0000006						
2-Methylnaphthalene		240	11.8	3.51	ND				0.00005		0.00001						
Acenaphthene		3600	59.1	7.60	2.46				0.00002		0.000002						
Acenaphthylene	not available		2.35	ND	ND												
Anthracene		18000	196	17.0	14.6				0.00001		0.000001		0.0000008				
Benzo(a)anthracene	1.10E+00		1,720	174	80.6			2E-06		2E-07		7E-08					
Benzo(a)pyrene	1.10E-01	18	872	115	33.2			8E-06	0.05	1E-06	0.01	3E-07	0.002				
Benzo(b)fluoranthene	1.10E+00		1,750	256	121			2E-06		2E-07		1E-07					
Benzo(g,h,i)perylene	not available		1,100	119	36.0												
Benzo(k)fluoranthene	1.10E+01		554	32.3	ND			5E-08		3E-09							
Chrysene	1.10E+02		1,640	185	77.1			1E-08		2E-09		7E-10					
Dibenz(a,h)anthracene	1.10E-01		254	28.2	8.37			2E-06		3E-07		8E-08					
Fluoranthene		2400	2,690	200	161				0.001		0.0001		0.00007				
Fluorene		2400	26.0	2.37	2.02				0.00001		0.000001						
Indeno(1,2,3-c,d)pyrene	1.10E+00		1,120	131	66.5			1E-06		1E-07		6E-08					
Naphthalene	2.00E+00	130	67.0	7.88	2.50			3E-08	0.0005	4E-09	0.00006	1E-09	0.00002				
Phenanthrene	not available		1,090	94.2	71.5												
Pyrene		1800	2,520	208	113				0.001		0.0001		0.00006				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.2**	**2E-06**	**0.01**	**6E-07**	**0.002**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	17.30					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439026

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	6.49						0.2								
Copper		3100	14.9						0.005								
Zinc		23000	56.9						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU2}/\ RSL_{nc}$	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU4}/\ RSL_{nc}$	$EPC_{DU5}\ x0.001/RSL_c*1x10^{-6}$	$EPC_{DU5}/\ RSL_{nc}$
1-Methylnaphthalene	1.80E+01	4200	19.9	80.5	146			1E-09	0.000005	4E-09	0.00002	8E-09	0.0000				
2-Methylnaphthalene		240	23.5	124	224				0.00010		0.0005		0.0009				
Acenaphthene		3600	77.0	368	629				0.00002		0.0001		0.0002				
Acenaphthylene	not available		3.71	4.46	8.49												
Anthracene		18000	216	1,140	1,660				0.00001		0.00006		0.00009				
Benzo(a)anthracene	1.10E+00		1,540	8,600	12,800			1E-06		8E-06		1E-05					
Benzo(a)pyrene	1.10E-01	18	732	4,460	9,970			7E-06	0.04	4E-05	0.2	9E-05	0.6				
Benzo(b)fluoranthene	1.10E+00		1,430	9,650	17,600			1E-06		9E-06		2E-05					
Benzo(g,h,i)perylene	not available		916	3,460	10,700												
Benzo(k)fluoranthene	1.10E+01		512	1,720	1,910			5E-08		2E-07		2E-07					
Chrysene	1.10E+02		1,280	6,970	17,400			1E-08		6E-08		2E-07					
Dibenz(a,h)anthracene	1.10E-01		212	977	1,840			2E-06		9E-06		2E-05					
Fluoranthene		2400	2,410	9,770	23,200				0.001		0.004		0.01				
Fluorene		2400	37.6	220	329				0.00002		0.00009						
Indeno(1,2,3-c,d)pyrene	1.10E+00		887	3,530	9,870			8E-07		3E-06		9E-06					
Naphthalene	2.00E+00	130	93.6	318	613			5E-08	0.0007	2E-07	0.002	3E-07	0.005				
Phenanthrene	not available		1,140	4,510	12,400												
Pyrene		1800	2,270	9,990	22,200				0.001		0.006		0.01				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.3**	**7E-05**	**0.3**	**1E-04**	**0.6**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	24.00					**0.06**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439032

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.08						0.1								
Copper		3100	14.2						0.005								
Zinc		23000	51.7						0.002								
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	15.1	17.7	260			8E-10	0.000004	1E-09	0.000004	1E-08	0.00006				
2-Methylnaphthalene		240	21.2	27.1	406				0.00009		0.0001		0.002				
Acenaphthene		3600	53.3	78.2	1,050				0.00001		0.00002		0.0003				
Acenaphthylene	not available		2.15	NA	12.0												
Anthracene		18000	145	151	2,080				0.00001		0.00001		0.0001				
Benzo(a)anthracene	1.10E+00		1,180	1,150	18,300			1E-06		1E-06		2E-05					
Benzo(a)pyrene	1.10E-01	18	669	814	14,700			6E-06	0.04	7E-06	0.05	1E-04	0.8				
Benzo(b)fluoranthene	1.10E+00		1,920	1,600	23,700			2E-06		1E-06		2E-05					
Benzo(g,h,i)perylene	not available		712	788	16,300												
Benzo(k)fluoranthene	1.10E+01		367	453	2,330			3E-08		4E-08		2E-07					
Chrysene	1.10E+02		1,170	1,190	23,400			1E-08		1E-08		2E-07					
Dibenz(a,h)anthracene	1.10E-01		182	197	2,360			2E-06		2E-06		2E-05					
Fluoranthene		2400	1,480	1,290	28,200				0.001		0.0005		0.01				
Fluorene		2400	21.8	36.3	554				0.00001		0.00002						
Indeno(1,2,3-c,d)pyrene	1.10E+00		686	743	14,900			6E-07		7E-07		1E-05					
Naphthalene	2.00E+00	130	65.1	79.8	1,070			3E-08	0.0005	4E-08	0.001	5E-07	0.008				
Phenanthrene	not available		615	704	14,700												
Pyrene		1800	1,380	1,450	28,300				0.001		0.001		0.02				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.2**	**1E-05**	**0.05**	**2E-04**	**0.9**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	17.00					**0.04**				

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439033

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	4.76	4.54	3.01				0.2		0.1		0.1				
Copper		3100	14.2	15.9	14.2				0.005		0.005		0.005				
Zinc		23000	49.3	53.2	57.7				0.002		0.002		0.003				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	19.3	72.7	6.13			1E-09	0.000005	4E-09	0.00002	3E-10	0.000001				
2-Methylnaphthalene		240	10.3	43.5	3.45				0.00004		0.0002		0.00001				
Acenaphthene		3600	105	363	28.2				0.00003		0.0001		0.00001				
Acenaphthylene	not available		14.3	64.9	ND												
Anthracene		18000	141	493	107				0.00001		0.00003		0.000006				
Benzo(a)anthracene	1.10E+00		1,270	3,630	659			1E-06		3E-06		6E-07					
Benzo(a)pyrene	1.10E-01	18	750	1,990	334			7E-06	0.04	2E-05	0.11	3E-06	0.02				
Benzo(b)fluoranthene	1.10E+00		1,870	4,320	734			2E-06		4E-06		7E-07					
Benzo(g,h,i)perylene	not available		849	1,980	300												
Benzo(k)fluoranthene	1.10E+01		570	1,270	208			5E-08		1E-07		2E-08					
Chrysene	1.10E+02		1,630	4,150	621			1E-08		4E-08		6E-09					
Dibenz(a,h)anthracene	1.10E-01		214	542	87.2			2E-06		5E-06		8E-07					
Fluoranthene		2400	1,810	5,030	1,080				0.001		0.002		0.0005				
Fluorene		2400	17	110	17.0				0.00001		0.00005		0.000007				
Indeno(1,2,3-c,d)pyrene	1.10E+00		752	1,680	285			7E-07		2E-06		3E-07					
Naphthalene	2.00E+00	130	75	270	27.6			4E-08	0.0006	1E-07	0.0021	1E-08	0.0002				
Phenanthrene	not available		768	2,500	608												
Pyrene		1800	2,350	5,850	1,010				0.001		0.0033		0.00056				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.2**	**3E-05**	**0.3**	**5E-06**	**0.1**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res\text{-}lead}$	$EPC_{DU2}/RSL_{res\text{-}lead}$	$EPC_{DU3}/RSL_{res\text{-}lead}$	$EPC_{DU4}/RSL_{res\text{-}lead}$	$EPC_{DU5}/RSL_{res\text{-}lead}$
Lead	400	13.20	50.70	14.00			**0.03**	**0.1**	**0.04**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32439035

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31		4.83	3.36						0.2		0.1				
Copper		3100		30.1	15.2						0.01		0.005				
Zinc		23000		48.5	56.5						0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/RSL_{nc}$	$EPC_{DU2}x0.001/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$(EPC_{DU3}x0.001)/RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/RSL_{nc}$	$EPC_{DU4}x0.001/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}x0.001/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200		35.4	ND					2E-09	0.00001						
Acenaphthene		3600		165	3.02						0.00005		0.000001				
Acenaphthylene	not available			72	ND												
Anthracene		18000		124	ND						0.000007						
Benzo(a)anthracene	1.10E+00			1,610	41.4					1E-06		4E-08					
Benzo(a)pyrene	1.10E-01	18		931	27.2					8E-06	0.05	2E-07	0.002				
Benzo(b)fluoranthene	1.10E+00			1,800	64.9					2E-06		6E-08					
Benzo(g,h,i)perylene	not available			931	26.2												
Benzo(k)fluoranthene	1.10E+01			875	15.5					8E-08		1E-09					
Chrysene	1.10E+02			2,210	55.4					2E-08		5E-10					
Dibenz(a,h)anthracene	1.10E-01			256	8.29					2E-06		8E-08					
Fluoranthene		2400		2,150	60.5						0.0009		0.00003				
Fluorene		2400		14.9	ND						0.00001						
Indeno(1,2,3-c,d)pyrene	1.10E+00			871	24.7					8E-07		2E-08					
Naphthalene	2.00E+00	130		109	4.92					5E-08	0.0008	2E-09	0.00004				
Phenanthrene	not available			954	22.5												
Pyrene		1800		2,590	73.0						0.001		0.00004				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates										**1E-05**	**0.22**	**4E-07**	**0.12**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400		21.40	11.90				**0.05**	**0.03**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

Site: Kingman APN 32404686

Detected Contaminants	U.S. EPA Residential Screening Levels (mg/kg)*		Exposure Point Concentration					DU-1 (Surface) Depths Health Risk Estimates		DU-2 (0'-1' bgs) Health Risk Estimates		DU-3 (1'-2' bgs) Health Risk Estimates		DU-4 (2'-3' bgs) Health Risk Estimates		DU-5 (3'-4' bgs) Health Risk Estimates	
	Cancer	Noncancer	DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard	Incremental Lifetime Cancer Risk	Non-Cancer Hazard
Metals	mg/kg		mg/kg					$EPC_{DU1}/RSL_c*1x10^{-6}$	EPC_{DU1}/RSL_{nc}	$EPC_{DU2}/RSL_c*1x10^{-6}$	EPC_{DU2}/RSL_{nc}	$EPC_{DU3}/RSL_c*1x10^{-6}$	EPC_{DU3}/RSL_{nc}	$EPC_{DU4}/RSL_c*1x10^{-6}$	EPC_{DU4}/RSL_{nc}	$EPC_{DU5}/RSL_c*1x10^{-6}$	EPC_{DU5}/RSL_{nc}
Antimony		31	2.80 M	3.65	2.61				0.09		0.1		0.08				
Copper		3100	10.00 M	9.10	10.1				0.003		0.003		0.003				
Zinc		23000	41.90 M	40.4	41.5				0.002		0.002		0.002				
Polycyclic Aromatic Hydrocarbons	mg/kg		µg/kg					$(EPC_{DU1}x0.001) / RSL_c*1x10^{-6}$	$EPC_{DU1}x0.001/ RSL_{nc}$	$EPC_{DU2}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU2}/ RSL_{nc}	$(EPC_{DU3}x0.001)/ RSL_c*1x10^{-6}$	$EPC_{DU3}x0.001/ RSL_{nc}$	$EPC_{DU4}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU4}/ RSL_{nc}	$EPC_{DU5}x0.001/ RSL_c*1x10^{-6}$	EPC_{DU5}/ RSL_{nc}
1-Methylnaphthalene	1.80E+01	4200	7.20 M	ND	ND			4E-10	0.000002								
2-Methylnaphthalene		240	11.00 M	3.56	ND				0.00005		0.00001						
Acenaphthene		3600	39.00 M	3.88	ND				0.00001								
Acenaphthylene	not available		1.20 M	ND	ND												
Anthracene		18000	92.00 M	10.6	1.49				0.00001		0.0000006		0.0000001				
Benzo(a)anthracene	1.10E+00		840.00 M	96.1	7.01			8E-07		9E-08		6E-09					
Benzo(a)pyrene	1.10E-01	18	830.00 M	74.2	3.36			8E-06	0.05	7E-07	0.004	3E-08	0.0002				
Benzo(b)fluoranthene	1.10E+00		1100.00 M	150	2.85			1E-06		1E-07		3E-09					
Benzo(g,h,i)perylene	not available		630.00 M	77.2	6.78												
Benzo(k)fluoranthene	1.10E+01		440.00 M	78.0	15.6			4E-08		7E-09		1E-09					
Chrysene	1.10E+02		1200.00 M	127	11.1			1E-08		1E-09		1E-10					
Dibenz(a,h)anthracene	1.10E-01		170.00 M	22.7	ND			2E-06		2E-07							
Fluoranthene		2400	1300.00 M	159	5.60				0.0005		0.0001		0.000002				
Fluorene		2400	13.00 M	3.42	ND				0.000005		0.000001						
Indeno(1,2,3-c,d)pyrene	1.10E+00		590.00 M	73.4	23.5			5E-07		7E-08		2E-08					
Naphthalene	2.00E+00	130	26.00 M	4.48	1.49			1E-08	0.00020	2E-09	0.00003	7E-10	0.00001				
Phenanthrene	not available		530.00 M	58.2	2.02												
Pyrene		1800	1500.00 M	187	10.7				0.001		0.0001		0.000006				
								DU-1		DU-2		DU-3		DU-4		DU-5	
Total Estimates								**1E-05**	**0.1**	**1E-06**	**0.13**	**6E-08**	**0.09**				

Lead Screening	U.S.EPA Lead Residential Screening Level	Exposure Point Concentration					DU-1 (Surface) Depths Lead Ratio#	DU-2 (0'-1' bgs) Lead Ratio#	DU-3 (1'-2' bgs) Lead Ratio#	DU-4 (2'-3' bgs) Lead Ratio#	DU-5 (3'-4' bgs) Lead Ratio#
		DU-1 Surface	DU-2 0'-1' bgs	DU-3 1'-2' bgs	DU-4 2'-3' bgs	DU-5 3'-4' bgs					
	mg/kg	mg/kg					$EPC_{DU1}/RSL_{res-lead}$	$EPC_{DU2}/RSL_{res-lead}$	$EPC_{DU3}/RSL_{res-lead}$	$EPC_{DU4}/RSL_{res-lead}$	$EPC_{DU5}/RSL_{res-lead}$
Lead	400	18.40 M	12.30	9.48			**0.05**	**0.03**	**0.02**		

Notes:
mg/kg - milligram per kilogram
µg/kg - microgram per kilogram
EPC - Exposure Point Concentration
M - maximum concentration used as EPC

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APPENDIX C

DATA QUALITY SUMMARY REPORT

APPENDIX C
DATA QUALITY SUMMARY REPORT
REMEDIAL INVESTIGATION

Former Skeet Range MRS03
Kingman Ground-to-Ground Gunnery Range
Kingman, Mohave County, Arizona

USACE Contract No. W912PL-17-C-0006

Prepared for:

United States Army Corps of Engineers
Los Angeles District

Prepared by:

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May 2020

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ABBREVIATIONS AND ACRONYMS

%D	percent difference
%R	percent recovery
%RSD	percent relative standard deviation
APN	Assessor's Parcel Number
bgs	below ground surface
CoC	chain-of-custody
COPC	chemical of potential concern
DoD	Department of Defense
DU	Decision Unit
EB	equipment blank
FS	Feasibility Study
GPS	Global Positioning System
GTG	Ground-to-Ground
ISM	incremental sampling method
ITRC	Interstate Technology & Regulatory Council
LCS	laboratory control sample
LOQ	limit of quantitation
MRS	Munitions Response Site
MS/MSD	matrix spike and matrix spike duplicate
NOREAS	NOREAS, Inc.
PAHs	polycyclic aromatic hydrocarbons
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QCSB	quality control source blank
RI	remedial investigation
RPD	relative percent difference
SIM	selected ion mode
TestAmerica	TestAmerica Laboratories, Inc.

USACE	United States Army Corp of Engineer
U.S. EPA	U.S. Environmental Protection Agency

C.1.0 INTRODUCTION

This appendix describes the quality and usability of analytical data collected for the remedial investigation (RI) activities conducted at the Former Skeet Range Munitions Response Site 03 (MRS03), Kingman Ground-to-Ground (GTG) Gunnery Range, (the MRS03 Site) in Kingman, Mohave County, Arizona. Data were collected during RI soil sampling using the incremental sampling method (ISM) at each parcel [identified by its unique assessor parcel number (APN)]. Soil sampling activities were conducted from January 15, 2019 through October 31, 2019 and followed the procedures specified in the *Final Remedial Investigation (RI) and Feasibility Study (FS) Work Plan, Formerly Used Defense Site, Military Munitions Response Program, MRS03-15 Skeet Ranges, Former Kingman Ground-to-Ground (GTG) Gunnery Range, Kingman, Mohave County, Arizona, Formerly Used Defense Site Property No. J09AZ041201* (Eco, 2014) (project Work Plan), as amended by the *Final Uniform Federal Policy Quality Assurance Project Plan Addendum No. 1 Remedial Investigation of Former Skeet Range MRS03, Kingman Ground-To-Ground Gunnery Range, Mohave County, Arizona* (NOREAS, 2018) (project QAPP).

The data quality evaluation was determined based on verification of field and laboratory quality assurance (QA)/quality control (QC) samples collected and analyzed during this project. QA/QC for field activities was ensured through rigorous documentation, equipment calibration (where applicable), and the collection of field QC samples. Additionally, QC analyses were performed by the analytical laboratory to determine analytical precision and accuracy of the analyses determined by laboratory control samples (LCSs), matrix spike and matrix spike duplicate (MS/MSD) samples, matrix duplicates, and surrogate spikes. In addition, results from method blanks were evaluated to assess the possibility of contamination of environmental samples that may have been introduced during sampling and laboratory activities. All analyses were performed in accordance with the Final QAPP (NOREAS, 2018) and the DoD QSM version 5.1 (DoD, 2017) requirements. For this project, polycyclic aromatic hydrocarbons (PAHs) and metals: antimony, copper, lead, and zinc are considered the contaminants of potential concern (COPCs). COPCs were reported in mg/kg for metals and in µg/kg for PAHs.

All soil investigational samples collected during this project were submitted under documented chain-of-custody (COC) procedures to Eurofins Environment Testing TestAmerica's Irvine, California facility. The Irvine facility repackaged samples for shipping to the Eurofins Environment Testing TestAmerica's Arvada, Colorado (Eurofins TestAmerica) facility, which maintains current Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) accreditations.

Environmental samples were processed using the ISM procedure and analyzed for PAHs by United States Environmental Protection Agency (USEPA) Method 8270C selected ion mode (SIM), and for the metals: antimony, copper, lead, and zinc by USEPA Method 6010B. Soil samples received at the laboratory were dried, mechanically ground, and incrementally sampled followed by digestion according to laboratory SOPs and analytical method. The soil samples for PAHs were processed through the same ISM procedure except for the grinding step as documented in the Field Change Request Form (FCRF)-001 (NOREAS, 2019a). Following ISM, samples were extracted and analyzed according to EPA method 8270C using gas chromatography/mass spectrometer (GC/MS) in SIM mode.

A third-party validation firm, Synectics in Sacramento, California, performed data validation on the chemical analyses for the project samples, as discussed in Section C5.0.

The chain-of-custody records, laboratory analytical results, and data validation reports are provided in Attachment 1 of the RI Report as a part of the parcel reports.

C2.0 FIELD DOCUMENTATION

A number of QA/QC measures were employed in the field to ensure that the environmental samples collected were representative of site conditions at the time of sampling. Field equipment was documented in a field notebook and field forms. Field documentation protocols included use of a field notebook, APN (parcel) field log form, photographic documentation of field sampling, global positioning system (GPS) coordinates of the parcel and sampling locations and COC forms. The GPS survey data, field logs, and photographic logs for each parcel are presented as a part of the respective parcel report in Attachment 1, in the Remedial Investigation Report.

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C.3.0 FIELD QUALITY CONTROL SAMPLES

In addition to the soil samples, field QC samples were collected and analyzed as specified in the Work Plan (Eco, 2014) and Final QAPP Addendum (NOREAS, 2018). During the RI, 74 equipment blanks were collected and analyzed. In addition, MS/MSDs were also collected and analyzed at a rate of 1 per 20 field samples as specified in the Final QAPP Addendum (NOREAS, 2018). To ensure data comparability, ISM sampling procedures of soil samples were followed using guidelines from the United States Army Corp of Engineer (USACE) guidelines (USACE, 2009) and the Interstate Technology & Regulatory Council (ITRC) guidance (ITRC, 2012), and analytical processes followed standardized protocols and published EPA analytical methods identical to the original field samples.

C3.1 Equipment (Rinsate) Blanks

During this RI, 74 quality control equipment blank (EB) samples were collected and analyzed to evaluate the possibility of cross-contamination resulting from sampling equipment and activities. In accordance with the Final QAPP Addendum (NOREAS, 2018), an equipment rinsate was collected at the completion of each parcel sampled by washing the laboratory-provided rinse water over the cleaned hand auger bucket into the sample containers. Equipment blanks were submitted for analysis for PAHs by EPA Method 8270C SIM, and for the metals: antimony, copper, lead and zinc by EPA Method 6010B. Data validation reported the following:

- Trace concentrations of copper, lead, or zinc was detected in five EB samples.
- Trace concentrations of select PAHs (e.g., Benzo(a)pyrene, benzo(g,h,i)perylene, and benzo(k)fluoranthene) were detected in eight EB samples.
- Extraction holding time requirements were exceeded for PAHs in 18 EB samples.
- Samples designated as EB-030519 (APN 32405168), EB-030619 (APN 32404487), and EB-040919 (APN 32437016) were qualified as rejected for gross (greater than 2 times) holding time exceedance.
- Data for select PAHs were rejected (R-qualified) for EB-030619 (32404487) due to low surrogate or laboratory control sample recoveries indicating potential negative bias in results.

Concentrations of these detected analytes in the associated samples were adjusted to “estimated,” “non-detected estimated,” or “non-detect” as appropriate.

Relevant data validation qualifiers (i.e. “J”; “UJ”; “U”; “R”) are defined in Section C5.0 and data validation reports provided in Appendix B. A summary of the validation of equipment blanks collected by sample ID and associated parcel APN, analyte contaminants, limits of quantitation (LOQs), analytical results and qualified final results is provided in Table C-1 and C-2, respectively.

C3.2 Field Duplicates/Triplicates

The purpose of field duplicate samples is to evaluate the precision of the overall sample collection and analysis processes by calculating the relative percent difference (RPD) for duplicate sample concentration. A field duplicate consists of two collocated samples of the same matrix collected at the same time and location, to the extent possible, using the same sampling techniques.

In accordance with the Final QAPP Addendum field duplicates were not collected as triplicate ISM samples were collected at each Decision Unit (DU)/parcel sampling grid. Soil samples were collected from each DU as 3 replicates to represent the surface soils (0- to 2-inches), and as 3 replicates for the subsurface soils [0- to 1 foot below ground surface (bgs); 1- to 2 feet bgs, and if required, 2- to 3 feet bgs, 3- to 4-feet bgs] The sampling process was repeated for the two subsequent replicate samples used the same sampling techniques, and collected at the same time and location.

C3.3 Matrix Spike and Matrix Spike Duplicate Samples

MS/MSD samples are prepared for chemical analysis by spiking the sample with a known amount of a target analyte. Following spike addition, the sample is carried through the complete sample preparation process along with the other samples in the batch. The percent recoveries (%Rs) for the MS/MSD samples are compared against each other and against the known amount of the spike to determine the accuracy (bias) of the analytical process. RPD from the MS/MSD samples is also calculated to evaluate the precision of the analytical process. For this project, one MS/MSD sample was collected for approximately every 20 soil samples. An evaluation is presented in Section C4.0.

C4.0 LABORATORY QUALITY CONTROL

Laboratory QC samples were prepared and analyzed by the laboratory to monitor the analytical accuracy and precision processes. The laboratory analyzed all QC samples at the method-required frequencies and as specified in the project-specific Final QAPP Addendum (NOREAS, 2018) and DoD QSM version 5.1 (DoD, 2017). The laboratory QC samples for this project included method blanks, initial and continuing calibration blanks, LCSs, initial and continuing calibration verifications, second source calibration verification standards (PAHs only), surrogate spikes, interference check standards (metals only), and MS/MSD samples.

Laboratory QC analyses were within the project-specified or method criteria except for the following constituents and samples:

Synectics #280-122201-1

Lab Work Order# J122201-1: (APN 31021063)

<u>PAHs by EPA Method 8270C SIM</u>

- MS/MSD, and/or triplicate recoveries were outside control limits for select PAHs in affected samples MRS03-APN31021063-SS001, -SS002, and -SS003, which were qualified using a “J/UJ”.

<u>Metals by EPA Method 6010B</u>

- MS recoveries outside control limits for antimony, copper, lead, and zinc in affected samples MRS03-APN31021063-SS001, -SS002, -SS003, -SS1001, -SS1002, and -SS1003. Antimony in affected samples MRS03-APN31021063-SS001, -SS002, and SS003 was qualified as “R” (rejected) due to low MS/MSD recoveries. Copper, lead, and zinc in affected samples MRS03-APN31021063-SS001, -SS002, and -SS003 were qualified using a “J”.

Synectics #280-121928-1

Lab Work Order# J121928-1: (APN 31021078)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries exceeded control limits for PAHs in affected sample MRS03-APN31021078-SS001 were qualified using a “J/UJ”.
- MS recoveries outside control limits for benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene in affected samples MRS03-APN31021078-SS001, -SS002, and -SS003 were qualified using a “J” for detected results.

<u>Metals by EPA Method 6010B</u>

- Copper detected in method grinding blank in affected samples MRS03-APN31021078-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “UJ” for detected results.

- MS, MSD, and/or triplicate recoveries were outside control limits for antimony, lead, and zinc in affected samples MRS03-APN31021078-SS1001, -SS1002, and -SS1003. MS recoveries for antimony and zinc in affected samples MRS03-APN31021078-SS1001, -SS1002, and -SS1003 were qualified using a "UJ" for antimony and a "J" for zinc in detected results. MS/MSD and/or triplicate recoveries outside control limits for lead in affected samples MRS03-APN31021078-SS1001, -SS1002, and -SS1003 were qualified using a "J" for detected results.

Synectics #280-123705-1 and #280-124-364-1

Lab Work Order# J123705/J124364: (APN 31021080)

Metals by EPA Method 6010B

- Copper and lead found in the grinding blank in affected samples MRS03-APN31021080-SS001 through -SS003, -SS1001 through -SS1003, and -SS2001 through -SS2003, were qualified using a "J/UJ".
- MS/MSD recoveries outside control limits for antimony, lead, and zinc in affected samples MRS03-APN31021080-SS1001, -SS1002, and -SS1003, were qualified using a "J/UJ" for antimony, lead and zinc.

Synectics #280-121679-1

Lab Work Order# J121679-1: (APN 31038002)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside of the project limits in sample MRS03-APN31038003 for select PAHs. Results were qualified using "J" for detected results and "UJ" for not detected.
- Prep holding times outside project limits in samples sample MRS03-APN31038002, -SS002, -SS1001, and 1002 for PAHs were qualified using a "J/UJ".

Metals by EPA Method 6010B

- MS recoveries outside control limits for antimony and lead in affected samples MRS03-APN31038002-SS1001, -SS1002, and -SS1003 were qualified using a "J/UJ" for antimony and lead.

Synectics #280-124017-1

Lab Work Order# J124017-1: (APN 32404213)

PAHs by EPA Method 8270C SIM

- MS/MSD, MS/MSD RPD, LCS/LCSD, RPD, and surrogate recoveries were outside control limits due to samples prepared one day outside holding times in affected samples MRS03-APN32404213-SS001, -SS002, and-SS003. All PAHs were qualified using a "J" for detected results.

Metals by EPA Method 6010B

- Copper, lead, and zinc detected in method grinding blank in affected samples MRS03-APN32404213-SS001, -SS002, and-SS003 were qualified using a "J" for detected results.

- MS and MSD outside control limits for antimony in affected samples MRS03-APN32404213-SS1001, -SS1002, and -SS1003 were qualified using a "UJ".

Synectics #280-120010-1

Lab Work Order# J120010-1: (APN 32404241)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries were outside project limits in sample MRS03-APN32404241- SS001, for all PAHs analyzed were qualified using "J/UJ".

<u>Metals by EPA Method 6010B</u>

- Trace values of copper and lead were detected in the laboratory blank. Copper in samples MRS03-APN32404241-SS001, -SS002, -SS003, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "J". Lead in samples MRS03-APN32404241-SS2001, -SS2002, and -SS2003 were qualified using a "J".

Synectics #280-120009-1

Lab Work Order# J120009-1: (APN 32404242)

<u>PAHs by EPA Method 8270C SIM</u>

- Laboratory triplicate RSD was above the control limits for benzo(b)fluoranthene, chrysene, fluoranthene, and naphthalene in sample MRS03-APN32404242- SS1003 for which the results were qualified using a "J."
- Surrogate recoveries were outside project limits in sample MRS03-APN32404242- SS1003, for four PAHs. Data were qualified using a "J".
- Method holding time was slightly exceeded for EB-020519 resulting in UJ qualification for all PAHs.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper and lead were found in the laboratory blank. Copper in affected samples MRS03-APN32404242-SS001, -SS002, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results. Lead in affected samples MRS03-APN32404242-SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results.
- MS was recovered below the project limits for antimony and zinc in samples MRS03-APN32404242-SS1001. Antimony was qualified "R" (rejected) for not detected results and zinc was qualified using a "J".
- MS was recovered slightly below the project limits for copper. Parent (spiked) samples was qualified using a "J" for detected results.

Synectics #280-120732-1

Lab Work Order# J120009-1: (APN 32404279)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries outside project limits in sample MRS03-APN32404279-SS001 for all PAHs analyzed and were qualified using "J/UJ".

<u>Metals by EPA Method 6010B</u>

- Trace concentrations of copper and lead were found in the laboratory blank. Copper in affected samples MRS03-APN32404279-SS001, -SS002, and -SS003 and lead in sample MRS03-APN32404279-SS003 were qualified using a "J" for detected results.

Synectics #280-120736-1

Lab Work Order# J120736-1: (APN 32404280)

<u>PAHs by EPA Method 8270C SIM</u>

- Triplicate RSDS outside control limits for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene were qualified using "J" in samples MRS03-APN32404280-SS001, and -SS002.

- Surrogate recoveries were outside project limits in samples MRS03-APN32404280-SS002, and -SS2003 for select PAHs which were qualified using a "J/UJ".

<u>Metals by EPA Method 6010B</u>

- Trace values of copper and lead were found in the laboratory blank. Copper in affected samples MRS03-APN32404280- SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results. Lead in affected sample MRS03-APN32404280-SS1002, -SS1003, SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected result.

- MS recoveries were outside project limits for antimony, zinc, and lead in affected samples MRS03-APN32404280-SS001, -SS002, and -SS003. Zinc and antimony were qualified using a using a "J/UJ".

Synectics #280-120972-1

Lab Work Order# J120972-1: (APN 32404487)

<u>PAHs by EPA Method 8270C SIM</u>

- MS/MSD, and/or Triplicate RSD values were outside the control limits in sample MRS03-APN32404487-SS001 for fluoranthene, naphthalene, phenanthrene, and pyrene, in sample MRS03-APN32404487-SS002 for 2—methylnaphthalene, anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene, and in sample MRS03-APN32404487-SS003 for 2—methylnaphthalene, anthracene, fluoranthene, naphthalene, phenanthrene, and pyrene. Analytes were qualified using a "J" for detected results.

- Surrogate recoveries outside project limits in sample MRS03-APN32404487-SS001, for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene fluoranthene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthene, and pyrene were qualified using "J" for detected results. 2—

methylnaphthalene, acenaphthene, anthracene, and fluorene in affected sample MRS03-APN32404487- SS001 were qualified using a “UJ”.

Metals by EPA Method 6010B

- Trace values of copper were found in the grinding blank. Copper in affected samples MRS03-APN32404487-SS001, -SS002, and -SS003, were qualified using a “J” for detected results.
- MS/MSD, and/or Triplicate RSD values were outside the control limits. Antimony in affected samples MRS03-APN32404487-SS001, -SS002, and -SS003 were qualified using a “UJ”. Copper and lead in affected samples MRS03-APN32404487-SS001, -SS002, and -SS003 were qualified using a “J” for detected results. Zinc in affected samples MRS03-APN32404487-SS001 and -SS002 were qualified using a “J” for detected results.

Synectics #280-120076-1

Lab Work Order# J120076-1: (APN 32404526)

PAHs by EPA Method 8270C SIM

- MS/MSD RPD and triplicate RSD were outside project limits for in samples MRS03-APN32404526- SS001, -SS002, and SS003 were qualified using either “J/UJ”.
- Surrogate recoveries were outside project limits in sample MRS03-APN32404526- SS1002 for all PAHs analyzed which were qualified using “J/UJ”.

Metals by EPA Method 6010B

- Trace values of copper and lead were found in the laboratory blank. Copper in affected samples MRS03-APN32404526-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were adjusted to LOQ values as not detected using a “U”. Lead in affected samples MRS03-APN32404526-SS2001, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were adjusted to LOQ values as not detected using a “U”.
- MS recovery were outside project limits for antimony in affected samples MRS03-APN32404526-SS001, -SS002, and -SS003 and were qualified using a “UJ”.

Synectics #280-120514-1

Lab Work Order# J120514-1: (APN 32404527)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside project limits in sample MRS03-APN32404527- SS003, for all PAHs analyzed were qualified using “J/UJ”.

Metals by EPA Method 6010B

- Trace values of copper were found in the laboratory grinding blanks. Copper in affected samples MRS03-APN32404527-SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “J” for detected results. Copper in affected sample MRS03-APN32404527-SS001 was qualified using a “UJ”.

Synectics #280-120510-1

Lab Work Order# J120510-1: (APN 32404550)

<u>PAHs by EPA Method 8270C SIM</u>

- MS/MSD recoveries were outside the control limits for lead and zinc. Lead and zinc in affected samples MRS03-APN32404550-SS1001, -SS1002, and-SS1003 were qualified using a “J” for detected results.
- MS/MSD recoveries and triplicate RSDs were outside control limits in samples MRS03-APN32404550- SS1001, -SS1002, and -SS1003 for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthene, and pyrene) were qualified using “J” for detected results.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32404550-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “J” for detected results.
- Antimony in affected samples MRS03-APN32404550-SS001, -SS002, and -SS003 were qualified “R” (rejected) due to low MS/MSD recoveries.

Synectics #280-119852-1

Lab Work Order# J119852-1: (APN 32404553)

<u>PAHs by EPA Method 8270C SIM</u>

- MS/MSD RPDs and triplicate RSDs were outside control limits for chrysene, fluoranthene, and pyrene and were qualified using “J” in samples MRS03-APN32404553-SS1001 and -SS1003; and for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, indeno(1,2,3-c,d)pyrene, and phenanthrene were qualified using “J” in sample MRS03-APN32404553- SS1003.
- Surrogate recoveries outside project limits in samples MRS03-APN32404553- SS001, -SS002, -SS2003, -SS1002, and -SS2001 for all PAHs which were qualified using “J/UJ”.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper and lead were found in the laboratory blank. Copper in affected samples MRS03-APN32404553-SS001, -SS002, -SS003, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 and lead in samples MRS03-APN32404553-SS2001, -SS2002, and -SS2003 were qualified using a “J” for detected results.

Synectics #280-119538-1 and #280-119538-2

Lab Work Order# J119538-1 and J119538-2: (APN 32404558)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries were outside project limits in samples MRS03-APN32404558- SS001 for naphthalene, and in samples MRS03-APN32404558- SS002and -SS2003 for all PAHs analyzed were qualified using “J/UJ”.
- Due to the exceedance of maximum extraction holding time, not -detected results for all PAHs were qualified using a “R (rejected)” for samples MRS03-APN32404558- SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32404558-SS001, -SS002, and -SS003, were qualified using a “J” for detected results. Copper in affected samples MRS03-APN32404558-SS1001, -SS1002, -SS2001, SS2002, and -SS2003, were qualified using a “U”.
- MS recoveries outside project limits for lead, and zinc were qualified using a “J” in parent sample MRS03-APN32404558-SS1001.

Synectics #280-122779-1

Lab Work Order# J122779-1: (APN 32404624)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries outside control limits in affected sample MRS03-APN32404624-SS001R for phenanthrene, and pyrene were qualified using a “J” for detected results. Surrogate recoveries outside control limits in affected samples in APN32404624-SS002R, -SS003R, -SS2001R, and -SS2002R for all PAHs were qualified using a “J/UJ”.

<u>Metals by EPA Method 6010B</u>

- Antimony, copper, lead, and zinc had interference check samples (ICS) outside control limits due to detected analytes in method grinding blank in affected samples MRS03-APN32404624-SS001R, -SS002R, -SS003R, -SS1001R, -SS1002R, -SS1003R, -SS2001R, -SS2002R, and -SS2003R. Results were qualified using a “J” for copper, lead, and mercury, and a “UJ” for antimony.

Synectics #280-122779-2

Lab Work Order# J122779-2: (APN 32404625)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries outside control limits in affected samples in APN32404625-SS001R, -SS003R, -SS003R, -SS1001R,-SS1002R, -SS1003R, -SS2001R, and -SS2002R for all PAHs were qualified using a “J/UJ”.

<u>Metals by EPA Method 6010B</u>

- Antimony, copper, lead, and zinc in ICS sample were outside of control limits. Therefore, affected samples were qualified using a “J/UJ”.

Synectics #280-122777-2

Lab Work Order# J122777-2: (APN 32404638)

PAHs by EPA Method 8270C SIM

- MS percent recoveries, MS/MSD RPDs and/or triplicate RSDs were outside control limits for antimony, lead, and copper. Antimony in affected samples MRS03-APN32404638-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “UJ” for detected results. Copper in affected samples MRS03-APN32404638-SS001, 002, and 003 were qualified using a “J” for detected results. Lead in affected samples MRS03-APN32404638-SS001, -SS002, and -SS003 were qualified using a “J”.
- MS percent recoveries, MS/MSD RPDs and/or triplicate RSDs were outside control limits for samples MRS03-APN32404553- SS001, -SS002, and -SS2003. 2—methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene were qualified using a “J” for detected results.

Metals by EPA Method 6010B

- Trace values of copper were detected in the grinding blank. Copper in affected samples MRS03-APN32404638-SS001, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “J” for detected results.

Synectics #280-122079-1

Lab Work Order# J122079-1: (APN 32404640)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries outside control limits for PAHs in affected sample MRS03- APN32404640-SS1002 were qualified using a “J” in benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene for detected results.
- MS/MSD, and/or triplicate recoveries were outside control limits in affected samples MRS03-APN32404640-SS2001, -SS2002, -SS2003, -SS3001, and -SS3002. Benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(k) fluoranthene, chrysene, fluoranthene, and phenanthrene were qualified using a “J” for detected results in samples MRS03- APN32404640-SS2001, -SS2002, -SS2003. Benzo(a)pyrene was qualified using a “J” in samples MRS03-APN32404640-SS3001, and -SS3002.

Metals by EPA Method 6010B

- Copper was found in the laboratory blank. Copper in affected samples MRS03-APN32404640-SS1001, -SS1002, -SS1003, -SS1003, -SS2001, -SS2002, -SS2003, -SS3001, -SS3002, and -SS3003 were qualified using a “U”.
- MS recoveries outside control limits for lead and zinc in affected samples MRS03-APN32404640-SS3001 and -SS3002 were qualified using a “UJ/J”.

Synectics #280-119625-1

Lab Work Order# J119625-1: (APN 32404656)

PAHs by EPA Method 8270C SIM

- MS and/or MSD recoveries were outside control limits in sample MRS03-APN32404656-SS001 and -SS002 for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene. Analytes were qualified using a "J" for detected results.
- Surrogate recoveries were outside the control limits in MRS03-APN32404656-SS003 for 2—methylnaphthalene, acenaphthene, anthracene, fluoranthene, fluorene, naphthalene. Analytes were qualified using a "J/UJ".

Metals by EPA Method 6010B

- Trace values of copper were found in the grinding blank. Copper in affected samples MRS03-APN32404656-SS001, -SS002, and -SS003, were qualified using a "J" for detected results.

Synectics #280-119800-1

Lab Work Order# J119800-1: (APN 32404658)

PAHs by EPA Method 8270C SIM

- Benzo(a)pyrene is outside project limits for LCS recoveries and therefore qualified using a "J" in samples MRS03-APN32404658-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003.
- Laboratory Triplicate RSD outside project limits were qualified using a "J" for MRS03-APN32404658-SS1002 [anthracene], MRS03-APN32404658-SS2002 [anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, naphthalene, and phenanthrene,], and MRS03-APN32404658-SS2003 [anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, naphthalene, and phenanthrene,]. Naphthalene was qualified as "UJ" in samples MRS03-APN32404658-SS2002 and MRS03-APN32404658-SS2003.
- Laboratory Replicate RPDs and/or laboratory triplicate RSDs were outside project limits for PAHs: 2-Methylnapthalene, acenaphthalene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-c,d)pyrene , and pyrene in samples MRS03-APN32404658-SS2002 and MRS03-APN32404658-SS2003. Surrogate recovery outside project limits for acenaphthalene, dibenz(a,h)anthracene, and fluorene in sample MRS03-APN32404658-SS1003, -SS1001, -SS1002 -SS1003, -SS2001, -SS2002, and -SS2003.

Metals by EPA Method 6010B

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32404658-SS001, -SS002, SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results, and in affected samples MRS03-APN32404658-SS1001, -SS1002, and -SS1003 were qualified using a "UJ".

- MS recoveries outside project limits for antimony, lead, and zinc were qualified using a “J” for lead and zinc and a “UJ” for antimony in samples MRS03-APN32404658-SS001, -SS002, and SS003.

Synectics #280-119855-1

Lab Work Order# J119855-1: (APN 32404659)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries were outside project limits in samples MRS03-APN32404659- SS001, -SS003, and -SS1002 for all PAHs analyzed were qualified using “J/UJ”.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32404659-SS001, -SS002, -SS003, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “J” for detected results.

Synectics #280-119800-2

Lab Work Order# J119800-2: (APN 32404665)

<u>PAHs by EPA Method 8270C SIM</u>

- LCS recoveries outside project limits for benzo(a)pyrene were qualified using “J/UJ” in samples MRS03-APN32404665- SS001, -SS002, -SS003, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003.
- Benzo(a)pyrene is outside project limits for LCS recoveries and therefore qualified using a “J” in samples MRS03-APN32404665-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003.
- Surrogate recoveries were outside project limits in samples MRS03-APN32404665- SS1001, -SS1002, and -SS2002 for all PAHs analyzed were qualified using “J/UJ”.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32404665-SS001, -SS002, -SS003, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were adjusted to nondetect at LOQ.

Synectics #280-120777-1

Lab Work Order# J120777-1: (APN 32404666)

<u>Metals by EPA Method 6010B</u>

- Trace concentrations of copper were detected in the laboratory blank. Copper in affected samples MRS03-APN32404666- SS001, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a “J” at the reported results.

Synectics #280-120777-2

Lab Work Order# J120777-2: (APN 32404638)

<u>PAHs by EPA Method 8270C SIM</u>

- Laboratory duplicate RPD and/or triplicate RSD control limits were exceeded for select PAHs. Affected samples MRS03-APN32404638-SS001 through –SS003 were qualified using a “J”.
- MS recoveries and/or MSD RPD exceeded project limits for select PAHs. Affected samples MRS03-APN32404638-SS001 through –SS003 were qualified using a “J”.

<u>Metals by EPA Method 6010B</u>

- Trace concentrations of copper were detected in the laboratory blank. Copper in affected samples MRS03-APN32404638-SS1001, -SS1002, and -SS1003 were qualified using a “J” at the reported results.
- Interference check sample results for antimony were outside of the acceptance criteria. Affected samples MRS03-APN32404638-SS001 through –SS003, -SS1001 through SS1003, and -SS2001 through - SS2003 for antimony were qualified using a “UJ”.
- Laboratory duplicate RPD and/or triplicate RSD control limits were exceeded for copper. Affected samples MRS03-APN32404638-SS001 through –SS003 were qualified using a “J”.
- MS recoveries and/or MSD RPD exceeded project limits for antimony, lead and zinc. Affected samples MRS03-APN32404638-SS001 through –SS003 were qualified using a “J/UJ”.

Synectics #280-124121-1

Lab Work Order# J124121-1: (APN 32404668)

<u>PAHs by EPA Method 8270C SIM</u>

- Benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno (1,2,3-c,d)pyrene exceeded CCV percent difference limit in samples MRS03-APN32404668-SS001, -SS002, and -SS003. Results were qualified with a “J” for benzo(a)pyrene, benzo(g,h,i)perylene, and benzo(k)fluoranthene, and with a “R” (rejected) for dibenz(a,h)anthracene and indeno (1,2,3-c,d)pyrene for detected results.

Synectics #280-121127-1

Lab Work Order# J121127-1: (APN 32404688)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries outside project limits in sample MRS03-APN32404688- SS001 and -SS1003. Select PAHs in affected sample MRS03-APN32404688- SS001 were qualified using “J/UJ.
- MS %R and/or MSD RPD values were outside control limits for select PAHs in affected sample MRS03-APN32404688-SS1001 through –SS1003 were qualified using “J” for detected results.

- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene were detected in method blank, therefore, affected samples MRS03-APN32404688-SS1001, -SS1002, and SS2001 were qualified using “U/UJ” at reported concentrations.
- Extraction holding time was slightly exceeded for EB-030819. Results for this sample was qualified using a “IJ”.

<u>Metals by EPA Method 6010B</u>

- Antimony, copper, and lead were detected in the laboratory grinding blank. Affected samples MRS03-APN32404688-SS001, -SS002, -SS003, -SS1001 through -SS1003, SS2001 through -SS2003 were qualified using a “J or U” at the reported concentrations.
- MS recoveries outside control limits for antimony and zinc in affected samples MRS03-APN32404688-SS1001, -SS1002, and -SS1003 were qualified using a “J/UJ”.
- Interference check sample results for antimony was outside the acceptance criteria. Affected samples MRS03-APN32404688-SS001, -SS002, -SS003, -SS1001 through -SS1003, SS2001 through -SS2003 were qualified using a “UJ”.

Synectics #280-121853-1

Lab Work Order# J121-853-1: (APN 32404730)

<u>PAHs by EPA Method 8270C SIM</u>

- Antimony recoveries were low in MS/MSD. Antimony in affected samples MRS03-APN32404730-SS001, -SS002, and -SS003, were qualified using a “UJ”.

<u>Metals by EPA Method 6010B</u>

- MS recoveries and laboratory triplicate RSD were outside control limits for lead and zinc in affected samples MRS03-APN32405212-SS001, -SS002, and -SS003 were qualified using a “J” for detected results.

Synectics #280-120975-1

Lab Work Order# J120-975-1: (APN 32405168)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries outside project limits in sample MRS03-APN32405168- SS003, for 2—methylnaphthalene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene were qualified using “J” for detected results. Acenaphthene in affected sample MRS03-APN32405168- SS003 was qualified using “UJ”.

<u>Metals by EPA Method 6010B</u>

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32405168-SS001, -SS002, and -SS003, were qualified using a “J” for detected results.

Synectics #280-122592-1

Lab Work Order# J122-592-1: (APN 32405169)

PAHs by EPA Method 8270C SIM

- Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,23-c,d)pyrene, found in equipment blank affected samples MRS03-APN32405172-SS001, -SS002, -SS003, -SS1001, and -SS1001 and -SS1003 were qualified using a "U".
- MS/MSD outside control limits in affected samples MRS03-APN32405172-SS001, -SS002, and -SS003 for fluorene and/or naphthalene were qualified using a "J" for detected results.

Metals by EPA Method 6010B

- Copper and zinc were found in the grinding blank. Copper and zinc in affected samples MRS03-APN32405172-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results.
- Post spike recoveries were outside control limits for antimony. Antimony in affected samples MRS03-APN32405172-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "UJ".

Synectics #280-122592-1

Lab Work Order# J122-592-1: (APN 32405172)

PAHs by EPA Method 8270C SIM

- Surrogate recovery outside project limits for select PAHs for which not detected results were qualified using a "UJ".
- MS and/or MSD recoveries for select PAHs outside project limits were qualified using a "J" in affected samples.
- MRS-APN32405172-SS001, MRS-APN32405172-SS2001, MRS-APN32405172-SS2002, and MRS-APN32405172-SS2003 were qualified using a "J" due to analyte detection in equipment blank.

Metals by EPA Method 6010B

- Trace values of copper, lead, and zinc were found in the grinding blank or method blank. Copper and lead in affected samples MRS03-APN32405172-SS001, -SS002, -SS003, -SS1001, -SS1002, and -SS1003, SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results, and zinc in affected samples MRS03-APN32405172-SS1001, -SS1002, and -SS1003 were qualified using a "J" for detected results.
- Samples were qualified with "R" (rejected) for antimony due to extremely low matrix spike recoveries.

Synectics #280-119545-1

Lab Work Order# J119-545-1: (APN 32405174)

<u>PAHs by EPA Method 8270C SIM</u>

- LCS outside the control limits for 2-methylnaphthalene and naphthalene in affected sample MRS03-APN32405174-SS2002, were qualified using a “J” for detected results.

<u>Metals by EPA Method 6010B</u>

- MS/MSD recoveries outside control limits for antimony, copper, lead, and zinc in parent samples, were qualified using a “UJ” for antimony and “J” for copper, lead, and zinc.

Synectics #280-119384-1

Lab Work Order# J119-384-1: (APN 32405176)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recovery outside project limits for select PAHs in samples MRS03-APN32405176-SS002 and MRS03-APN32405176-SS003 were qualified using a “J”.

<u>Metals by EPA Method 6010B</u>

- Copper and zinc were found in the grinding blank. Antimony and lead were detected in the method blank, and antimony, copper, and lead were outside control limits for MS/MSD. Antimony in one sample, MRS03-APN32405176-SS001, was qualified using a “J” for detected results. Copper and lead in affected samples MRS03-APN32405176-SS001, -SS002, -SS003, -SS1001, -SS1002, and -SS1003 were qualified using a “J/UJ”.

Synectics #280-119360-1

Lab Work Order# J119-360-1: (APN 32405177)

<u>PAHs by EPA Method 8270C SIM</u>

- MS/MSD recoveries for select PAHs were outside QC limits. Spiked samples MRS03-APN32405177-SS1001, -SS1002, and -SS1003 were qualified using a “J” for detected results.

<u>Metals by EPA Method 6010B</u>

- Copper and lead were detected in the laboratory blank or the grinding blank. Copper in affected samples MRS03-APN32405177-SS001, -SS002, -SS003, -SS1001, SS1002, SS1003, SS2001, SS2002, and SS2003, and lead in samples MRS03-APN32405177-SS2001, and -SS2002 were qualified using a “J” .
- Antimony, lead, and zinc recoveries were outside the MS or MSD limits. Spiked samples MRS03-APN32405177-SS1001 and -SS1002 were qualified using a “J/UJ”.

Synectics #280-119360-1

Lab Work Order# J119-360-1: (APN 32405178)

<u>Metals by EPA Method 6010B</u>

- Zinc, copper, and lead were found in the laboratory blank or the grinding blank. Only copper in affected samples MRS03-APN32405178-SS001, -SS002, -SS003, -SS1001, SS1002, SS1003, SS2001, SS2002, and SS2003, and lead in samples MRS03-APN32405178-SS2001, -SS2002, and -SS2003 were qualified using a "J".

Synectics #280-121679-1

Lab Work Order# J121-679-1: (APN 32405212)

Metals by EPA Method 6010B

- MS recoveries outside control limits for antimony, lead, and zinc in affected samples MRS03-APN32405212-SS001, -SS002, and -SS003 were qualified as "R – rejected" for antimony and "J" for detected results for lead and zinc.

Synectics #280-124981-1

Lab Work Order# J124981-1: (APN 32405265)

PAHs by EPA Method 8270C SIM

- Maximum extraction holding time was exceeded for several PAHs in samples MRS03-APN32405265-SS001, -SS002, –SS003, –SS1001, –SS1002, –SS1003, –SS2001, –SS2002, and –SS2003 were qualified using a "J" for detects and R (rejected) for non-detects.

Metals by EPA Method 6010B

- Copper, lead, and zinc detected in method blank in samples MRS03-APN32405265-SS001, -SS002, and -SS003 were qualified using a "J" for detected results.
- Antimony in samples MRS03-APN32405265-SS001, -SS002, and -SS003 were qualified using a "R" (rejected) due to extremely low MS/MSD recoveries.

Lab Work Order# J124981-1: (APN 32405267)

PAHs by EPA Method 8270C SIM

- Maximum extraction holding time was exceeded for PAHs in samples MRS03-APN32405267-SS001, - -SS002, and -SS003 were qualified using a "J" for 2-methylnaphthalene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene, and "R" (rejected) for acenaphthene and fluorene in non-detects.

Metals by EPA Method 6010B

Copper, lead, and zinc detected in method blank in affected samples MRS03-APN32405267-SS001, -SS002, and -SS003 were qualified using a "J" for detected results.

Synectics #280-121580-1

Lab Work Order# J121-580-1: (APN 32405289)

PAHs by EPA Method 8270C SIM

- Surrogate recoveries were outside of the project limits in sample MRS03-APN32405289- SS1001. Analyte results were qualified using "J/UJ".

Metals by EPA Method 6010B

- Antimony and zinc were detected in the laboratory grinding blank. Antimony and zinc in affected samples MRS03-APN32405289-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, SS2001, -SS2002, and -SS2003 were adjusted to non-detect (UJ) at the reported results.
- Zinc was recovered outside of MS % recovery control limits. Affected samples MRS03-APN32405289-SS001, -SS002, and -SS003 were qualified using a "J" for detected results.

Synectics #280-121580-1

Lab Work Order# J121-580-1: (APN 32405290)

Metals by EPA Method 6010B

- Antimony was recovered low in MS/MSD. Antimony in affected samples MRS03-APN32405290-SS001, -SS002, and -SS003, were qualified using a "UJ".

Synectics #280-124017-1

Lab Work Order# J124017-1: (APN 32436011)

PAHs by EPA Method 8270C SIM

- Maximum holding time was exceeded by one day for PAHs. Affected samples MRS03-APN32436011-SS001 through APN32436011-SS003, APN32436011-SS1001 through APN32436011-SS1003, and APN32436011-SS2001 through-SS2003 were qualified using a "J" for detected results.

Metals by EPA Method 6010B

- Copper, lead, and zinc detected in method grinding blank in affected samples MRS03-APN32436011-SS001 through APN32436011-SS003, APN32436011-SS1001 through APN32436011-SS1003, and APN32436011-SS2001 through-SS2003 were qualified using a "J" for detected results.
- Antimony and copper were outside of project limits in ICS. Affected samples MRS03-APN32436011-SS001 through APN32436011-SS003 were qualified as J/UJ,
- MS and MSD outside control limits for antimony and lead in affected samples MRS03-APN32436011-SS001 through APN32436011-SS003, APN32436011-SS1001 through APN32436011-SS1003, and APN32436011-SS2001 through-SS2003 were qualified using a "J/UJ".

Synectics #280-124364-1

Lab Work Order# J124364-1: (APN 310 21080 & APN 32436012)

PAHs by EPA Method 8270C SIM

- Select PAHs exceeded the RPD/RSD limits in LCSD, duplicate of sample MRS03-APN31021080-SS1002A, and laboratory triplicate samples. Detected results in affected samples were qualified using a J qualifier.
- MS recoveries outside control limits for benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-c,d)pyrene in affected samples MRS03-APN31021080A-SS1001A, -SS1002A, and -SS1003A were qualified using a "J" for detected results.
- Extraction holding times and temperature receipts were outside project limits. Detected results in affected samples MRS03-APN31021080-SS001A through -SS003A, MRS03-APN32436012-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a J qualifier. Non-detect results for acenaphthene, anthracene, dibenz(a,h)anthracene, and fluorine in affected sample MRS03-APN32436012-SS2002 fluorene in samples MRS03-APN32436012-SS1002, -SS2001 were qualified using a "R" (rejected).
- Extraction holding time was exceeded for EB-052119. PAHs results were qualified using a "UJ".

Metals by EPA Method 6010B

- Copper exceeded laboratory duplicate RPD triplicate RSD limits. Copper results in affected samples MRS03-APN31021080-SS1001A though –SS1003A were qualified using a J.
- Antimony, copper, lead, and zinc were recovered outside of MS % recovery control limits. Detections in sample MRS03-APN31021080-SS1001A though –SS1003A were qualified using a J/UJ.

Synectics # 280-122568-1

Lab Work Order# J122568-1: (APN 32436019)

PAHs by EPA Method 8270C SIM

- One or more surrogates were outside of control limits for various samples. Affected samples MRS03-APN32436019-SS2001, MRS03-APN32436019-SS2002, -SS3002, and -SS4001 and EB-041119 for all PAHs analyzed were qualified using "J/UJ".
- MS/MSD recoveries, sample duplicate and triplicate RSDs were outside of project limits for select PAHs in sample MRS03-APN32436019-SS003. Detected PAHs were qualified using a "J".
- Extraction holding time was slightly exceeded. Analytical data for results in affected samples MRS03-APN32436019-SS001, -SS002, -SS003 were qualified using J/UJ.

Metals by EPA Method 6010B

- Analytes antimony, copper, lead, and zinc were recovered outside of MS recovery control limits. Sample data for MRS03-APN32436019-SS003 were qualified using a "J/UJ".
- Laboratory triplicate RSD was outside project limits for lead in sample MRS03-APN32436019-SS00, which was qualified using a "J".

Synectics # 280-122566-1

Lab Work Order# J122566-1: (APN 32437016)

PAHs by EPA Method 8270C SIM

- Extraction holding time was slightly exceeded. Analytical data for results in affected samples MRS03-APN32437016-SS001, -SS002, -SS003 were qualified using J/UJ. PAHs in EB-040919 were qualified using R (rejected) qualifier due to gross holding time excursion (2xholding times).

Metals by EPA Method 6010B

- Interference check sample results for antimony and lead were outside of the acceptance criteria. Affected samples MRS03-APN32437016-SS001-SS003, -SS1001 - SS1003, and -SS2001 - SS2003 for antimony were qualified using a "J/UJ".

Synectics # 280-124809-1

Lab Work Order# J124809-1: (APN 32437017 & APN 32439020)

PAHs by EPA Method 8270C SIM

- Extraction holding time was exceeded in samples MRS03-APN32437017-SS001, -SS002, and -SS003 and MRS03-APN32439020-SS001 through –SS003, MRS03-APN32439020-SS1001 through –SS1003, MRS03-APN32439020-SS2001 through –SS2003. Detections were qualified with a "J" and non-detects with R (rejected).
- Fluoranthene and pyrene exceeded the laboratory replicate RPD in samples APN32437017-SS1001, -SS1002, and -SS1003; data were qualified using "J" for detected results.
- Acenaphthene and phenanthrene exceeded the laboratory triplicate RSD in samples APN32437017-SS1001, -SS1002, and -SS1003; data were qualified using a "J" for detected results.

Metals by EPA Method 6010B

- Antimony, lead, and zinc were recovered low in MS/MSD. Analytes in affected samples MRS03-APN32439020-SS001 through –SS003 and APN32437017-SS1001 through -SS1003 were qualified using a "J/UJ" for detected results.

Synectics # 280-124655-1

Lab Work Order# J124655-1: (APN 32404631B; MRS03-APN32405218A; MRS03-APN32439031)

<u>Metals by EPA Method 6010B</u>

- Lead and zinc were outside of project limits in Interference Check Sample (ICS). Analytes in affected samples MRS03-APN32404631-SS001 through –SS003 and APN32405218A-SS001 through -SS003, and MRS03-APN32439031-SS001 through –SS003, -SS1001 through –SS1003, and –SS2001 through –SS2003 were qualified using a "J" for detected results. Similarly, copper was qualified in samples MRS03-APN32439031-SS001, -SS1001 through –SS1003, and –SS2001 through –SS2003 were qualified using a "J" for detected results.
- Antimony, copper, lead, and zinc were recovered low in MS/MSD samples. Analytes in affected samples MRS03-APN32405218A-SS001 through –SS003 and MRS03-APN32405218A-SS1001 through -SS1003 were qualified using a "J/UJ" for detects/nondetects.

Synectics # 280-124367-1

Lab Work Order# J124367-1: (APN 31021080)

<u>PAHs by EPA Method 8270C SIM</u>

- Extraction holding time was exceeded in samples MRS03-APN31021080-SS001B through APN31021080-SS003B, APN31021080B-SS1001B through APN31021080B-SS1003B, and APN31021080B-SS2001B through-SS2003B. All PAHs were qualified using a "J" (estimated) for detected or "R"(rejected) for not-detected results.

<u>Metals by EPA Method 6010B</u>

- Antimony, copper, lead and zinc were outside of project limits in Interference Check Sample (ICS). These analytes in affected samples MRS03-APN31021080-SS001B through -SS003B, -SS1001B through -SS1003B, and -SS2001B through -SS2003B were qualified using a "J/UJ".
- Antimony, lead, and zinc were recovered outside of MS/MSD limits and exceeded RPD limits. Analytes in affected samples MRS03-APN31021080-SS001B through –SS003 were qualified using a "J/UJ".

Synectics # 280-121129-1

Lab Work Order# J121191-1: (APN 32404208A)

<u>PAHs by EPA Method 8270C SIM</u>

- The MS/MSD recoveries, sample duplicate and triplicate RSDs were outside project control limits in samples MRS03-APN32404208A-SS001, -SS002, and -SS00304208A- SS001, -SS002, and -SS003 for select PAHs for which data were qualified using "J/UJ".
- Surrogate recovery for 2-methylnaphthalene-d10 was slightly below the QC limit in samples MRS03-APN32404208A-SS002, MRS03-APN32404208A-SS1002, and MRS03-APN32404208A-SS2003. Results were qualified

- Extraction holding time was slightly exceeded project for EB-030719. Data was qualified using "UJ".

Metals by EPA Method 6010B

- Trace values of copper were found in the laboratory blank. Copper in affected samples MRS03-APN32404208A-SS1001, -SS1002, -SS1003, SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results.
- MS/MSD recoveries and/or MSD RPD were outside project control limits in samples MRS03-APN32404208A- SS001, -SS002, and -SS003 for antimony, lead, and zinc. Affected samples were qualified using a "J/UJ".

Synectics # 280-120076-1

Lab Work Order# J120076-1: (APN 32404552A)

PAHs by EPA Method 8270C SIM

- Surrogate recovery for 2-methylnaphthalene-d10 was slightly below the QC limits in sample MRS03-APN32404552A-SS1002 for all PAHs analyzed were qualified using either "J/UJ".
- MS/MSD RPD, laboratory replicate RPD, and triplicate RSD values outside control limits in affected samples MRS03-APN32404552A-SS001, -SS002, and-SS003 for select PAHs were qualified using a "J" for detected results.

Metals by EPA Method 6010B

- Trace concentrations of copper, lead, and zinc were found in the grinding blank. Affected samples MRS03-APN32404552A-SS001, -SS002, -SS003, SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "J" for detected results or "UJ" for not-detected results.
- Antimony was recovered low in MS/MSD samples. Antimony in samples MRS03-APN32404552A-SS001, -SS002, and-SS003 were qualified using "UJ".

Synectics # 280-119624-1

Lab Work Order# J119624-1: (APN 32404556A)

PAHs by EPA Method 8270C SIM

- Naphthalene was detected in the method blank at a trace concentration. EB-012419 was adjusted to not detected concentration at the LOQ.
- Extraction holding time was slightly exceeded in EB-012419. Detected and non-detected PAHs were qualified using J/UJ.
- Two surrogate compounds were recovered outside QC limits in sample MRS03-APN32404556A-SS002. Results were qualified using "J/UJ".

Metals by EPA Method 6010B

- MS RPD value and LCSD recovery exceeded QC limit for copper. Data for APN32404556A-SS001, -SS002, and -SS003 and EB-012419 were qualified using a "J/UJ".

Synectics # 280-121853-1

Lab Work Order# J121853-1: (APN 32404629A & APN 32404730)

PAHs by EPA Method 8270C SIM

- MS/MSDs, LCS and sample duplicate RPDs and/or triplicate RSD values were outside QC limits for select PAHs in sample MRS03-APN32404730-SS001, -SS002, and –SS003. Data were qualified using "J" for detected results.

Metals by EPA Method 6010B

- MS/MSDs, sample duplicate RPD and/or triplicate RSD values were outside QC limits for antimony, lead, and zinc in affected samples MRS03-APN32404629A-SS001, -SS002, and -SS003 were qualified using "J/UJ".
- Interference check sample outside accepted criteria for antimony in samples MRS03-APN32404629A-SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 were qualified using a "UJ."

Synectics # 280-124655-1

Lab Work Order# J124655-1: (APN 32439031)

Metals by EPA Method 6010B

- Interference check sample was outside QC limits for copper, lead and zinc. Affected samples MRS03-APN32439031-SS2001, -SS2002, and -SS2003 were qualified using a "J."
- MS/MSD recoveries for antimony, copper, lead, and zinc exceeded QC limits. Affected samples MRS03-APN32439031-SS001, -SS002, and -SS003 were qualified using a "J/UJ."

Synectics #280-122201-1

Lab Work Order# J122201-1: (APN 32404206A & APN 31021963)

PAHs by EPA Method 8270C SIM

- MS/MSD %R, RPD, and/or triplicate RSD recoveries were outside QC limits for select PAHs in affected samples MRS03-APN31021063-SS001 through –SS003 and MRS03-APN32404206A-SS1001, -SS1002, and -SS1003 were qualified using a "J" for detected results.
- Extraction holding time was exceeded for EB-040219. Data was qualified using "UJ".
- Surrogate recovery exceeded QC limits in EB-040319. Data are qualified using "UJ".

Metals by EPA Method 6010B

- MS recoveries exceeded QC limits for antimony, copper, lead, and zinc. Affected samples MRS03-APN32404206A-SS1003, MRS03-APN31021063-SS002 and –SS1003 were qualified using a "J/UJ". Antimony in samples MRS03-APN31021063-SS001, -SS002, and –SS003 were qualified using a "R" (rejected) due to extremely low recoveries in MS/MSD.

Synectics # 280-122205-1

Lab Work Order# J122205-1: (APN 32405206A)

PAHs by EPA Method 8270C SIM

- MS/MSD recoveries, MSD RPD and/or triplicate RSD exceeded QC limits for select PAHs in samples MRS03-APN32405206A- SS001, -SS002, -SS003, -SS1003, and -SS2001 were qualified using either "J/UJ".
- Surrogate recoveries exceeded QC limits in samples APN32405206A- SS1003 and –SS2001 for select PAHs. Data were qualified using "J/UJ".

Metals by EPA Method 6010B

- MS percent recoveries were outside QC limits for antimony, copper, lead and zinc in affected samples MRS03-APN32405206A- SS001, -SS002, and -SS003. Copper, lead, and zinc were qualified using a "J". Antimony was qualified using a "J" for detected results in affected samples MRS03-APN32405206A-SS001 and a "UJ" for non-detects in samples MRS03-APN32405206A-SS002 and -SS003.

Synectics # 280-123793-1

Lab Work Order# J123793-1: (APN 32405174 & APN 32436020)

PAHs by EPA Method 8270C SIM

- Extraction holding time was exceeded in samples MRS03-APN32436020-SS1001 through –SS1003 for all PAHs. Data were qualified using a "J" for detected results.
- LCS recoveries of naphthalene and 2-methlynaphthalene exceeded QC limits. These analytes in affected sample MRS03-APN32405174-SS2002 were qualified using a "J".
- MS percent recoveries, MS/MSD RPDs and/or laboratory triplicate RSDs were outside QC limits for samples MRS03-APN32436020-SS1001 and -SS1002. Select PAHs were qualified using a "J" for detected results. No impact on non-detect data.

Metals by EPA Method 6010B

- MS percent recoveries were outside QC limits for antimony, copper, and zinc which affected samples MRS03-APN32405174-SS1002, -SS1003 and MRS03-APN32436020-SS1001 and –SS1002. Antimony in sample MRS03-APN32436020-SS1001 was qualified using a "R" for non-detect and UJ for the other samples. Copper, lead, and zinc were qualified using a "J" for detected results in all four samples.

Synectics # 280-124118-1

Lab Work Order# J124118-1: (APN 32405263A)

PAHs by EPA Method 8270C SIM

- Ending continuing calibration verification (CCV) % difference was recovered above the QC limit for benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3 -cd)pyrene in samples APN32405263A-SS001, -SS002, and -SS003. Data were qualified using a "J" for detected results.
- Extraction holding time was exceeded in samples APN32405263A-SS001, -SS002, and -SS003. Detections for select PAHs were qualified using a "J" and non-detects were qualified using a "R" in affected sample APN32405263A-SS001 through –SS003.

<u>Metals by EPA Method 6010B</u>

- Interference check sample was outside QC limits for antimony, copper, and zinc. Samples MRS03- APN32405263A-SS001, -SS002, and -SS003 for copper and zinc were qualified using a "J." Antimony non-detect results were qualified using a "R" (rejected) due to potential for negative bias.
- MS/MSD recoveries were outside QC limits for antimony, lead, and zinc. Data in samples APN32405263A-SS001, -SS002, and -SS003 for lead and zinc were qualified using a "J/UJ". Non-detect results for antimony were qualified using a "R" (rejected) due to low MS/MSD recoveries and no post-spike was analyzed.
- Trace level of lead was detected in the laboratory blank. Lead result in EB-051619 was adjusted to non-detect at LOQ.

Synectics # 280-129562-1

Lab Work Order# J129562-1: (APN 32439036 & APN 32439037)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries exceeded QC limits in samples MRS03-APN32439036-SS002, -SS1001, -SS1002, -SS1003, -SS2002, and MRS03-APN32439037-SS2001 for select PAHs. Data were qualified using "J/UJ".
- MS percent recoveries and/or MSD RPD were outside control limits in affected sample MRS03-APN32439036-SS1001 for select PAHs. Data were qualified J/UJ.

<u>Metals by EPA Method 6010B</u>

- Interference check sample ICSA was outside QC limits for antimony, copper, and lead. Samples MRS03-APN32439036-SS001 through -SS2003 for antimony were qualified using a "UJ" for antimony.
- MS percent recoveries were outside control limits for antimony, copper, lead, and zinc. Analyte data in affected sample APN32439036-SS1001 were qualified using a "J/UJ".

Synectics # 280-129643-1

Lab Work Order# J129643-1: (APN 32439031)

<u>PAHs by EPA Method 8270C SIM</u>

- LCS recoveries slightly exceeded the QC limits. Therefore, data for select PAHs were qualified using a “J” in affected samples MRS03-APN32439031- SS3001, -SS3002, -SS4001, SS4002, and -SS4003.
- MSD % recovery and MS/MSD RPDs were outside control limits for samples MRS03-APN32439031-SS3003 for anthracene, benzo(a)pyrene, and dibenz(a,h)anthracene. Analyte data were qualified using a “J” for detected results.

<u>Metals by EPA Method 6010B</u>

- MS recoveries were outside QC limits for antimony, lead, and zinc. Sample MRS03-APN32439031- SS3003 was qualified using a “J” for lead and zinc for detected results and “UJ” for antimony in not-detected results.

Synectics # 280-129867-1

Lab Work Order# J129867-1: (APN 32404644)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate 2-Fluorobiphenyl was recovered outside of the QC limits in EB-101619. Phenanthrene and pyrene data in EB-101610 were qualified using a “J”.

<u>Metals by EPA Method 6010B</u>

- Interference check sample was outside QC limits for antimony. Samples MRS03-APN32404664-SS001, -SS002, and -SS003for antimony were qualified using a “UJ.”.

Synectics # 280-129870-1

Lab Work Order# J129870-1: (APN 32436012)

<u>Metals by EPA Method 6010B</u>

- MS/MSD exceeded criteria for antimony and zinc. Results for these metals in the spiked sample (MRS03-APN32436012-SS3002) were qualified as J/UJ.

Synectics # 280-129935-1

Lab Work Order# J129935-1: (APN 32404277A & APN 32405269)

<u>Metals by EPA Method 6010B</u>

- MS/MSD exceeded criteria for antimony, lead, and zinc. Results for these metals in the spiked sample (MRS03-APN32405269-SS1002) were qualified as J/UJ.
- Interference check sample exceeded QC limits for antimony. Antimony data for samples APN32405269-SS003, -SS1001 through -SS1003, and -SS2001 through –SS2003 were qualified using an UJ.

Synectics # 280-130127-1

Lab Work Order# J130127-1: (APN 32405174)

<u>PAHs by EPA Method 8270C SIM</u>

- Trace levels of chrysene and benzo(a)anthracene were detected in the laboratory blank. Sample results for APN32405174-SS3001 and –SS4001 were adjusted to non-detect at LOQ.

- Surrogate recoveries exceeded QC limits in samples APN32405174-SS3003, –SS4001, and –SS4002. PAHs were qualified using "J" for all detected results. There is no impact on non-detect data.

<u>Metals by EPA Method 6010B</u>

- Interference check sample for antimony exceeded QC limits. Samples APN32405174-SS3001 through –SS3003 and –SS4001 through –SS4003 were qualified using an UJ for antimony.
- MS/MSD percent recovery was outside QC limits for antimony in sample MRS03-APN32405174-SS3002. Not-detected result for antimony was qualified using a "UJ" due to very low MS recovery.

Synectics # 280-130167-1

Lab Work Order# J130167-1: (APN 32404211C & APN 32404582)

<u>PAHs by EPA Method 8270C SIM</u>

- Extraction holding time was slightly exceeded in EB-102219. Detected and non-detected PAHs were qualified using J/UJ.
- Surrogate recovery for Terphenyl-d14 was outside QC limits in samples MRS03-APN32404211C-SS1001 and –SS1003. PAHs were qualified using "J" for all detected results. There is no impact on non-detect data.

<u>Metals by EPA Method 6010B</u>

- Interference check sample results outside QC criteria in samples MRS03-APN32404211C-SS001, -SS002, -SS003, -SS1001, -SS1002, -SS1003, -SS2001, -SS2002, and -SS2003 for antimony were qualified using a "UJ" for antimony in detected results.

- MS/MSD and MS RPD values outside the control limits for copper, lead, and zinc in sample MRS03-APN32404211C-SS1001. Detected results for copper, lead and zinc were qualified using a "J". Non-detect result for antimony was qualified using a "UJ" due to very low MS recovery.

Synectics # 280-130208-1

Lab Work Order# J130208-1: (APN 32404578)

<u>PAHs by EPA Method 8270C SIM</u>

- Surrogate recoveries for 2-Fluorobiphenyl and Terphenyl-d14 were outside of the QC limits in sample APN32404578-SS001 and –SS002. PAHs were qualified using a "J" for all detected results.

<u>Metals by EPA Method 6010B</u>

- Interference check sample exceeded QC limits for antimony. Data for antimony in samples MRS03-APN32404578-SS001, -SS002, and -SS003 were qualified using an UJ.

Synectics # 280-130358-1

Lab Work Order# J130358-1: (APN 32404727 & APN32436008)

<u>PAHs by EPA Method 8270C SIM</u>

- Extraction holding time was slightly exceeded for PAHs in samples MRS03-APN3246008-SS001, -SS002, and -SS003; -SS1001 through –SS1003, -SS2001 through –SS2003. Detections were qualified with a "J" and non-detects with "UJ".

<u>Metals by EPA Method 6010B</u>

- Interference check sample results outside the acceptance criteria in affected samples MRS03-APN32404727-SS001, -SS002, - and -SS003; MRS03-APN3246008-SS001, -SS002, - and -SS003; -SS1001 and –SS1003; and SS2001, -SS002, - and -SS003; for antimony were qualified using a "UJ" for antimony in non-detected results.
- Due to low MS recoveries, sample MRS03-APN3246008-SS1002 was qualified for antimony using R (rejected) and lead and zinc were qualified using a J for detected results.

Synectics # 280-130428-1

Lab Work Order# J130428-1: (APN 32439031)

<u>PAHs by EPA Method 8270C SIM</u>

- MS/MSD recoveries and MS/MSD RPD values were outside control limits for select PAHs in affected samples: MRS03-APN332439031-SS5002, which was qualified using a "J" for detected results.

<u>Metals by EPA Method 6010B</u>

- Interference check and MS/MSD recoveries were outside control limits for antimony and zinc. Affected samples MRS03-APN332439031- SS35001, -SS5002, -SS5003, -SS6002, and –SS6003 were qualified using a "UJ" for antimony, and affected sample MRS03-APN332439031- SS5002 was qualified using "J" for zinc.

C5.0 DATA VALIDATION RESULTS

Analytical data collected at the Former Skeet Range MRS03, Kingman GTG Gunnery Range remedial investigation activities were reviewed and validated by Synectics in Sacramento, California. Data validation was conducted in accordance with *Quality Systems Manual for Environmental Laboratories, version 5.1 (DoD, 2017),* DoD General Data Validation Guidelines (DoD, 2018a), DoD Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (SW-846 8260, 8270) (DoD, 2018b), and blank data evaluation for metals analysis based on the DoD Module 2: Data Validation Procedure for Metals by ICP-OES (SW-846 6010) (DoD, 2018c), and the QA/QC criteria specified in the Final QAPP Addendum (NOREAS, 2018), Field Change Form Request (FCRF)-001 (NOREAS, 2019a), and FCRF-002 (NOREAS, 2019b).

This assessment has been made through a combination of automated data review (ADR) and supplemental manual review. Data were subjected to a combination of 90 percent Stage 3 Validation Electronic and Manual (S3VEM) and 10 percent Stage 4 Validation Electronic and Manual (S4VEM), involving manual re-quantifications and recalculations from instrument output. Data validation included a review of sample preservation/condition, cooler temperature, verification of analytes, methods, quantitation, reporting limits, and technical holding times; gas chromatography/mass spectrometer (GC/MS) instrument tune, initial and continuing calibration verifications; laboratory blanks; ICP Interference Check Samples (metals), surrogates, LCS and MS/MSD; and field QC sample data (as applicable). In addition, field sampling records were reviewed to assess the potential for any field conditions that adversely impact data quality. Relevant data validation qualifiers applied during data validation are defined as follows:

- U (Undetected) – The analyte was analyzed for, but not detected.
- UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
- J (Estimated) – Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria
- R - The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.

With the exception of a few analytes qualified with “R”, as identified in Section 4.0, third-party validation reports indicated that data associated with samples collected during the soil sampling from January 2019 through October 2019 are usable and acceptable with the appropriate data qualifiers. Overall precision and accuracy goals identified in the project Final QAPP Addendum were met. The analytical results and associated data validation qualifiers associated with the QC excursions are provided for key constituents of concern in Section C4.0 and in Tables 6-1and 6-2 in the Remedial Investigation. The majority of the QC excursions were related to holding time exceedances, matrix interference caused by soil samples, laboratory blank artifacts, laboratory control sample or calibration excursions caused by poor performing compounds. Holding time exceedances were related to unforeseen laboratory processing limitations. As the source of the contaminants of concern are from solid-phase skeet particles and shot pellets, potential volatilization losses from holding time exceedances are not considered to significant affect data usability. Copies of the analytical laboratory reports, including COC forms and data validation reports, are provided in Appendix B.

Third-party validation reported that analytical data associated with nine APN parcels (APNs: 31021063C, 31021063D, 31021063E, 32404242, 32404550, 32404558, 32405172, 32405212, and 32436008) were rejected using an “R” qualifier due to holding time exceedances (greater than 2 times), negative bias indicated by low LCS or surrogate recoveries, and matrix interference demonstrated by poor MS/MSD recoveries.

Data validation reported that MS/MSD recoveries for antimony were outside of the acceptance limits in select samples collected at six (6) parcels (APNs: 31021063, 32404242, 32404550, 32405172, 32405212, and 32436008). This excursion resulted in rejection of antimony results in 16 samples. This anomaly is likely related to the limitations in the digestion procedure used for ICP analysis resulting in lower antimony recoveries. As antimony is not considered a primary risk-driver for the Site, this data quality issue would not impact remediation decisions for the Site. In addition, data validation resulted in rejection (“R” qualified) of PAHs results in APN 32404558 due to method holding time exceedance. These parcels were resampled during 2020. Data will be presented in a separate report.

Overall, project data quality objectives were met, and the data were deemed acceptable. A total of 4,889 results (34.7%) out of the 14,076 results (sample and field QC samples) reported are qualified based on independent validation, and 423 results (3%) have been rejected. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the limit of quantitation, are not counted as qualified results in the above count.

Analytical results are presented in Tables 6-2 and 6-3 in the Remedial Investigation Report. The chain-of-custody records, laboratory analytical results, and data validation reports are provided as a part of the parcel reports in Attachment 1.

C6.0 REFERENCES

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TABLE

TABLE C-1
EQUIPMENT BLANK ANALYTICAL RESULTS

Equipment Blank ID	Sampling Date	Polycyclic Aromatic Hydrocarbons (µg/L)																Metals (Total) (µg/L)			
		2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Antimony	Copper	Lead	Zinc
EB-011619A	1/16/2019	0.0114 J	0.0302 UJ	0.0201 UJ	0.0121 UJ	0.0121 UJ	0.0121 UJ	0.0121 UJ	0.0121 UJ	0.0121 UJ	0.0121 UJ	0.0121 UJ	0.0201 UJ	0.0201 UJ	0.0441 J	0.0201 UJ	0.0201 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-011619B	1/16/2019	0.0128 J	0.0310 UJ	0.0206 UJ	0.0124 UJ	0.0124 UJ	0.0124 UJ	0.0124 UJ	0.0124 UJ	0.0124 UJ	0.0124 UJ	0.0124 UJ	0.0206 UJ	0.0206 UJ	0.0486 J	0.0206 UJ	0.0206 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-011719	1/17/2019	0.0119 U	0.0299 U	0.0199 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.00474 J	0.0199 U	0.0199 U	0.0173 J	0.0199 U	0.0199 U	12.0 U	245	9.00 U	15.0 U
EB-012219	1/22/2019	0.0117 U	0.0294 U	0.0196 U	0.0978 U	0.00677 J	0.0153 J	0.0119 J	0.0132 J	0.0131 J	0.0102 J	0.0978 U	0.0196 U	0.0144 J	0.0174 J	0.0196 U	0.0196 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-012319	1/23/2019	0.0121 U	0.0302 U	0.0201 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.101 U	0.0201 U	0.0201 U	0.0151 J	0.0201 U	0.0201 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-012419	1/24/2019	0.0120 UJ	0.0300 UJ	0.0200 UJ	0.0120 UJ	0.0120 UJ	0.0120 UJ	0.0120 UJ	0.0120 UJ	0.0120 UJ	0.0120 UJ	0.00467 J	0.0200 UJ	0.0200 UJ	0.100 U	0.0200 UJ	0.0200 UJ	12.0 U	10.0 UJ	9.00 U	66.0 J
EB-012519	1/25/2019	0.0119 U	0.0298 U	0.0199 U	0.00594 J	0.0119 U	0.0119 U	0.00446 J	0.0119 U	0.00481 J	0.0119 U	0.00685 J	0.0199 U	0.0199 U	0.0994 U	0.0199 U	0.0199 U	12.0 U	10.0 UJ	9.00 U	4.84 J
EB-012919	1/29/2019	0.0118 U	0.0294 U	0.0196 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0196 U	0.0196 U	0.0118 U	0.0196 U	0.0196 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-013019	1/30/2019	0.0122 U	0.0306 U	0.0204 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0204 U	0.0204 U	0.0122 U	0.0204 U	0.0204 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-013119	1/31/2019	0.0123 UJ	0.0309 UJ	0.0206 UJ	0.0412 UJ	0.0131 J	0.0147 J	0.00974 J	0.0132 J	0.0412 UJ	0.0123 UJ	0.103 UJ	0.0206 UJ	0.0206 UJ	0.0123 UJ	0.0206 UJ	0.0206 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-020119	2/1/2019	0.0117 U	0.0293 U	0.0195 U	0.0391 U	0.0117 U	0.0391 U	0.0195 U	0.0391 U	0.0391 U	0.0117 U	0.0977 U	0.0195 U	0.0195 U	0.0117 U	0.0195 U	0.0195 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-020519	2/5/2019	0.0120 UJ	0.0301 UJ	0.0200 UJ	0.0401 UJ	0.0120 UJ	0.0401 UJ	0.0200 UJ	0.0401 UJ	0.0401 UJ	0.0120 UJ	0.100 UJ	0.0200 UJ	0.0200 UJ	0.0120 UJ	0.0200 UJ	0.0200 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-020619	2/6/2019	0.0122 UJ	0.0304 UJ	0.0203 UJ	0.0405 UJ	0.0122 UJ	0.0405 UJ	0.0203 UJ	0.0405 UJ	0.0405 UJ	0.0122 UJ	0.101 UJ	0.0203 UJ	0.0203 UJ	0.0122 UJ	0.0203 UJ	0.0203 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-020719	2/7/2019	0.0117 U	0.0291 U	0.0194 U	0.0388 U	0.0117 U	0.0388 U	0.0194 U	0.0388 U	0.0388 U	0.0117 U	0.0971 U	0.0194 U	0.0194 U	0.0117 U	0.0194 U	0.0194 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-020819	2/8/2019	0.0118 U	0.0294 U	0.0196 U	0.0393 U	0.0118 U	0.0393 U	0.0196 U	0.0393 U	0.0393 U	0.0118 U	0.0981 U	0.0196 U	0.0196 U	0.0118 U	0.0196 U	0.0196 U	507	10.0 U	9.00 U	497
EB-021919	2/19/2019	0.0120 UJ	0.0299 UJ	0.0200 UJ	0.0399 UJ	0.0120 UJ	0.0399 UJ	0.0200 UJ	0.0399 UJ	0.0399 UJ	0.0120 UJ	0.0998 UJ	0.0200 UJ	0.0200 UJ	0.0120 UJ	0.0200 UJ	0.0200 UJ	12.0 U	10.0 UJ	9.00 U	15.0 U
EB-022019	2/20/2019	0.0118 U	0.0296 U	0.0197 U	0.0395 U	0.0118 U	0.0395 U	0.0197 U	0.0395 U	0.0395 U	0.0118 U	0.0987 U	0.0197 U	0.0197 U	0.0118 U	0.0197 U	0.0197 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-022619	2/26/2019	0.0123 UJ	0.0307 UJ	0.0205 UJ	0.0410 UJ	0.0123 UJ	0.0410 UJ	0.0205 UJ	0.0410 UJ	0.0410 UJ	0.0123 UJ	0.102 UJ	0.0205 UJ	0.0205 UJ	0.0123 UJ	0.0205 UJ	0.0205 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-022719	2/27/2019	0.0120 U	0.0300 U	0.0200 U	0.0400 U	0.00611 J	0.0400 U	0.0123 J	0.0185 J	0.0400 U	0.0120 U	0.100 U	0.0200 U	0.0200 U	0.0120 U	0.0200 U	0.0200 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-022819	2/28/2019	0.0120 U	0.0300 U	0.0200 U	0.0399 U	0.0120 U	0.0399 U	0.0200 U	0.0399 U	0.0399 U	0.0120 U	0.0999 U	0.0200 U	0.0200 U	0.0120 U	0.0200 U	0.0200 U	12.0 U	17.9	9.00 U	15.0 U
EB-030119	3/1/2019	0.0121 U	0.0303 U	0.0202 U	0.0404 U	0.0121 U	0.0404 U	0.0202 U	0.0404 U	0.0404 U	0.0121 U	0.101 U	0.0202 U	0.0202 U	0.0121 U	0.0202 U	0.0202 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-030519	3/5/2019	0.0120 R	0.0299 R	0.0200 R	0.0399 R	0.0120 R	0.0399 R	0.0200 R	0.0399 R	0.0399 R	0.0120 R	0.0998 R	0.0200 R	0.0200 R	0.0120 R	0.0200 R	0.0200 R	12.0 U	10.0 U	9.00 U	15.0 U
EB-030619	3/6/2019	0.0121 R	0.0303 R	0.0202 R	0.0404 R	0.0121 R	0.0404 R	0.0202 R	0.0404 R	0.0404 R	0.0121 R	0.101 R	0.0202 R	0.0202 R	0.0121 R	0.0202 R	0.0202 R	12.0 U	10.0 U	9.00 U	4.60 J
EB-030719	3/7/2019	0.0126 UJ	0.0315 UJ	0.0210 UJ	0.0420 UJ	0.0126 UJ	0.0420 UJ	0.0210 UJ	0.0420 UJ	0.0420 UJ	0.0126 UJ	0.105 UJ	0.0210 UJ	0.0210 UJ	0.0126 UJ	0.0210 UJ	0.0210 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-030819	3/8/2019	0.0115 UJ	0.0288 UJ	0.0192 UJ	0.0384 UJ	0.0115 UJ	0.0384 UJ	0.0192 UJ	0.0384 UJ	0.0384 UJ	0.0115 UJ	0.0960 UJ	0.0192 UJ	0.0192 UJ	0.0115 UJ	0.0192 UJ	0.0192 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-031919	3/19/2019	0.0116 U	0.0290 U	0.0193 U	0.0387 U	0.0116 U	0.0387 U	0.0193 U	0.0387 U	0.0387 U	0.0116 U	0.0967 U	0.0193 U	0.0193 U	0.0116 U	0.0193 U	0.0193 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-032019	3/20/2019	0.0121 U	0.0302 U	0.0202 U	0.0403 U	0.0121 U	0.0403 U	0.0202 U	0.0403 U	0.0403 U	0.0121 U	0.101 U	0.0202 U	0.0202 U	0.0121 U	0.0202 U	0.0202 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-032119	3/21/2019	0.0122 UJ	0.0304 UJ	0.0203 UJ	0.0406 UJ	0.0122 UJ	0.0406 UJ	0.0203 UJ	0.0406 UJ	0.0406 UJ	0.0122 UJ	0.101 UJ	0.0203 UJ	0.0203 UJ	0.0122 UJ	0.0203 UJ	0.0203 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-032219	3/22/2019	0.0121 U	0.0303 U	0.0202 U	0.0404 U	0.0121 U	0.0404 U	0.0202 U	0.0404 U	0.0404 U	0.0121 U	0.101 U	0.0202 U	0.0202 U	0.0121 U	0.0202 U	0.0202 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-032619	3/26/2019	0.0116 U	0.0289 U	0.0193 U	0.0385 U	0.0116 U	0.0385 U	0.0193 U	0.0385 U	0.0385 U	0.0116 U	0.0963 U	0.0193 U	0.0193 U	0.0116 U	0.0193 U	0.0193 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-032719	3/27/2019	0.0123 U	0.0308 U	0.0205 U	0.0410 U	0.0123 U	0.0410 U	0.0205 U	0.0410 U	0.0410 U	0.0123 U	0.103 U	0.0205 U	0.0205 U	0.0123 U	0.0205 U	0.0205 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-032819	3/28/2019	0.0123 UJ	0.0309 UJ	0.0206 UJ	0.0411 UJ	0.0123 UJ	0.0411 UJ	0.0206 UJ	0.0411 UJ	0.0411 UJ	0.0123 UJ	0.103 UJ	0.0206 UJ	0.0206 UJ	0.0123 UJ	0.0206 UJ	0.0206 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-040119	4/1/2019	0.0124 U	0.0311 U	0.0207 U	0.0415 U	0.0124 U	0.0415 U	0.0207 U	0.0415 U	0.0415 U	0.0124 U	0.104 U	0.0207 U	0.0207 U	0.0124 U	0.0207 U	0.0207 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-040219	4/2/2019	0.0114 UJ	0.0285 UJ	0.0190 UJ	0.0380 UJ	0.0114 UJ	0.0380 UJ	0.0190 UJ	0.0380 UJ	0.0380 UJ	0.0114 UJ	0.0950 UJ	0.0190 UJ	0.0190 UJ	0.0114 UJ	0.0190 UJ	0.0190 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-040319	4/3/2019	0.0117 UJ	0.0293 UJ	0.0196 UJ	0.0391 UJ	0.0117 UJ	0.0391 UJ	0.0196 UJ	0.0391 UJ	0.0391 UJ	0.0117 UJ	0.0978 UJ	0.0196 UJ	0.0196 UJ	0.0117 UJ	0.0196 UJ	0.0196 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-040419	4/4/2019	0.0115 UJ	0.0287 UJ	0.0192 UJ	0.0383 UJ	0.0115 UJ	0.0383 UJ	0.0192 UJ	0.0383 UJ	0.0383 UJ	0.0115 UJ	0.0958 UJ	0.0192 UJ	0.0192 UJ	0.0115 UJ	0.0192 UJ	0.0192 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-040419A	4/4/2019	0.0165 J	0.0285 U	0.0190 U	0.0380 U	0.0114 U	0.0380 U	0.0190 U	0.0380 U	0.0380 U	0.0114 U	0.0950 U	0.0190 U	0.0190 U	0.0174 J	0.0190 U	0.0190 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-040919	4/9/2019	0.0121 R	0.0302 R	0.0201 R	0.0402 R	0.0121 R	0.0402 R	0.0201 R	0.0402 R	0.0402 R	0.0121 R	0.101 R	0.0201 R	0.0201 R	0.0121 R	0.0201 R	0.0201 R	12.0 U	10.0 U	9.00 U	15.0 U
EB-041119	4/11/2019	0.0121 UJ	0.0301 UJ	0.0201 UJ	0.0402 UJ	0.0121 UJ	0.0402 UJ	0.0201 UJ	0.0402 UJ	0.0402 UJ	0.0121 UJ	0.100 UJ	0.0201 UJ	0.0201 UJ	0.0121 UJ	0.0201 UJ	0.0201 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-041219	4/12/2019	0.0121 U	0.0302 U	0.0201 U	0.0190 J	0.0149 J	0.0300 J	0.0329 J	0.0310 J	0.0311 J	0.0338 J	0.101 U	0.0201 U	0.0312 J	0.0121 U	0.0201 U	0.0201 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-041619	4/16/2019	0.0123 U	0.0308 U	0.0206 U	0.0411 U	0.0123 U	0.0411 U	0.0206 U	0.0411 U	0.0411 U	0.0123 U	0.103 U	0.0206 U	0.0206 U	0.0123 U	0.0206 U	0.0206 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-041719	4/17/2019	0.0124 UJ	0.0310 UJ	0.0207 UJ	0.0413 UJ	0.0124 UJ	0.0413 UJ	0.0207 UJ	0.0413 UJ	0.0413 UJ	0.0124 UJ	0.103 UJ	0.0207 UJ	0.0207 UJ	0.0124 UJ	0.0207 UJ	0.0207 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-050719	5/7/2019	0.0700 J	0.0294 U	0.0196 U	0.0392 U	0.0118 U	0.0392 U	0.0196 U	0.0392 U	0.0392 U	0.0118 U	0.0980 U	0.0196 U	0.0196 U	0.0118 U	0.0212 J	0.0196 U	12.0 U	991	963	11.8 J
EB-050919	5/9/2019	0.0122 U	0.0306 U	0.0204 U	0.0408 U	0.0122 U	0.0408 U	0.0204 U	0.0408 U	0.0408 U	0.0122 U	0.102 U	0.0204 U	0.0204 U	0.0122 U	0.0204 U	0.0204 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-051019	5/10/2019	0.0127 U	0.0317 U	0.0211 U	0.0423 U	0.0127 U	0.0423 U	0.0211 U	0.0423 U	0.0423 U	0.0127 U	0.106 U	0.0211 U	0.0211 U	0.0127 U	0.0211 U	0.0211 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-051419	5/14/2019	0.0115 U	0.0286 U	0.0191 U	0.0382 U	0.0115 U	0.0382 U	0.0191 U	0.0382 U	0.0382 U	0.0115 U	0.0955 U	0.0191 U	0.0191 U	0.0115 U	0.0191 U	0.0191 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-051519	5/15/2019	0.0120 U	0.0300 U	0.0200 U	0.0400 U	0.0120 U	0.0400 U	0.0200 U	0.0400 U	0.0400 U	0.0120 U	0.100 U	0.0200 U	0.0200 U	0.0120 U	0.0200 U	0.0200 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-051619	5/16/2019	0.0122 U	0.0305 U	0.0204 U	0.0131 J	0.0122 U	0.0407 U	0.0204 U	0.0407 U	0.0239 J	0.00748 J	0.102 U	0.0204 U	0.0204 U	0.0122 U	0.0204 U	0.0127 J	12.0 U	10.0 U	15.0 U	15.0 U
EB-051719	5/17/2019	0.0121 U	0.0301 U	0.0201 U	0.0402 U	0.0121 U	0.0402 U	0.0201 U	0.0402 U	0.0402 U	0.0121 U	0.100 U	0.0201 U	0.0201 U	0.0121 U	0.0201 U	0.0201 U	12.0 U	10.0 U	15.0 U	15.0 U
EB-052119	5/21/2019	0.0125 UJ	0.0312 UJ	0.0208 UJ	0.0416 UJ	0.0125 UJ	0.0416 UJ	0.0208 UJ	0.0416 UJ	0.0416 UJ	0.0125 UJ	0.104 UJ	0.0208 UJ	0.0208 UJ	0.0125 UJ	0.0208 UJ	0.0208 UJ	12.0 U	10.0 U	9.00 U	5.33 J
EB-052219	5/22/2019	0.0125 UJ	0.0312 UJ	0.0208 UJ	0.0415 UJ	0.0125 UJ	0.0415 UJ	0.0208 UJ	0.0415 UJ	0.0415 UJ	0.0125 UJ	0.104 UJ	0.0208 UJ	0.0208 UJ	0.0125 UJ	0.0208 UJ	0.0208 UJ	12.0 U	10.0 U	9.00 U	13.4 J
EB-052319	5/23/2019	0.0122 U	0.0305 U	0.0203 U	0.0406 U	0.0122 U	0.0406 U	0.0203 U	0.0406 U	0.0406 U	0.0122 U	0.102 U	0.0203 U	0.0203 U	0.0122 U	0.0203 U	0.0203 U	12.0 U	10.0 U	9.00 U	5.01 J
EB-052919	5/29/2019	0.0118 U	0.0295 U	0.0197 U	0.0394 U	0.0118 U	0.0394 U	0.0197 U	0.0394 U	0.0394 U	0.0118 U	0.0985 U	0.0197 U	0.0197 U	0.0118 U	0.0197 U	0.0197 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-053019	5/30/2019	0.0121 U	0.0303 U	0.0202 U	0.0404 U	0.0121 U	0.0404 U	0.0202 U	0.0404 U	0.0404 U	0.0121 U	0.101 U	0.0202 U	0.0202 U	0.0121 U	0.0202 U	0.0202 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-053119	5/31/2019	0.0118 U	0.0295 U	0.0197 U	0.0394 U	0.0118 U	0.0394 U	0.0197 U	0.0394 U	0.0394 U	0.0118 U	0.0985 U	0.0197 U	0.0197 U	0.0118 U	0.0197 U	0.0197 U	12.0 U	10.0 U	9.00 U	15.0 U

TABLE C-1
EQUIPMENT BLANK ANALYTICAL RESULTS

Equipment Blank ID	Sampling Date	Polycyclic Aromatic Hydrocarbons (µg/L)																Metals (Total) (µg/L)			
		2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Antimony	Copper	Lead	Zinc
EB-060419	6/4/2019	0.0120 U	0.0301 U	0.0201 U	0.0401 U	0.0120 U	0.0401 U	0.0201 U	0.0401 U	0.0401 U	0.0120 U	0.100 U	0.0201 U	0.0201 U	0.0120 U	0.0201 U	0.0201 U	12.0 U	10.0 U	9.00 U	7.21 J
EB-060519	6/5/2019	0.0122 U	0.0304 U	0.0203 U	0.0405 U	0.0122 U	0.0405 U	0.0203 U	0.0405 U	0.0405 U	0.0122 U	0.101 U	0.0203 U	0.0203 U	0.0122 U	0.0203 U	0.0203 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-060619	6/6/2019	0.0116 UJ	0.0291 UJ	0.0194 UJ	0.0388 UJ	0.0116 UJ	0.0388 UJ	0.0194 UJ	0.0388 UJ	0.0388 UJ	0.0116 UJ	0.0970 UJ	0.0194 UJ	0.0194 UJ	0.0116 UJ	0.0194 UJ	0.0194 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-060719	6/7/2019	0.0120 UJ	0.0301 UJ	0.0201 UJ	0.0401 UJ	0.0120 UJ	0.0401 UJ	0.0201 UJ	0.0401 UJ	0.0401 UJ	0.0120 UJ	0.100 UJ	0.0201 UJ	0.0201 UJ	0.0120 UJ	0.0201 UJ	0.0201 UJ	12.0 U	10.0 U	9.00 U	15.0 U
EB-100819	10/8/2019	0.0126 U	0.0314 U	0.0419 U	0.0419 U	0.0126 U	0.0419 U	0.0209 U	0.0419 U	0.0419 U	0.0126 U	0.105 U	0.0419 U	0.0209 U	0.0126 U	0.0209 U	0.0209 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-100919	10/9/2019	0.0118 U	0.0295 U	0.0393 U	0.0393 U	0.0118 U	0.0393 U	0.0196 U	0.0393 U	0.0393 U	0.0118 U	0.0982 U	0.0393 U	0.0196 U	0.0118 U	0.0196 U	0.0196 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-101119	10/11/2019	0.0117 U	0.0292 U	0.0389 U	0.0389 U	0.0117 U	0.0389 U	0.0195 U	0.0389 U	0.0389 U	0.0117 U	0.0973 U	0.0389 U	0.0195 U	0.0117 U	0.0195 U	0.0195 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-101519	10/15/2019	0.0121 U	0.0302 U	0.0403 U	0.0129 J	0.00992 J	0.0403 U	0.0132 J	0.0403 U	0.0134 J	0.00886 J	0.101 U	0.0403 U	0.0201 U	0.0121 U	0.0201 U	0.0101 J	12.0 U	10.0 U	9.00 U	15.0 U
EB-101619	10/16/2019	0.0123 U	0.0307 U	0.0409 U	0.0409 U	0.0123 U	0.0409 U	0.0205 U	0.0409 U	0.0409 U	0.0123 U	0.102 U	0.0409 U	0.0205 U	0.0123 U	0.0140 J	0.00876 J	12.0 U	10.0 U	9.00 U	14.0 J
EB-101719	10/17/2019	0.0123 U	0.0308 U	0.0411 U	0.0411 U	0.0123 U	0.0411 U	0.0102 J	0.0411 U	0.0411 U	0.0123 U	0.103 U	0.0411 U	0.0205 U	0.0123 U	0.0205 U	0.0205 U	12.0 U	10.0 U	9.00 U	11.4 J
EB-101819	10/18/2019	0.0115 U	0.0288 U	0.0384 U	0.0384 U	0.0115 U	0.0384 U	0.0192 U	0.0384 U	0.0384 U	0.0115 U	0.0960 U	0.0384 U	0.0192 U	0.0115 U	0.0192 U	0.0192 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-102219	10/22/2019	0.0124 UJ	0.0311 UJ	0.0415 UJ	0.0415 UJ	0.0124 UJ	0.0415 UJ	0.0207 UJ	0.0415 UJ	0.0415 UJ	0.0124 UJ	0.104 UJ	0.0415 UJ	0.0207 UJ	0.0124 UJ	0.0207 UJ	0.0207 UJ	12.0 U	10.0 U	9.00 U	4.73 J
EB-102319	10/23/2019	0.0117 U	0.0293 U	0.0390 U	0.0390 U	0.0117 U	0.0390 U	0.0195 U	0.0390 U	0.0390 U	0.0117 U	0.0976 U	0.0390 U	0.0195 U	0.0117 U	0.0195 U	0.0195 U	12.0 U	10.0 U	9.00 U	5.76 J
EB-102419	10/24/2019	0.0122 U	0.0305 U	0.0407 U	0.0407 U	0.0122 U	0.0407 U	0.0203 U	0.0407 U	0.0407 U	0.0122 U	0.102 U	0.0407 U	0.0203 U	0.0122 U	0.0203 U	0.0203 U	12.0 U	10.0 U	9.00 U	6.77 J
EB-102519	10/25/2019	0.0123 U	0.0309 U	0.0412 U	0.0412 U	0.0123 U	0.0412 U	0.0206 U	0.0412 U	0.0412 U	0.0123 U	0.103 U	0.0412 U	0.0206 U	0.0123 U	0.0206 U	0.0206 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-102819	10/28/2019	0.0123 U	0.0308 U	0.0410 U	0.0410 U	0.00658 J	0.0410 U	0.0205 U	0.0410 U	0.0410 U	0.0123 U	0.103 U	0.0410 U	0.0205 U	0.0123 U	0.0205 U	0.0205 U	12.0 U	10.0 U	9.00 U	15.0 U
EB-102919	10/29/2019	0.0117 U	0.0293 U	0.0391 U	0.0283 J	0.0244 J	0.0344 J	0.0448 J	0.0352 J	0.0347 J	0.0393 J	0.0978 U	0.0391 U	0.0417 J	0.0117 U	0.0196 U	0.0196 U	1060	1030	1000	510
EB-103119	10/31/2019	0.0120 U	0.0300 U	0.0400 U	0.0400 U	0.0120 U	0.0400 U	0.0200 U	0.0400 U	0.0400 U	0.0120 U	0.100 U	0.0400 U	0.0200 U	0.0120 U	0.0200 U	0.0200 U	1020	983	962	492

Abbreviations and Notes:

µg/L - micrograms per liter
J - estimated value; the analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria
R- rejected
RI - Remedial investigation
U - analyte was analyzed for, but not detected above the limit of detection
UJ - estimated non-detect; the analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

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ATTACHMENT 1

PARCEL REPORTS WITH FIELD DATA AND LABORATORY ANALYTICAL REPORTS