REMEDIAL INVESTIGATION REPORT

WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE
PHOENIX, ARIZONA

December 28, 2017

Prepared for:

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
1110 West Washington Street
Phoenix, Arizona 85007

HGC Contract Number: ADEQ14-077537

Prepared by:

HYDRO GEO CHEM, INC.
3038 E. Cactus Road, Suite 3
Phoenix, Arizona 85032
(480) 421-1501

Project Number 2014042.30

HYDRO GEO CHEM, INC.
Environmental Science & Technology

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1110 West Washington Street
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Prepared by:

REGISTERED GEOLOGIST
CERTIFICATE NO.
30445
DANIEL V.
SOLA
12-28-17
Date Signed
ARIZONA, U.S.A.
exp. 9/30/2020

Michael J. Barden
Senior Hydrogeologist

Daniel V. Sola, R.G.
Vice President

December 28, 2017

EXECUTIVE SUMMARY

This Remedial Investigation (RI) report for the West Central Phoenix – North Canal Plume Water Quality Assurance Revolving Fund (WQARF) Registry Site in Phoenix, Arizona (Site), prepared by Hydro Geo Chem, Inc. (HGC), presents the results of RI activities and Early Response Action (ERA) evaluations conducted by HGC, Locus Technologies (Locus), and others from 1992 through 2016. RI activities and ERA evaluations conducted prior to 2005 were documented in greater detail in the *Interim Remedial Investigation Report, WCP North Canal Plume WQARF Site, Phoenix, Arizona*, completed by Locus in August 2005.

Site Description

The Site is generally bounded to the north by Indian School Road, to the south by West Flower Street, to the west by 41stAvenue, and to the east by Grand Avenue, and is in an urban setting that includes a mixture of commercial and light industrial businesses; warehouses; and manufacturing facilities. The Site was initially utilized for agricultural purposes after irrigation was made possible by construction of an unlined dirt-bottomed canal, the Grand Canal, constructed in 1878 and bordering the southern edge of the Site. The canal was unlined for over 100 years, providing a source of recharge to the groundwater that created a water table mound and caused the groundwater to flow in a northerly direction with a steep gradient. The canal was lined in 1998, which eliminated the mounding effect and caused alteration of the groundwater flow to a southerly direction with a flatter gradient.

Development of industrial activities at the Site began circa 1956 and has included metal plating, metal casting, machine and tool manufacturing, furniture manufacturing, and automobile salvage and repair operations. The contaminants of concern (COCs) include trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethene (1,1-DCE), and chromium, all related to industrial processes. When the Site was first developed, there was no municipal sewer service, and on-site systems consisting of septic tanks and seepage pits were used for wastewater disposal. Drywells have also been constructed across the Site. Some of the facilities were found to have had releases to the environment from equipment failures, overflows, and leaking underground storage tanks (LUSTs) that impacted the soil and groundwater.

Investigations

Preliminary Assessments were conducted at several properties beginning in 1987, prior to commencement of the RI and ERA activities. Soil and soil gas samples were collected and analyzed, and monitoring wells were installed and sampled, in an effort to characterize the

magnitude and extent of the impacted groundwater and soil, and to identify the source of the releases. Chlorinated volatile organic compounds, petroleum hydrocarbon compounds, and chromium were reported in soil, soil gas and groundwater samples. The groundwater flow direction was identified to be in a northerly direction at this time. Fourteen monitoring wells were installed as part of the initial investigational activities. These wells all went dry after the canal was lined in 1998, and by 2000 the groundwater levels had dropped more than 36 feet and the groundwater flow direction normalized to the south from lack of direct canal infiltration.

In 2001, RI activities specific to the Site were initiated, with ERA evaluations conducted concurrent with RI activities. Work was conducted by Locus through 2008, with additional work conducted by HGC from 2013 to the present. The activities included soil and soil gas sampling from soil borings and monitoring well boreholes, grab groundwater sampling, and the installation and sampling of monitoring wells. This work was conducted at various facilities of concern at the Site and within the City of Phoenix right-of-ways. Later, passive soil gas surveys were conducted to identify other potential contributing sources that may not have been previously identified. An evaluation of the deeper aquifer was also conducted to evaluate whether the COCs identified in the shallow water table aquifer were migrating vertically downward. The evaluation consisted of the installation of and sampling from wells in the deeper aquifer, and vertical profiling.

The results from the RI and ERA programs suggest the occurrence of three geographically and chemically distinct groundwater contaminant plumes within the Site with COCs above the Arizona Aquifer Water Quality Standards (AWQS): the Central Plume, West Plume, and East Plume. The West Plume is centered near 39th Avenue, between Indian School Road and the canal, and the dominant contaminants are TCE and 1,1-DCE. The Central Plume is centered near an abandoned drywell at the former Southwest Metal Industries facility, extending northward to the former Osborn Products Company facility and southward across the former Magic Metals Plating Company facility. TCE, 1,1-DCE, and chromium concentrations are the dominant COCs in this area, with hexavalent chromium (CrVI) generally being the dominant chromium species. The East Plume is centered within Grand Avenue 35th Avenue and the Grand Canal with the predominant COC being PCE.

An aquifer test (including step-drawdown and constant-rate) conducted in the Central Plume in 2007 yielded hydraulic conductivity estimates ranging from 1.6 to 17 feet per day (ft/d), Slug tests performed in the three plumes in October 2015 resulted in estimates of hydraulic conductivity ranging from 0.78 to 2.4 feet per day (ft/d) in the East Plume, 0.84 to 7.9 ft/d in the Central Plume and 0.05 to 2.0 ft/d in the West Plume. Calculated average linear groundwater flow velocities range between approximately 28 to 47 feet per year (ft/yr) in the East Plume, 19 to 115 ft/yr in the Central Plume and 1.1 to 17 ft/yr in the West Plume.

Evaluation of geochemical parameters from groundwater samples for natural attenuation indicated that, while there was some local evidence for reductive dechlorination of the chlorinated ethenes (PCE and TCE), the groundwater at the Site is primarily oxidizing and aerobic. Therefore, the potential for natural attenuation by microbial reductive dechlorination is generally limited.

The West Plume and Central Plume COC concentrations appear relatively stable, which may be due to the fine-grained nature of the aquifer that limits the rate of contaminant migration, particularly in the southern (downgradient) portion of the solute plumes. With no evident attenuation mechanism to remove PCE mass and stabilize the solute plume, the East Plume is expected to continue to migrate southward with groundwater flow and mingle with the West Osborn Complex Site plume (a separately identified WQARF site). The toe of the PCE solute plume (5 µg/L contour) currently is located between monitoring well WCP-205 and WCP-226.

The results of the evaluation of the deeper aquifer did not find evidence that the COCs have migrated downward at concentrations above the AWQS, likely due to the presence of a semi-confining layer separating the two aquifers.

Source Areas

Evaluation of the groundwater and soil gas data indicates the likely sources of the groundwater and soil vapor contamination are:

West Plume

- Former Precise/Paraflex Companies
- 4001 West Indian School Road
- Former Giltspur Exhibits
- Stevens Engineering

Central Plume

- Former Triad Trucking
- Former Southwest Metals Industries
- Former Pyramid Industries
- Former Osborn Products Company
- Former Magic Metals

East Plume

- HCZ Custom Homes/34th and Clarendon Avenue area

As of the last quarter of 2015, TCE concentrations as high as 102 micrograms per liter (µg/L) and 1,1-DCE concentrations as high as 74.4 µg/L were measured in wells in the West Plume.

As of the last quarter of 2015, TCE concentrations as high as 199 µg/L, PCE concentrations as high as 18.2 µg/L, 1,1-DCE concentrations as high as 51.3 µg/L and CrVI concentrations as high as 0.25 milligrams per liter (mg/L) were measured in wells in the Central Plume.

As of the last quarter of 2015, PCE concentrations as high as 231 µg/L were measured in the East Plume wells.

Evaluation of Human Health Concerns

Groundwater Use Pathway

Based on the potential future use of the groundwater as a water supply, exposures due to direct ingestion, inhalation or dermal contact with contaminated groundwater are considered a complete exposure pathway for the Site.

- *West Plume* – The COCs are 1,1-DCE and TCE, which are present at concentrations exceeding their AWQS.
- *Central Plume* – The COCs are chromium, 1,1-DCE, TCE and PCE, which are present at concentrations exceeding their AWQS.
- *East Plume* – The COC is PCE, which is present at concentrations exceeding the AWQS.

Soil Direct Contact Pathway

The properties are currently commercial/industrial land use, and this use is not anticipated to change in the future. Due to the typically indoor nature of the land use, the large extent of paved surface and the depth to contamination, a soil direct contact pathway is considered to be incomplete at the Site based on current land use.

Soil Vapor Pathway

The potential for vapor intrusion into buildings is a concern at nine of the identified potential source properties based on screening of shallow soil vapor concentrations against target levels for commercial/industrial facilities.

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ACRONYMS AND ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ACT	ACT Environmental Technology, Inc.
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AFY	acre-feet per year
AGRA	AGRA Earth and Environmental, Inc.
AMA	Active Management Area
amsl	above mean sea level
ASRAC	Arizona Superfund Response Action Contract
ASTM	American Society of Testing Materials
AWQS	Aquifer Water Quality Standards
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and xylenes
CAP	Central Arizona Project
CO_2	Carbon Dioxide
COC	Contaminant of Concern
COP	City of Phoenix
CrVI	Hexavalent Chromium
CrIII	Trivalent Chromium
DCA	Dichloroethane
DCE	Dichloroethene
DO	Dissolved Oxygen
EPA	United States Environmental Protection Agency
ERA	Early Response Action
ERI	Environmental Response, Inc.
FS	Feasibility Study
ft	feet / foot
gpm	gallons per minute
GEC	Geotechnical Environmental Consultants
GPL	Groundwater Protection Level
GPS	Global Positioning System
HGC	Hydro Geo Chem, Inc.
HI	Hazard Index
LAU	Lower Alluvial Aquifer
LSGS	Lower Sand and Gravel Subunit
LUST	Leaking Underground Storage Tank
MAU	Middle Alluvial Unit
MEK	Methyl ethyl ketone
MFGS	Middle Fine-Grained Subunit
MCL	Maximum Contaminant Level
MGD	million gallons per day
mg/kg	milligrams per kilogram

ACRONYMS AND ABBREVIATIONS (Continued)

mg/L	milligrams per liter
MP	MP Environmental Services, Inc.
MTBE	Methyl tertbutyl ether
NCP	North Canal Plume
ng	nanograms
ORP	Oxidation Reduction Potential
PAH	Polyaromatic Hydrocarbons
PA/SI	Preliminary Assessments and Site Investigations
PCE	Tetrachloroethene
PDB	Passive Diffusion Bag
PID	Photoionization Detector
PSC	Phillips Service Corporation/PSC Industrial Services
PTR	Philip Transportation and Remediation, Inc.
RI	Remedial Investigation
RO	Remedial Objective
RSL	Regional Screening Level
SGWS	Shallow Groundwater System
SRL	Soil Remediation Levels
SRP	Salt River Project Agricultural Improvement and Power District
TCA	Trichloroethane
TCE	Trichloroethene
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
UAU	Upper Alluvial Aquifer
UCGS	Upper Coarse-Grained Subunit
UFGS	Upper Fine-Grained Subunit
UST	Underground Storage Tank
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
VOC	Volatile Organic Compound
WCP	West Central Phoenix
WGA	West Grand Avenue
WOC	West Osborn Complex
WPRA	West Phoenix Revitalization Area
WQARF	Water Quality Assurance Revolving Fund

1. INTRODUCTION

This report summarizes the results of Remedial Investigation (RI) activities and Early Response Action (ERA) evaluations performed at the West Central Phoenix (WCP) North Canal Plume (NCP) Water Quality Assurance Revolving Fund (WQARF) Registry Site (Site). The Site includes a contaminant plume that originally was considered a part of a larger contaminant plume that was identified as the WCP WQARF Priority List Site (WCP Site). The WCP Site was later determined to be made up of five separate contaminant plumes and was divided into five separate WQARF sites. The Site is one of the separate contaminant plumes and is identified as the NCP WQARF Registry Site, referred to in this report as the Site. This report describes the results of RI activities completed at the Site beginning in 1992 and continuing on through 2016, and incorporates information and data from various consultants reports and primarily from the *Interim Remedial Investigation Report, WCP North Canal Plume WQARF Site, Phoenix, Arizona*, completed by Locus Technologies (Locus) in August 2005 (Locus, 2005a). The *Interim* report described the results of RI activities and earlier investigations conducted prior to March 2005 by other consultants (including Locus, Earth Tech Corporation [Earth Tech], Weston Solutions, Inc. [Weston], ACT Environmental Technologies, Inc. [ACT], Geotechnical & Environmental Consultants [GEC], Basin & Range Hydrogeologists, Inc., [Basin & Range] JBL & Associates [JBL], Allen Stephenson & Associates, Burgess & Niple, Agra Earth & Environmental, Inc. [AGRA], and others). Hydro Geo Chem, Inc. (HGC) has prepared this RI report on behalf of the Arizona Department of Environmental Quality (ADEQ) under the Arizona Superfund Response Action Contract (ASRAC) No. 14-077537. The RI was conducted to satisfy the requirements pursuant to Arizona Revised Statutes (A.R.S.) §49-287.03 and Arizona Administrative Code (A.A.C.) R18-16-406.

1.1 Remedial Investigation Objectives

The RI was conducted at the Site as part of the WQARF program, with goals to assess the following (per A.A.C. R18-16-406(A)):

1. Establish the nature and extent of the contamination and the sources thereof;
2. Identify current and potential impacts to public health, welfare, and the environment;
3. Identify current and reasonably foreseeable uses of land and waters of the state; and
4. Obtain and evaluate any other information necessary for identification and comparison of alternative remedial actions.

The RI process is designed to provide a stepwise evaluation of the presence, magnitude, and extent of contamination, to assess potential contaminant source areas, and to identify potential exposure pathways. The objective of the RI is to provide sufficient information to identify appropriate Remedial Objectives (ROs) for the Site. The Feasibility Study (FS) phase of the WQARF process will evaluate specific remedial measures and strategies required to meet the established ROs.

1.2 Report Organization

This report includes the compilation of geological, hydrogeological, and land use information about the Site from previous and current investigations, a description of current and former businesses in the area that potentially used, stored, or disposed of hazardous substances, subsequent investigations associated with these findings, and a review of the associated ERA evaluations. Facilities described in this report were evaluated based on the results of detailed literature searches, groundwater sampling and Preliminary Assessments and Site Investigations (PA/SI), field reconnaissance, and responses to questionnaires. Some facilities within the Site conducted separate site characterization activities that included groundwater sampling and evaluation, and are described where appropriate. Additional related investigations were performed to gather groundwater contamination, flow and vertical profile information across the Site. This information was used to identify chlorinated volatile organic compounds (CVOCs) and chromium contaminant plumes based on identified potential sources and site-specific groundwater analytical data.

This RI report summarizes the following information and data pertaining to the Site:

- Boring logs and well construction diagrams;
- Physical setting of the Site, including topography, climate, geology, and hydrogeologic setting;
- Analytical results for groundwater, soil vapor and soil samples, including comparisons to appropriate regulatory standards, criteria, and guidance [e.g., ADEQ Soil Remediation Levels (SRLs) and Aquifer Water Quality Standards (AWQS); United States Environmental Protection Agency (EPA) screening levels for soil vapor (Arizona does not currently have soil vapor standards, criteria, or guidance values for concentrations of volatile chemicals in subsurface vapor)];
- Plans for various facilities, boring locations and monitoring well locations;
- Groundwater flow direction, concentrations of groundwater contaminants and vertical profiling;
- A conceptual site model of the Site;
- A discussion of the physical and analytical results;

- A land and water use study;
- A risk evaluation; and
- Gaps in data for the completion of the RI.

1.3 Site Description

The WCP Site is located in the western portion of Phoenix, and is generally bounded to the north by Highland Avenue, to the south by Van Buren Street, to the west by 41st Avenue, and to the east by 27th Avenue (Figure 1). As previously mentioned, the Site was originally designated as part of the larger WCP WQARF Site in 1987 and placed on the Priority List. Subsequent investigations indicated that the original WCP WQARF Site consisted of multiple separate plumes of contamination, including the Site. In 1997, the ADEQ established the WQARF Registry, replacing the Priority List. In 1998, the larger WCP Site was divided into five WQARF Registry Sites: 1) North Plume WQARF Registry Site (North Plume Site); 2) North Canal Plume WQARF Registry Site (Site); 3) East Grand Avenue WQARF Registry Site (EGA Site); 4) West Grand Avenue WQARF Registry Site (WGA Site); and 5) West Osborn Complex WQARF Registry Site (WOC Site) (ADEQ, 2014).

The Site is the focus of this RI. The Site is generally bounded to the north by Indian School Road, to the south by West Flower Street, to the west by 40thAvenue, and to the east by Grand Avenue. The Site is located in an urban setting that includes a mixture of commercial and light industrial businesses; warehouses; and manufacturing facilities. Historically, industrial activities within the Site boundary have included metal plating, metal casting, machine and tool manufacturing, furniture manufacturing, and automobile salvage and repair operations (Locus, 2005a).

Analytical results from the RI and ERA evaluations suggest the occurrence of three separate groundwater contaminant plumes within the Site, as depicted on Figure 2. West of 35th Avenue, where two plumes have been delineated, the dominant contaminant of concern (COC) is trichloroethene (TCE). The larger of the two western plumes, identified as the Central Plume, is centered near an abandoned drywell at the former Southwest Metal Plating Industries (Southwest Metal) facility, extending northward to the former Osborn Products Company (Osborn Products) facility and southward across the former Magic Metals Plating Company (Magic Metals) facility. Historically, TCE, 1,1-dichloroethene (1,1-DCE), and chromium concentrations have been highest in this area. Further to the west, a smaller plume identified as the West Plume is centered near the intersection of 39th Avenue and Clarendon Avenue. Results from soil, groundwater sampling, and soil gas sampling suggest that a contributing source may be present at the former

Precise Metal Products Company/Paraflex Machine and Tool Company (Precise/Paraflex) and/or the former Giltspur Exhibits facilities.

In the East Plume, tetrachloroethene (PCE) is the predominant contaminant. Analytical results from East Plume monitoring wells suggest that the plume is centered near the intersection of 34th Avenue and Clarendon Avenue, with contaminant concentrations attenuating to the east. TCE concentrations in the East Plume wells are considerably lower than those reported in wells within the Central and West Plumes.

1.4 Industrial Facilities

Like most of the central part of the Phoenix metropolitan area, the WCP Site was historically developed for agricultural purposes after irrigation was made possible by construction of an unlined dirt-bottomed canal, the Grand Canal, in 1878 (Geotrans, Inc., 2004). The Salt River Project Agricultural Improvement and Power District (SRP) operates and maintains the Grand Canal that transects the WCP Site. The Grand Canal was unlined for over 100 years, providing a source of recharge to the groundwater beneath the WCP Site. The recharge created a water table mound, which acted as a groundwater divide between the Site and the adjacent WOC Site to the south. The section of the Grand Canal located closest to the Site was lined with concrete in January 1998 (Geotrans, Inc., 2004). The lining of the canal created a change in groundwater conditions in the area. The resulting change has influenced the hydraulic gradients and flow directions beneath the Site.

Development of the Site for industrial uses began in approximately 1956, with most of the current development completed by 1979 (HGL, 2006a; Maricopa County Assessor's Website, 2015). Industrial surveys were conducted to identify current or past businesses that may have used COCs and contributed to groundwater contamination (HGL, 2006b; HGL, 2014; HGL, 2016). The industrial facilities are listed below and are separated based on plume area location and depicted on Figure 2. Investigation activities conducted for the majority of these facilities are described in Sections 3, 4 and 5.

1.4.1 West Plume

- The former Precise/Paraflex facility (1963-2013) is located at 3856 West Clarendon Avenue and 3820, 3825, 3829 and 3839 North 39th Avenue. Precise/Paraflex and three subsidiary companies, Precision Marking, Paint Spray, Inc., and Perigee Metal Spinning, all operated at this facility starting in 1963. Conflicting information indicates that this facility had a vapor degreaser that used 1,1,1-trichloroethane (TCA) and TCE in the degreasing of metal parts until the late 1970s; however, it is unknown when vapor degreasing operations began and concluded and it is unclear whether 1,1,1-TCA or TCE was actually used in the degreaser. Although it was reported that PCE was not used on the property, manifests from August 2004 through October 2005 indicate PCE was used or they generated waste at the facility. The Paraflex Machine & Tool Company portion of the facility manufactured complete machined assemblies, including valve bodies and combustors which required welding, grinding, drilling, lathing and deburring of metal bar stock and round stock. Metal parts were etched and plated through a chrome conversion process. A water soluble oil was used as a lubricant and coolant for the lathe and milling operations and reportedly contained 1,1,1-TCA. Additional information on Precise/Paraflex can be found in the RI letter report by HGL (2014).

- The former Giltspur Exhibits facility is located at 3840/3842/3846 West Clarendon Avenue, immediately east of the Precise/Paraflex facility. Giltspur Exhibits designed and constructed trade show exhibits at the property from 1980 through at least 1998. Giltspur may have used TCA in 1991. Prior to 1980, Walker Displays operated at the 3846 address. Prefab Metal Manufacturing, General Metal Manufacturing and Supply, Howard Manufacturing and Jimmy's Marine Instruments operated at the 3842 address (ADEQ, 1992a). General Electric also operated at the 3840 Clarendon Avenue address from 1968 to 1987 and generated waste that may have included PCE, TCE and TCA.

The following existing and former facilities in the vicinity of the West Plume may have used COCs in their operations (HGL, 2016):

- Cordes Group, Inc., at 4011-B West Clarendon Avenue, a small quantity generator of non-halogenated waste that could contain a small percentage of PCE or TCE; Bootz & Duke Sign Company, located 4028 West Whitton Avenue, a generator of non-halogenated waste that could contain a small percentage of PCE or TCE; Highland Products, Inc. at 3650 North 40th Avenue where PCE was reported in 1993 soil gas samples around drum storage and above ground tank areas; former facilities at 4001 West Indian School Road; Budget RV & Self Storage, located at 4010 West Indian School Road; Manning Metal Products at 4151 West Whitton Avenue; and Stevens Engineering, Inc. at 3946 West Clarendon Avenue, known to have used TCE to clean metal parts.

The following existing and former facilities in the vicinity of the West Plume may have used COCs in their operations (Honeywell, 2017):

- Fluorocarbon Co./Fluorocarbon Inc., Arizona 3858 W. Clarendon Avenue, was a plastic fabricator that operated at this site from at least 1961 until at least 1966 and purchased 5-gallon cans of 1,1,1-TCA and TCE from Hill Brothers Chemical Co. in 1966. AA-Lectric Motors Inc./AA-Lectric Motor Sales and Service, Inc./Howard P Foley Co. 4070 W. Clarendon Avenue, AA-Lectric performed electric motor sales and service. A 1984 equipment list for this facility included a "solvent pump" and a "metal parts cleaning system". In 1986, the facility was using mineral spirits as a solvent. A 1991 wastewater record lists ten gallons of SafetyKleen solvent at the facility. Gilbert Engineering Co. 3630 W. Clarendon Avenue, operated a machine shop and foundry. In 1964, Gilbert is known to have purchased a 5-gallon can of TCE from Hill Brothers Chemical Co.

1.4.2 Central Plume

- The former Southwest Metal facility was located at 3615, 3625, 3633, 3703 and 3711 West Clarendon Avenue. This facility was managed as a sand foundry from 1957 to 1973 which consisted of constructing sand casts to form magnesium, aluminum and brass castings. The only wastes reportedly generated by Southwest Metal were the remnants of the sand casts, metal shavings and dust, which was sent to local landfills. L&M Manufacturing Co., which manufactured cold storage boxes, operated at this site from at least 1977 until at least 1983. In 1980, L&M reportedly had four 55-gallon drums of contact cement on site that contained 1,1,1-TCA. (HGL, 2014)(Honeywell, 2017).
- The former Osborn Products facility was located at 3702 and 3632 West Clarendon Avenue and operated from 1956 until 1984 (HGL, 2014). This facility was initially utilized for agricultural purposes, and then operated as a plating and machining business for aerospace parts from 1956 through 1984 and provided chrome plating services. The business housed machining equipment and three chromic acid baths. The chrome plating process consisted of acid baths and a rinse tank. Various cutting oils and coolants were used in the machining operation. Other operations included the use of TCE and 1,1,1-trichloroethane (1,1,1-TCA) as degreasing solvents (HGL, 2014).
- The former Magic Metals facility was located at 3632 West Whitton Avenue. Three different metal plating companies operated at the property between 1966 and 1987, including Electri-Onics and Americhem Engineering. In 1974, Electri-Onics is reported to have purchased nine drums of TCE from Hill Bros. Chemical Company (Honeywell, 2017). Magic Metals operated at the property from 1977 until April 1987 (ADEQ, 1989a), when the facility was abandoned by the company. Principal business activities of Magic Metals included nickel, chromium, copper and brass electroplating for automobiles, custom restorations, industrial parts, and antiques. The facility generated waste electroplating baths and rinses containing cyanide, waste caustics and unspecified waste solvents from stripping tanks, and waste acids (sulfuric and chromic). Four USTs located in this area were used for pre-treatment and holding of spent plating and acid solutions (HGL, 2014)
- The former Triad Trucking Company (Triad) facility was located at 3883 North 36th Avenue. Triad was an active LUST facility with known groundwater contamination due to a petroleum fuel release, initially reported in September 1987 (Locus, 2005b). The ADEQ LUST file identifies the facility as Stuck Fence (LUST #0345.01). Triad operated a shipping business at the facility prior to 1995, at which time the property was transferred to Stuck Fence.
- The former Pyramid Industries (Pyramid) facility was located at 3648 to 3700 North 36th Avenue (Figure 2). Pyramid operated from 1980 through 1991, during which time it staffed a workforce of approximately 50 employees (Locus, 2005b). The company manufactured coaxial cable connectors for the cable television industry. From 1965 through 1980, Gilbert Engineering conducted similar manufacturing operations at the property. According to ADEQ records, 1,1,1-TCA and chromic acid are known to have been used at the former Pyramid facility. Prior to 1985, a 25-gallon vapor degreaser was in operation. Two above-ground storage tanks holding mineral oil and recycled oil were

also located on the property. The former Pyramid main building was destroyed by fire in 1994. The building currently occupies the same general area as the previous building.

The following facilities are also located in the vicinity of the Central Plume, although are less likely to have contributed to the COC groundwater contamination:

- The Redburn Tire Company (Redburn) occupies adjacent properties at 3727/3801/3809/3817 W. Clarendon Avenue, and 3800/3802 W. Whitton Avenue. Tire sales, service, and re-treading operations have been conducted at the properties since 1959. Tire retreading activities may have included use of TCE, PCE, TCA, lead chromates and other chemicals (Locus, 2005a).
- The former DJM Construction Company facility (DJM) was located at 3720 West Whitton Avenue. DJM primarily used the property for storage of building supplies and company fleet vehicles. The fleet vehicles were historically fueled from a 4,000-gallon UST that contained gasoline. A 1,000-gallon UST also existed at the facility and stored oil (Allen, Stevenson, & Associates, 2000).
- The Diehl Equipment Company (Diehl) facility is located at 3775 North 36th Avenue (Figure 2). A review of the ADEQ UST database identified two diesel fuel USTs that were previously located on the property. The size and date of installation of the USTs is unknown.
- The Saban's Rent-a-Car (Saban's) facility is located north of the former Osborn Products facility at 3625 West Indian School Road (Figure 2). Saban's began operating at the property in 1966. Chlorinated solvents were not used, treated, or stored at the Saban's facility (Earth Tech, 1996c).

1.4.3 East Plume

- Schmidt Engineering Company, Inc. (Schmidt) was located at 3431 West Clarendon Avenue. This facility was utilized for manufacturing machined aircraft engines, engine parts and aerospace parts from 1969 through 1974. Schmidt moved next door to 3433 West Clarendon Avenue in 1975. Various cutting oils, solvents and coolants may have been used in the machining operation (HGL, 2006b).
- HCZ Custom Homes, Inc. (HCZ) is the current occupant at 3422 West Clarendon Avenue. HCZ is a single family custom home building contractor. Based on historical occupancy at this location, use of chlorinated solvents cannot be excluded. Historical occupants included A & J Glass Company, Inc. from 1964-1988, M & S Carpet Service from 1975-1979 and Tru-Temp Inc. from 1993-2003 (HGL, 2006b).
- A former spur of the Burlington Northern (BN) railroad ran along the east side of the HCZ property. HGC contacted BN to obtain records and/or manifests of possible hazardous materials shipments made along this spur or terminated in the area of the HCZ property. However, BN was unable to fulfill HGC's request since they no longer maintain any information or records for this former railroad spur.

1.5 Site Chronology

This section outlines a general chronology of events and investigative milestones for the Site:

1982 - 1989: CVOCs were first detected in groundwater in July 1982 in the WCP Site. The City of Phoenix (COP) detected TCE in four municipal public supply wells at concentrations exceeding the EPA Maximum Contaminant Level (MCL) and the ADEQ AWQS of 5 micrograms per liter (µg/L), including COP wells #70, #71, #151 and #152. The Arizona Department of Health Services (ADHS), SRP, and COP confirmed the presence of CVOCs in the groundwater during sampling events in 1983, 1985, and 1986. Groundwater from COP wells #70 and #71 contained the highest concentrations of TCE and, therefore, were shut down. Wells #151 and #152 were monitored for CVOC concentrations from 1982 until 1989. As a result of sampling conducted during February of 1989, COP elected to take both wells #151 and #152 off-line on March 7, 1989.

Initial field investigation activities for the WCP Site began in 1984. Several contaminants were detected in soil and groundwater samples collected during field investigations at the four facilities described above (Magic Metals, Precise/Paraflex, Osborn Products and Southwest Metals). The primary COCs found were PCE, TCE, 1,1-DCE, and chromium.

1987 - 2001: In 1987, the WCP Site was defined and designated a WQARF priority list site. In 1989, the WCP Site boundaries were redefined. In 1997, ADEQ established the WQARF Registry which replaced the priority list. The Site was placed on the WQARF Registry in June 1998, with a score of 22 out of a possible 120. The score was re-evaluated in 2000, with a revised score of 27. RI activities began in 2001.

2005: An Interim RI report documenting all activities conducted to date was issued in August by Locus. The Interim RI report also described the results of the initial ERA evaluations. ERA investigative activities included the evaluation of COCs present at suspected source areas at concentrations that may be contributing to VOC and metals contamination in groundwater underlying the Site. These activities included drilling four borings at each facility to a maximum depth of approximately 135 feet below ground surface (bgs). Soil and soil gas samples were collected from each boring and were analyzed in an onsite mobile laboratory. Upon encountering groundwater, one groundwater sample was collected from each boring (Locus, 2005a). Site groundwater monitor wells were sampled during the fourth quarter (Locus, 2005c).

2006: A second ERA evaluation and technical report was issued in October. Several facilities were identified as likely sources of the groundwater contamination at the Site. The facilities included, but were not limited to: the former Osborn Products facility, former Magic Metals facility, former Southwest Metal facility, and the former Precise/Paraflex facility (Figure 2). Other facilities were being investigated as additional potential sources of groundwater contamination.

2007: An aquifer test was carried out in September at the former Southwest Metal facility to help determine potential groundwater treatment options for the regional groundwater plume. Additionally, ADEQ conducted a soil vapor extraction (SVE) pilot test in February at the former Osborn Products facility. Based on the concentrations from the pilot test, the results did not merit a soil remediation system at that time.

2008: Additional soil gas samples were collected across two areas at the Site to aid in the evaluation and placement of additional monitoring wells.

2013: The existing monitoring well network was redeveloped for additional groundwater monitoring and sampling events. Depth to water was measured in each well and groundwater samples were collected and analyzed for the COCs. Results indicated that the plume may be migrating in a southerly direction.

ADEQ's UST Program State Lead Unit installed 26 wells and a SVE/air sparge remediation system at the former Triad Trucking Company property.

2014: Groundwater monitoring and sampling was conducted in February, water levels were monitored in May and June to study the effects on groundwater by SRP wells, and a passive soil gas survey was conducted along 33rd Avenue.

The remediation system at the former Triad Trucking Company property was shut down to test for contaminant rebound. Data indicated that TCE concentrations in the vicinity of the former Triad Trucking Company property declined, supporting the plume moving in a southerly direction. The Triad Trucking Company remediation system was restarted after benzene was detected in groundwater samples at concentrations greater than the AWQS.

2015: Groundwater monitoring and sampling events were conducted in February and November. In-well soil vapor sampling limited passive soil gas surveys were conducted in the East Plume to evaluate the area for local sources of contamination. Data indicated that PCE concentrations in groundwater may originate from sources near monitoring well WCP-213. Soil, soil gas and Hydropunch samples were collected from borings in the East Plume based upon the passive soil gas survey data. An additional monitoring well was installed near the downgradient boundary of the West Plume to delineate the current plume boundary. Limited slug testing was conducted across the Site to gather additional hydrogeologic data. An updated Land and Water Use Survey was completed.

2016: A monitoring well was installed and sampled in the West Plume to evaluate conditions in the deeper Lower Sand and Gravel Subunit aquifer. An industrial survey was conducted in the West Plume (HGL, 2016) to identify additional potential sources of groundwater contamination. Three facilities were identified as additional potential contributing sources to the groundwater contamination identified in the West Plume:

1. The Cordes Group, Inc., 4011-B West Clarendon Avenue,
2. Bootz & Duke Sign Company, 4028 West Whitton Avenue, and
3. Budget RV & Self Storage, 4010 West Indian School Road.

A limited active soil gas investigation was conducted in and around eight facilities, to fill data gaps for both source identification and vapor intrusion screening:

1. Govway Building,
2. 4001 West Indian School Road,
3. HCZ Homes area,
4. Stevens Engineering,
5. Former Southwest Metals,
6. Former Pyramid Industries,
7. Former Osborn Products, and
8. Triad Trucking.

2. PHYSICAL SETTING

2.1 Topography

Arizona is primarily divided into two main physiographic provinces: the Colorado Plateau and the Basin and Range (USGS, 1996). The Site is situated within the Basin and Range physiographic province. The Basin and Range physiographic province consists of broad alluvial basins dissected by northwest-southeast trending block-faulted Precambrian through Tertiary igneous, sedimentary, and metamorphic highlands. These basins are filled with Holocene age alluvial sediments that are primarily derived from the weathering of these adjacent highlands, and consist primarily of fine-grained, well-sorted sediments, but also include coarse to gravelly channel, terrace, and alluvial fan deposits at depth (Rascona, 2005).

Based on surveyed elevations of the monitoring wells at the Site, the topography is relatively flat with a slight regional gradient to the south-southwest at approximately 30 to 35 feet (ft) per mile. Monitoring well elevations in the central portion of the Site range from 1,108 ft above mean sea level (amsl) in the southern portion of the Site to 1,118 ft amsl in the northern portion.

2.2 Climate

The Site is located in the northern Sonoran Desert, where the climate is characterized as semiarid. The region experiences hot summers and mild winters. Daytime high temperatures in July, typically the hottest month, are generally between 100°F and 110°F, with overnight lows usually between 75°F and 85°F. January, usually the coolest month, typically experiences daytime highs between 60°F and 70°F and nighttime lows from 35°F to 45°F.

Annual precipitation is low, averaging from seven to eight inches for the greater Phoenix area. There are two distinct but erratic precipitation periods during the year: the monsoon season and the winter rains. The monsoon season occurs primarily in July and August, and in the winter months there are less intense but more widespread and longer-lasting rainfall events (Schmidli, 1996).

Prolonged droughts are common and shorter periods of drought even more so. Spring runoff from snow melt in the Salt, Gila, and Verde River watersheds provides most of the surface water stored by the reservoirs that serve portions of the metropolitan area’s population. During years of winter drought, reduced surface water availability can result in elevated groundwater pumping (Schmidli, 1996).

2.3 Geology

2.3.1 Regional Geology

The Site is located in the West Salt River Valley of the Phoenix Basin, which is a broad, relatively level alluvial valley filled with layers of unconsolidated sand, gravel, silt, and clay, commonly referred to as basin-fill, that have been derived from the erosion of surrounding bedrock uplands.

Basement rock in the Phoenix area consists of Proterozoic metavolcanic and metasedimentary rocks, and Proterozoic foliated to gneissic plutonic rock. Greenstone and metarhyolite dominate the metavolcanic rocks, and outcrop in the Phoenix Mountains and Papago Park. Near the Phoenix Mountains, metasedimentary rocks that include slate, schist, phyllite, and quartzite are also exposed. Several distinct granitic plutons intrude the metamorphic rocks, including the Camelback Granite and Tovrea Granite, which are exposed at Camelback Mountain and near Papago Park (Reynolds and Bartlett, 2002).

Paleozoic and Mesozoic sedimentary rocks were deposited atop the Proterozoic crystalline rock, but completely eroded away due to uplifting during the Mesozoic to early Tertiary. As a result, Middle Tertiary sedimentary and then volcanic rocks were unconformably deposited atop the Proterozoic rock. Middle Tertiary sedimentary rocks occur at Camelback Mountain and Papago Park, while the volcanic rocks occur in the northwestern portions of the Phoenix Mountains. In the eastern portion of the Phoenix basin area, these Middle Tertiary rocks consist mainly of three distinct units: the Camels Head Formation, the Tempe Formation, and Tertiary volcanic rocks (Reynolds and Bartlett, 2002).

The Camels Head Formation is comprised primarily of coarse sedimentary breccia and conglomerate, with interbedded sandstone conglomerates. The overlying Tempe formation consists mainly of fine-grained siltstone and sandstone. This formation is overlain by mafic to intermediate volcanic rocks. Concomitant with deposition of Middle Tertiary rocks, crustal extension divided the regional landscape into a collection of tilted fault blocks bordered by northwest-trending normal faults that dip 25 to 50 degrees to the northeast. Sedimentary basins formed between the fault blocks, and Middle Tertiary rocks were deposited in these basins as faulting continued (Reynolds and Bartlett, 2002).

Circa fifteen to five million years ago, the uplifted fault blocks and units in-between were eroded into a low-relief pediment sloping from northeast to southwest. Overlying this pediment surface are Quaternary deposits of alluvium from the surrounding mountains (i.e., basin-fill). The total depth of alluvial deposits in the Phoenix basin varies from less than 500 feet near the basin margins to in excess of 10,000 feet in the center of the Basin (Brown and Pool, 1989).

2.3.2 Site Geology

The total depth to bedrock in the vicinity of the Site is unknown, but is estimated to be at least 1,500 ft below ground surface (bgs) based on information provided from Brown and Pool (1989). Sediments observed at the Site during field activities conducted for the ERA and RI are comprised of the previously described basin-fill deposits and quaternary alluvial floodplain deposits from tributary channels of the Salt River.

2.4 Hydrogeologic Setting

2.4.1 Site Hydrostratigraphy

In 1993, the Arizona Department of Water Resources (ADWR) released the results of its modeling study of the Salt River Valley (Corkhill, et al. 1993). For modeling purposes, the ADWR defined three hydrogeologic units in the basin-fill by differences in grain size that occur throughout most of the Phoenix Basin and are generally correlative with the hydrostratigraphic units defined by the U. S. Bureau of Reclamation in 1976. These include from the deepest to shallowest: the Lower Alluvial Unit (LAU), the Middle Alluvial Unit (MAU), and the Upper Alluvial Unit (UAU), which is further subdivided into sub units. For this report, the ADWR's hydrostratigraphic nomenclature has been used.

The S-series wells at the Site were completed in the upper part of the UAU (referred to as the ‘shallow aquifer’), the M-series wells were completed in the deepest part of the UAU, and an L-series well was completed in the MAU (Figure 3). No wells in the monitoring well network were completed in the LAU. Note that the monitoring wells with no denomination were completed in the upper part of the UAU.

2.4.1.1 Lower Alluvial Unit

The LAU consists mainly of conglomerate and gravel near the margins of the Salt River Valley. It grades into finer grained mudstone, gypsiferous and anhydritic mudstone, and anhydrite toward the center of the basin. In parts of the Western Salt River Valley it also contains some interbedded lava flows. The LAU overlies crystalline and volcanic bedrock.

Due to the absence of deep wells, the thickness, lithologic and hydrogeologic characteristics of the LAU in the Site area are not well-known. According to regional maps compiled by the U.S.

Geological Survey (Brown and Pool, 1989) and the ADWR (Corkhill, et. al., 1993), the estimated depth to the top of the LAU at the Site is at least 1,000 ft bgs.

The closest site-specific data for the LAU are from a 950-foot deep production well drilled for Crystal Bottled Water in 1974. This well is located approximately one mile southeast of the Site. According to ADWR records, the well is screened between 905 and 930 ft bgs. A sand and gravel unit that occurs between approximately 912 and 935 ft bgs is likely responsible for the well's groundwater yield, and may represent the topmost layer of the LAU. During an aquifer test conducted immediately after the completion of drilling, the well produced water at 25 gallons per minute (gpm) with 380 feet of drawdown (Geotrans, Inc., 2004).

2.4.1.2 Middle Alluvial Unit

The MAU is composed primarily of silt, clay, mudstone, and gypsiferous mudstone, interbedded with silty sand and gravel. As is the case with the UAU and LAU, coarser-grained sediments predominate near the Basin margins, where the MAU is indistinguishable from the overlying or underlying units.

There is some question as to the depth of the boundary between the MAU and UAU. According to ADWR, the MAU is about 650 ft thick at the WCP Site, with the UAU/MAU boundary occurring at a depth of approximately 300-350 ft bgs. The UAU/MAU boundary is commonly defined by a zone at the base of the UAU comprised of coarse grained sand and gravel that is recognizable on borehole geophysical logs and boring logs from deeper monitoring wells located at the Site. This zone has been commonly referred to as the Lower Sand and Gravel Subunit (LSGS) of the UAU and is present across the entire WCP Site. According to Geotrans, Inc. (2004), the LSGS occurs at approximately 245 to 285 ft bgs near the north boundary of the WOC Site, and 320 to 360 ft bgs in the south and western sections of the WOC Site. Below the LSGS, other lithologic and geophysical logs from the WOC Site indicate that the MAU is predominantly fine-grained and that it extends to the maximum drilled depth of 822 ft bgs (Geotrans, Inc., 2004). Thin interbedded coarse-grained zones are present in the MAU that yield small water volumes. In one instance in the WOC Site, a sand and gravel unit interbedded with clay or silty clay was encountered at a depth of 756 to 792 ft bgs. An aquifer test was conducted that produced a sustained pumping rate of seven gpm with 25 ft of drawdown (Geotrans, Inc., 2004).

2.4.1.3 Upper Alluvial Unit

The UAU is the uppermost basin-fill unit in the West Salt River Valley and, where saturated, is the most prolific water producer. It is composed mainly of silt, sand, and gravel, but relatively thin clay layers are locally present throughout the unit. In the West Salt River Valley, the unit is predominantly sand and gravel with thick coarse gravel and cobble zones near the current channels of the Salt River and in areas to the north and south of the present-day channel, where the ancestral Salt River was located. The sediments of the UAU in the WCP Site generally become coarser southward toward the Salt River channel. According to the ADWR, the UAU is typically 300 to 400 ft thick in the West Salt River Valley (Corkhill, et. al., 1993).

The LSGS is a lowest sub unit of the UAU and has a high transmissivity and is capable of yielding large quantities of water to wells. The LSGS is the main source of water for SRP Wells 9.5E-7.7N and 10.5E-7.5N (Figure 3). These production wells are screened over long intervals, but lithologic and geophysical data indicate that the LSGS is the main water-bearing zone (SRP, 2015b). The LSGS may be locally confined or partially confined.

In addition to the LSGS at the base of the UAU, there are three other defined subunits of the UAU, from deepest to shallowest: the Middle Fine-Grained Subunit (MFGS), the Upper Coarse-Grained Subunit (UCGS) which is also referred to as the Shallow Groundwater System (SGWS) at the WOC Site, and the Upper Fine-Grained Subunit (UFGS) (Corkhill, et. al., 1993). The MFGS is found at approximately 100-240 ft bgs, and is predominantly silt, clay and fine sand. The majority of existing monitoring wells in the Site network are screened in the MFGS, as this is the current water table aquifer (shallow aquifer). The UCGS occurs in the interval from about 50 to 100 ft bgs, and is predominantly silty-clayey sand, well graded sand, and some gravelly sand. The UCGS formerly was the water table aquifer; however, the groundwater elevations have dropped over time due to the lining of the nearby Grand Canal and due to regional drops in groundwater elevations. The UFGS occurs in the interval from the ground surface to a depth of about 50 ft bgs. It is predominantly silt, clay and fine sand, and has been unsaturated across the Site. Copies of the available boring logs for the Site monitoring wells are included in Appendix A.

Numerous monitoring wells and soil borings have been installed at the Site as part of ERA and RI activities, as well as for ADEQ Leaking Underground Storage Tank (LUST) investigations and other purposes. Most of the wells were completed in the upper portion of the UAU, with total depths less than 200 ft bgs. However, a limited number of Site monitoring wells have penetrated nearly the entire thickness of the UAU into the LSGS (specifically wells WCP-13M, WCP-63M, WCP-208M, and WCP-230M), in order to vertically delineate the contaminant plume and evaluate the deeper LSGS aquifer. Copies of the available well construction diagrams are included in Appendix A.

Field lithologic descriptions and analyses were performed on soil samples collected during ERA and RI activities. Based upon a review of the lithologic descriptions given on the boring logs for selected monitoring well boring locations, five generalized geologic cross-sections were generated for the Site (A-A’, B-B’, C-C’, D-D’ and E-E’). Of the five transects, three were oriented north-south and two were oriented east-west. Figure 4 depicts the location of the transects across the Site, and Figures 5 through 9 depict the five cross sections. Transects B-B’ and E-E’ also include monitoring well borings completed in the LSGS, and transect D-D’ includes monitoring well WCP-207, which is part of the WOC Site.

As depicted in the cross-sections, there is a general correlation with the subunits of the UAU; however, since the cross-sections cover a large distance, some variability is expected. Of note is the relative continuity of silt, clay and fine sand on top of the LSGS across the Site.

2.4.2 Aquifer Characteristics

The UAU is the most productive of the three basin-fill units within the WCP Site, predominantly within coarser lithologic sections and within the LSGS. As noted above, groundwater within the shallow portion of the UAU is under unconfined (water table) conditions. The head difference between the MFGS wells and deeper LSGS portion of the UAU unit suggest the silt and clay above the LSGS is acting as a local aquitard. Based on limited SGWS aquifer slug tests performed by HGC at the Site in 2015, hydraulic conductivities averaged within each plume area range from 0.26 to 3.2 ft per day (Section 5.4.2). There is no apparent pattern in hydraulic conductivity distribution evident from the limited number of slug tests. Based on earlier aquifer pump and recovery tests performed at the Site (Locus, 2008b), aquifer transmissivity values ranged from 52 to 562 ft^2 per day and hydraulic conductivities ranged from 1.6 to 17 ft per day. Large scale hydraulic conductivities in the coarsest sections of the UAU are estimated to range from 150 ft per day up to 1,500 ft per day, with the LSGS likely at the mid- to high-end of this range (Brown and Pool, 1989).

Most of the water production within the MAU comes from thin sand and gravel zones or lenses interbedded within the finer-grained deposits, with hydraulic conductivities ranging from 4 to 60 ft per day estimated by Brown and Pool, although hydraulic conductivities may be up to two orders of magnitude less in zones consisting primarily of silt and clay. Groundwater in the MAU is under confined to semi-confined conditions.

Because of the consolidated nature of the LAU deposits, primary porosity and permeability are reduced. Groundwater production from the LAU is likely derived from secondary porosity/permeability via joints and fractures. Groundwater in the LAU is under confined to semi-confined conditions (Brown and Pool, 1989).

2.4.3 Groundwater Flow Direction

Shallow groundwater at the Site historically flowed north-northwest under non-pumping conditions. The hydraulic gradient in the upper portion of the aquifer was influenced by recharge and groundwater mounding from the Grand Canal prior to lining. The canal was lined in 1998, and at approximately the same time the SRP irrigation wells were no longer pumped regularly. These factors caused the groundwater flow direction to vary as groundwater elevations dropped in a short period of time, leading to a general change in groundwater flow direction to the south with a hydraulic gradient of 0.008 ft/ft (ADEQ, 2014). In 1996, prior to the canal lining, potentiometric groundwater elevations at the Site were approximately 1,029 ft amsl (81 ft bgs). By the year 2000, typical Site potentiometric groundwater elevations were 993 ft amsl (117 ft bgs), indicating greater than a 36-foot drop in groundwater elevations (See historical maps and groundwater elevation table, Appendix B).

Groundwater flow directions and potentiometric surface elevations are different in the shallow portion of the UAU aquifer compared to the deeper LSGS. Historic water level data indicate there were no apparent changes in the horizontal hydraulic gradient in the LSGS associated with the canal lining and the flow direction has been consistently to the south-southwest. Large vertical hydraulic gradients exist between different hydrostratigraphic units in the vicinity of the Site (Geotrans, Inc., 2004) and downward vertical gradients from the water table aquifer in the shallow portion of the UAU to the LSGS subunit are evident.

2.4.4 Hydraulic Communication between Shallow Aquifer and LSGS

The water table aquifer in the shallow portion of the UAU and the LSGS subunit behave very differently in response to most aquifer stresses (e.g., canal recharge to the shallow aquifer, or regional pumping in the LSGS) with hydraulic stresses on one subunit having minimal effect on the other. In particular, a set of data collected during the March 1997 through December 1997 time period reveals a direct correlation between large water level changes in the monitoring wells completed in the LSGS that were likely due to regional pumping from the SRP wells, with much smaller and slightly lagging (in time) responses in the monitoring wells completed in the shallow aquifer. While 30 to 35 ft of drawdown was observed in LSGS wells during heavy pumping, the observed drawdown in the shallow aquifer monitoring wells was generally two feet or less. This supports the interpretation of minimal hydraulic communication between the shallow aquifer and the LSGS (Geotrans, Inc., 2004).

3. PRELIMINARY ASSESSMENTS AND INITIAL ERA EVALUATIONS

Initial field investigations for the WCP Site began in 1984. The WCP Site was placed onto the WQARF priority site list in 1987, which became the WQARF Registry in 1997. The Site was placed on the WQARF registry in 1998, and the ADEQ began RI activities specific to the Site in 2001. Subsequently, ADEQ began ERA evaluations of those properties identified to have documented releases to the environment. Summaries of investigations conducted during the PA/SI phase and prior to WQARF Registry listing are provided in this section. Activities conducted after WQARF Registry listing and in support of the RI and ERA phases are provided in Sections 4 and 5.

3.1 Preliminary Assessments and Site Inspections

PA/SIs were conducted at several properties within the Site prior to commencement of the RI and ERA activities. Under the guidance of ADEQ, an evaluation for the potential of a facility to contribute to the previously identified CVOC-impacted groundwater in the area was conducted. Soil and soil gas samples were collected and analyzed, and monitoring wells were installed, in an effort to characterize the magnitude and extent of the CVOC-impacted groundwater. Chromium was not initially the focus of investigation but was included shortly thereafter. Facility locations are depicted on Figure 2. Additional details are presented in Locus' *Interim* report (2005).

3.1.1 Former Osborn Products Company

The former Osborn Products facility location is shown on Figure 2 and the facility layout is presented in Figure 10. Facility operations generated several waste streams, including TCE and TCA, cutting oils, coolants, chromic acid plating wastewater, and metal shavings. Waste management practices reportedly consisted of disposing of cutting oil, spent solvents, and coolant into a sump/grease trap connected to a drywell located near the north end of the facility in the employee parking area. Osborn Products removed the concrete sump and drywell in July 1985 and collected soil samples for analysis. Approximately 150 gallons of liquid and sludge were removed from the structures and approximately 168 cubic yards of soil were excavated from around the structures. Removed liquids, sludge and soils were hauled to the Kettleman Hills facility in California for disposal. TCE was detected in soil samples collected from the bottom of the excavation at concentrations ranging from 2.2 to 22 milligrams per kilogram (mg/kg) (ADEQ, 1990). Four soil borings (TH-1 through TH-4) were advanced to depths ranging from 46 to 61 ft bgs in October 1985 (Figure 10). According to All Western Environmental Services, Inc. (1985), chlorobenzene, methyl isobutylketone, toluene, and xylenes were detected in two soil samples collected at 39 and 46 ft bgs. No other volatile organic compounds (VOCs) or metals were reported in any of the soil samples.

ADEQ and Earth Tech conducted a Site Inspection on May 7, 1990. The inspection included the collection of soil and soil gas samples from four soil borings (OPI-1, OPI-3, OPI-4, and OPI-5). Soil gas samples were collected from depths of approximately 20 and 35 ft bgs. Soil gas sampling results reported PCE, TCE, 1,1-DCE, and TCA in all samples analyzed. VOCs were not detected in any soil samples. Chromium, aluminum, arsenic, cobalt, and nickel were detected above background concentration levels established from background samples collected during the investigation (ADEQ, 1991).

In 1992, monitoring wells WCP-1 and WCP-7 were installed at the property. Monitoring well WCP-1 was installed near the southern edge of the property (upgradient of the former Osborn Products property and downgradient of the former Southwest Metal property) and WCP-7 was installed near the north-central portion of the property (downgradient) (Figure 10). Analytical results of groundwater samples collected from WCP-1 and WCP-7 in 1992, 1994, and 1996 indicated highest PCE concentrations (12 to 14 micrograms per liter[µg/L]) in samples collected from WCP-1, highest TCE concentrations (51 to 320 µg/L) in samples collected from WCP-7, and highest 1,1-DCE concentrations (13 to 78 µg/L) in samples collected from WCP-7 (Weston, 2003) (Earth Tech, 1996a). The water levels in both wells later became too shallow to sample due to the declining water table and were designated to be abandoned; however, the wells were bailed and cleaned instead because groundwater depths were still measurable (Roy F Weston, Inc., 2000). The monitoring wells were later abandoned with the continued decline in water levels in the area.

3.1.2 Former Magic Metals Plating Company

The former Magic Metals facility location is shown on Figure 2 and the facility layout is presented in Figure 11. The facility generated waste electroplating baths and rinses containing cyanide, waste caustics and unspecified waste solvents from stripping tanks, and waste acids (sulfuric and chromic). Wastes in the tanks were treated to adjust pH and subsequently discharged to the COP wastewater system. Metal shavings may have been washed into the tanks along with other liquids. No wells or dry wells were located on the property. During the time that Magic Metals occupied the property, two releases to the environment were identified due to overflows from underground waste pretreatment tanks located near the west boundary of the property, and a chromium release had occurred (Figure 11). Magic Metals subsequently abandoned the property in 1987, leaving the facility in disarray with tanks full of liquid and stained soil around the tanks. Later, the liquid in the tanks and other chemicals at the property were removed and properly disposed of, and the tanks were reportedly excavated and removed in 1989 (Earth Tech, 1996b).

During several previous investigations, chromium, cadmium, and total cyanide concentrations were reported in shallow soil samples collected in the vicinity of the former waste pretreatment tanks (Scott, Allard, & Bohannan, 1989, 1994).

In 1996, monitoring well WCP-12 was installed near the northwest corner of the property (Figure 11). Total chromium ranged from 14 to 2,700 mg/kg in soil samples collected during the drilling of the well, and groundwater samples collected from well WCP-12 in January and February 1996 indicated maximum PCE and TCE concentrations of 2.0 and 2.2 µg/L (Earth Tech, 1996b). Well WCP-12 was subsequently abandoned due to the declining groundwater table.

3.1.3 Former Precise Metal Plating Company/Paraflex Machine and Tool Company

The former Precise/Paraflex facility location is shown on Figure 2 and the facility layout is presented as Figure 12. ADEQ and Earth Tech completed a Site Inspection in July 1989. Six soil and soil gas samples were collected from depths of approximately 15 ft bgs (Figure 12). CVOCs were not detected in any of the soil samples, but PCE, TCE, and 1,1-DCE were detected in soil gas samples (Locus, 2005a).

Monitoring well WCP-5 was installed north-northwest (downgradient) of the Precise/Paraflex facility in 1992 (Figure 4). In 1993, monitoring well WCP-9 was installed near the southern edge (upgradient) of the property (Figure 12). Analytical results of groundwater samples collected from WCP-5 and WCP-9 in 1993, 1994, and 1996 indicated highest PCE, TCE, and 1,1-DCE concentrations in the downgradient well, WCP-5 (Earth Tech, 1996a, Weston 2003). Wells WCP-5 and WCP-9 were subsequently abandoned after they became dry due to the declining groundwater table (ADWR, 2015).

In November 1997, ACT Environmental Technologies, Inc. (ACT), on behalf of Precise/Paraflex, collected soil samples and Hydropunch® grab groundwater samples from four soil borings (B-1, B-2, B-3 and B-4) as indicated on Figure 12. TCE and 1,1-DCE were reported in near-surface soil samples at concentrations of 0.1 and 0.29 mg/kg, respectively (ACT, 1998). PCE, TCE, 1,1-DCE, and 1,1-dichloroethane (1,1-DCA) were detected in each of the Hydropunch® grab groundwater samples at maximum concentrations of 7.4, 61, 9.5, and 1.4 µg/L, respectively (ACT, 1998).

3.1.4 Former Southwest Metal Plating Industries

The former Southwest Metal facility location is shown on Figure 2 and the facility layout is presented as Figure 13. Although the company did not use solvents in its cleaning processes, the sand casts were generally quenched, cleaned and treated chemically. Wastewaters from quenching operations may have been contaminated with materials from the metal surfaces and may have included chromium.

ADEQ and ICF Kaiser, Inc. conducted a Site Investigation in March and April 1993, which included the collection of shallow soil and soil gas samples from 12 locations (SMI-01 through SMI-12), as shown on Figure 13 (the location of SMI-12 was not identified in available documents). VOCs were not detected in any soil samples, but lead was detected in a soil sample collected near a septic tank at a concentration greater than typical background concentrations in soil. PCE, TCE, 1,1-DCE, and TCA were reported in multiple soil gas samples at concentrations exceeding the laboratory reporting limit, with the highest concentrations collected near the former septic tank and former drywell (ADEQ, 1993).

3.1.5 Former Giltspur Exhibits

The former Giltspur Exhibits facility location is shown on Figure 2 and the facility layout is presented as Figure 14. ADEQ conducted Preliminary Assessments of the property in 1989 (ADEQ, 1989b) and 1991 (ADEQ, 1992a). Giltspur Exhibits designed and constructed trade show exhibits at the property from 1980 through at least 1998. Prior to 1980, Walker Displays operated at the 3846 address. Prefab Metal Manufacturing, General Metal Manufacturing and Supply, Howard Manufacturing and Jimmy's Marine Instruments operated at the 3842 address (ADEQ, 1992a). General Electric operated at the 3840 Clarendon Avenue address from 1968 to 1987. According to ADEQ, there were no records available documenting waste generation and disposal practices of those businesses at the 3842 address. General Electric reportedly used small quantities of methyl ethyl ketone (MEK) to clean metal parts, and solvent dampened rags were disposed of offsite. General Electric reportedly purchased TCA in 1972 (Honeywell, 2017). ADEQ also identified three drywells on the property in 1991 (ADEQ, 1992a).

ACT drilled two borings on the Giltspur Exhibits property in November 1997 as part of their investigation for the Precise/Paraflex facility, and collected Hydropunch® grab groundwater samples (Figure 14). No soil or soil gas samples were collected. PCE and TCE were reported at concentrations of 5.9 and 36 µg/L, respectively, in groundwater samples collected from boring B-5 near the northwest corner of the property. Boring B-6, located in the southeast employee parking area, did not contain VOCs above laboratory reporting limits (ACT, 1998).

3.1.6 Former Triad Trucking Company

The former Triad Trucking Company facility location is shown on Figure 2 and the facility layout is presented as Figure 15. GEC supervised the excavation of one 8,000-gallon capacity gasoline underground storage tank (UST) and one adjacent 2,500-gallon capacity diesel UST in 1989 at the facility. Soil samples collected from beneath the USTs contained total petroleum hydrocarbons (TPH), benzene and xylenes at concentrations exceeding the State of Arizona suggested cleanup levels (Basin & Range, 1990). A soil sample collected from approximately 22.4 ft bgs reportedly contained a TPH concentration of 14,000 mg/kg.

In January 1990, Basin & Range drilled two exploratory borings, B&R-1 and B&R-2, to an approximate depth of 120 ft bgs and 101 ft bgs, respectively, in the vicinity of the former USTs (Figure 15). Soil and groundwater samples were collected. Analytical results indicated that petroleum hydrocarbons released from the former UST system migrated vertically and impacted groundwater beneath the facility (Basin & Range, 1990).

In January and February 1997, Six exploratory borings (SB-1 through SB-6) were drilled and sampled and seven groundwater monitoring wells were installed in the vicinity of the former dispenser island and former USTs (MW-1 through MW-6 and MW-8). Based on soil and groundwater sample analytical results, it was determined that a release that consisted primarily of gasoline constituents had occurred at the facility and originated near the north end of the former gasoline UST (Burgess & Niple, 2006a). The ADEQ UST Site Investigation and Remediation Unit conducted site characterization activities and closed the LUST file in 2013.

3.1.7 Redburn Tire Company

The Redburn Tire Company location is shown on Figure 2 and the facility layout is presented as Figure 16. ADEQ conducted a Preliminary Assessment in 1992 (ADEQ, 1992b). The facility formerly operated three gasoline/diesel fuel USTs that were closed in place in 1986 and had three septic tanks that were in use prior to 1964. According to COP Fire Department records, a solvent tank and a waste oil tank were also in use at 3801 W. Clarendon in 1980. Products containing TCE, PCE, TCA, MEK, lead chromates, ethylene glycol, and methanol may have been used at the facility as part of the tire re-treading activities. ADEQ concluded that there were no observed releases of contaminants to groundwater.

3.1.8 Saban’s Rent-a Car

The Saban’s Rent-a Car (Saban’s) facility location is shown on Figure 2. The ADEQ contracted with Earth Tech to conduct a Preliminary Assessment in February 1995 that included reconnaissance of the facility and a review of available hazardous waste storage and disposal documentation. Upon completing the Preliminary Assessment, Earth Tech concluded that chlorinated solvents had not been handled, used, treated, or stored at the Saban's facility (Earth Tech, 1996c). No further investigations have been conducted.

3.1.9 Former DJM Construction Company

The former DJM Construction Company facility (DJM) location is shown on Figure 2 and the facility layout is presented as Figure 17. JBL supervised the excavation and removal of the 4,000 and 1,000 gallon USTs on December 11, 1992. According to JBL, the 4,000-gallon gasoline UST appeared in good condition; however, a single corrosion hole centrally located along the base of the 1,000-gallon form oil UST had been observed. Following the removal of the USTs, JBL collected soil samples for laboratory analysis from approximately one foot beneath the former UST locations. Analytical results indicated TPH releases beneath both UST locations, as well as PCE at a concentration of 0.6 mg/kg beneath the form oil (used as a mold release agent) UST location (Allen, Stevenson, & Associates, 2000).

Subsequent investigations included the installation of thirteen groundwater monitoring wells on the DJM property (Burgess & Niple, 2006b). Figure 17 depicts the locations of monitoring wells MW-1 through MW-13. MW-1 through MW-8 were installed to depths ranging from 130 to 135 ft bgs. Groundwater sample analytical data collected in March and August 2000 indicated TCE in two groundwater samples at concentrations below the AWQS (Allen, Stevenson, & Associates, 2000). Monitoring wells MW-9 through MW-13 were installed at the facility at a later date (to 150 ft bgs), as the original monitoring wells became dry due to the rapidly declining water levels after lining of the adjacent canal.

Monitoring well MW-6 was formerly included in the Site RI groundwater sampling network (identified as well DJM-6) prior to the well becoming dry. As of 2013, monitoring well MW-13 has been included in the Site RI groundwater sampling network (referred to as well DJM-13). This well was not sampled in February 2015 due to unexpected access issues associated with the relocation of fencing at the property. However, access was granted for the November 2015 sampling event. Between 2001 and 2004, there were detections of benzene, chloroform, ethylbenzene, xylenes, MTBE and 1,2-DCA in well DJM-6. Between 2013 and 2015, there were detections of 1,1-DCE, dichlorobromomethane, chloroform, trichlorofluoromethane and TCE in well DJM-13.

3.1.10 Diehl Equipment Company

The Diehl Equipment Company (Diehl) facility location is shown on Figure 2. Agra Earth & Environmental, Inc. (AGRA) supervised the removal of the two diesel fuel USTs on August 11, 1994 (AGRA, 1994). AGRA collected soil samples from beneath each UST upon completing the removal. Analytical results did not indicate the presence of TPH. The soil samples were not analyzed for chlorinated hydrocarbons. Although additional investigations were conducted, no information was available in the ADEQ files and no LUST case file is currently associated with the facility.

As part of additional investigation, four monitoring wells were installed at the Diehl facility, identified as MW-1 through MW-4, and were installed to depths of approximately 130 ft bgs. Monitoring well MW-1 was formerly included in the RI groundwater sampling network and was identified as well DEC-1 (Figure 2). Due to the declining groundwater table, the monitoring wells became dry in 2004 (Locus, 2005a). Between 2002 and 2003, well DEC-1 was sampled on three occasions. In 2003, 1,1-DCE, TCE and PCE, chloroform and MTBE were detected in this well.

3.1.11 Additional Well Installations and Sampling

Monitoring wells WCP-2, -6, and -8 were not installed in association with a specific facility but rather to investigate water quality in the central portion of the WCP Site (Figure 2). TCE and 1,1-DCE were detected in groundwater samples collected from well WCP-2 from 1992 to 1996 at concentrations ranging from 30 to 47 µg/L and from 18 to 47 µg/L, respectively. PCE was also detected in the groundwater samples collected from well WCP-2 but at concentrations less than the AWQS of 5 µg/L. Groundwater samples collected from well WCP-6 during the same time frame contained TCE, PCE, and 1,1-DCE at concentrations less than the AWQS. VOCs were not detected in groundwater samples collected from monitoring well WCP-8. Monitoring wells WCP-13 and WCP-14 were installed in 1996 along the Grand Canal to delineate the separation between the Site and the WOC Site. VOCs were not detected in groundwater samples collected from these two wells between 1996 and 1998. The wells were abandoned in 2000 (ADEQ, 2015, Earth Tech, 1992a, 1992b, 1994 & 1996a).

3.2 Initial ERA Evaluations

The objective of the ERA evaluations was to collect data needed to determine if the source(s) of CVOC and metals contamination should be addressed based on impact to human health and/or the environment, or to save WQARF funds by limiting the spread of contamination. The initial

ERA evaluations were conducted by Locus through 2004 and are discussed in this section. Additional details are presented in reports by Locus in 2004 and 2005.

3.2.1 Initial ERA Evaluation Activities

The facilities investigated during this time were the former Osborn Products facility, former Magic Metals facility, former Precise/Paraflex facility, former Southwest Metal facility, former Pyramid Industries facility, former Giltspur Exhibits facility, Redburn Tire facility and former Triad Trucking facility. Additional investigation was conducted at former DJK, Inc. and HCZ Custom Homes in 2015. Soil borings were drilled at each facility to depths of no more than 130 ft bgs near potential and suspected release points that appeared to exhibit the highest probability of containing CVOCs and chromium. The ERA soil borings are depicted on Figures 10 through 19. Soil, soil gas, and grab groundwater samples were collected from each boring for analysis. Summaries of the initial ERA evaluation activities are given below.

3.2.1.1 Soil Sample Analytical Results

Soil sample analytical results from mobile laboratory field screening for *cis*-1,2-DCE, *trans*-1,2-DCE, TCE and PCE are presented in Table 1. The field screening was conducted by Transwest Geochem using EPA Method 8021B (modified). PCE and TCE were detected in soil samples collected from the soil borings at the former Osborn Products facility. PCE was detected in four soil samples with concentrations ranging from 1.1 to 26 mg/kg, and TCE was reported in one soil sample at 3.5 mg/kg. All four PCE concentrations exceeded the most stringent Residential SRL for sensitive populations (10^{-6} carcinogen risk) of 0.51 mg/kg as well as the minimum groundwater protection level (GPL) of 0.80 mg/kg. One concentration exceeded the Non-residential SRL of 13 mg/kg (collected at 40 ft bgs). The TCE concentration also exceeded the 10^{-6} Residential SRL of 3.0 mg/kg as well as the minimum GPL of 0.76 mg/kg, but did not exceed the Non-residential SRL of 65 mg/kg.

Samples were selected for confirmation analysis and analyzed at Transwest Geochem's fixed-base laboratory using EPA Method 8260B (Table 2). Of those results, PCE and TCE concentrations were reported in the samples collected at 40 ft bgs from borings OP-SB01 and OP-SB02 from the former Osborn Products facility. PCE concentrations were 0.27 and 0.33 mg/kg, respectively, and TCE concentrations were 0.15 and 0.33 mg/kg, respectively. None of these concentrations exceeded their respective Residential or Non-residential SRLs or minimum GPLs.

During the 2015 soil sampling event involving borings WCP-DJK-1 and HCZ-SB1, PCE was detected in all samples from boring HCZ-SB1 (Table 2). Concentrations ranged from 0.0819 mg/kg at 30 ft bgs to 0.700 mg/kg at 110 ft bgs. All are less than the ADEQ SRLs and GPL for PCE. None of the other samples collected from these two borings contained PCE or other CVOC concentrations.

Selected samples were also submitted to the fixed-base laboratory for the analysis of total chromium by EPA Method 6010B and chromium VI (CrVI) by either EPA Method SWM3500-Cr D or EPA Method 7196A, modified (Table 2). Total chromium concentrations were reported in all soil samples for which chromium analyses were conducted, with the highest concentration reported at 140 mg/kg in boring SB01 at the former Osborn Products facility (Table 2). There are not SRLs for total chromium.

CrVI was reported in only five soil samples; one at the former Magic Metals facility (1.1 mg/kg) and four (0.52 to 24 mg/kg) at the former Southwest Metal facility. None of the CrVI concentrations exceeded the ADEQ Residential or Non-residential SRLs of 30 and 65 mg/kg, respectively.

In addition to the COCs, several petroleum hydrocarbon compounds and polycyclic aromatic hydrocarbons (PAHs) were detected in soil samples collected at the former Osborn Products facility from borings SB01 and SB02, both of which are located near the previously excavated drywells at a depth of 40 ft bgs. None of the detected concentrations exceeded their respective Residential or Non-residential SRLs or minimum GPLs.

3.2.1.2 Soil Gas Sample Analytical Results

Soil gas sample analytical results for *cis*-1,2-DCE, *trans*-1,2-DCE, TCE and PCE are presented in Table 3. The CVOCs PCE and TCE were detected at each of the facilities investigated except Redburn Tire. *Cis*-1,2-DCE was detected only in samples collected from Osborn Products, Magic Metals, and Triad Trucking. *Trans*-1,2-DCE was only detected in samples collected from Magic Metals, Pyramid Industries, and Triad Trucking.

TCE was the predominant constituent reported at the former Osborn Products facility, occurring in nearly all soil gas samples collected below 35 ft bgs and in the vicinity of the former drywells. Concentrations ranged from 1.3 mg/m^3 to 74 mg/m^3. PCE was detected in three of 72 soil gas samples at that facility. Detected concentrations were 1.4 mg/m^3, 1.7 mg/m^3, and 3.5 mg/m^3. *Cis*-1,2-DCE concentrations ranged from 1.8 mg/m^3 to 41 mg/m^3.

PCE was reported in 11 of 72 soil gas samples collected at the former Precise/Paraflex facility, whereas TCE was present throughout the vadose soil column at that facility with the highest concentrations detected near the east edge of the Paint Spray, Inc. building. PCE concentrations ranged from 1.7 mg/m^3 to 4.1 mg/m^3. TCE concentrations ranged from 1.1 mg/m^3 to 52 mg/m^3.

At the former Southwest Metal facility, PCE was reported in 39 samples, and TCE was reported in 26 samples. PCE concentrations ranged from 1.1 mg/m^3 to 49 mg/m^3. TCE concentrations ranged from 1.0 mg/m^3 to 66 mg/m^3. The highest concentrations of TCE and PCE were at or below 80 ft bgs and in the vicinity of the southeast corner of the property.

Cis-1,2-DCE, *trans*-1,2-DCE, TCE and PCE were detected in samples collected at the former Magic Metals facility. The highest soil gas CVOC concentrations were reported in the area of the former tanks at the western edge of the property and at depths below 100 ft bgs. *Cis*-1,2-DCE concentrations ranged from 1.1 mg/m^3 to 520 mg/m^3. *Trans*-1,2-DCE concentrations ranged from 1.1 mg/m^3 to 1,000 mg/m^3. TCE concentrations ranged from 1.5 mg/m^3 to 140 mg/m^3. PCE concentrations ranged from 1.1 mg/m^3 to 24 mg/m^3.

At the former Pyramid Industries facility TCE was detected in 39 samples and PCE was detected in 49 samples. TCE concentrations ranged from 1.0 mg/m^3 to 78 mg/m^3. PCE concentrations ranged from 1.3 mg/m^3 to 59 mg/m^3. *Trans*-1,2-DCE was detected in three samples at concentrations of 24 mg/m^3, 11 mg/m^3, and 82 mg/m^3. The highest TCE and PCE concentrations were detected in the vicinity of the northwest corner of the facility.

TCE was detected in 50 samples collected at the former Giltspur Exhibits facility and PCE was detected in 33 samples. TCE concentrations ranged from 1.1 mg/m^3 to 29 mg/m^3. PCE concentrations ranged from 1.1 mg/m^3 to 4.6 mg/m^3. Highest TCE concentrations were detected in samples collected near the former drywells west of the building.

At the former Triad Trucking facility, PCE was detected in 62 samples, TCE in eight samples, *trans*-1,2-DCE in nine samples, and *cis*-1,2-DCE was detected in 4 samples. PCE concentrations ranged from 1.2 mg/m^3 to 73 mg/m^3. TCE ranged in concentration from 1.1 mg/m^3 to 14 mg/m^3. *Trans*-1,2-DCE ranged in concentration from 4.8 mg/m^3 to 55 mg/m^3. *Cis*-1,2-DCE ranged in concentration from 2.1 mg/m^3 to 290 mg/m^3. The highest concentrations of PCE detected were in samples collected in the northeast corner of the facility.

PCE was detected in seven of the eight samples collected at former DJK, Inc. and TCE was detected in two samples. PCE ranged from 0.021 mg/m^3 to 2.68 mg/m^3. TCE was detected at a concentration of 0.0207 mg/m^3 and 0.0163 mg/m^3.

PCE was detected in each of the eight samples collected at HCZ Custom Homes and TCE was detected in one sample. PCE concentrations ranged from 0.989 mg/m^3 to 64.21 mg/m^3. TCE was detected at a concentration of 0.0891 mg/m^3.

These data indicate that releases have occurred at or in the vicinity of these facilities. However, converting the detected concentrations to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance for comparison to SRLs and GPLs indicates that none of the detected concentrations exceed SRLs or GPLs as soil solid contaminant concentrations.

3.2.1.3 Hydropunch® Grab Groundwater Sample Analytical Results

Hydropunch® grab groundwater samples were collected following drilling of the boreholes. CVOCs and chromium detected in soil and/or soil gas samples were also detected in the groundwater samples. Contaminants that were detected in groundwater samples at concentrations greater than their respective AWQS included total chromium, 1,1-DCE, TCE, and PCE (Table 4).

At the former Osborn Products facility, TCE, 1,1-DCE, and total chromium were detected at concentrations greater than AWQS of 5 µg/L for TCE, 7 µg/L for 1,1-DCE, and 0.1 mg/L for total chromium in two of the samples. Detected TCE concentrations were 95 µg/L and 160 µg/L. 1,1-DCE ranged in concentration from 0.88 µg/L to 93 µg/L. Total chromium concentrations ranged from 0.021 mg/L to 0.56 mg/L.

At the former Precise/Paraflex facility, TCE and total chromium exceeded the AWQS of 5 µg/L for TCE and 0.1 mg/L for total chromium. TCE ranged in concentration from 11 µg/L to 38 µg/L. Total chromium ranged in concentration from 0.028 mg/L to 1.7 mg/L.

At the former Southwest Metal facility, PCE, TCE, 1,1-DCE, and total chromium exceeded the AWQS of 5 µg/L for PCE and TCE, 7 µg/L for 1,1-DCE, and 0.1 mg/L for total chromium. PCE ranged in concentration from 2.1 µg/L to 31 µg/L. TCE ranged in concentration from 11 µg/L to 500 µg/L. 1,1-DCE was detected at a concentration of 63 µg/L. Total chromium was detected at a concentration of 0.33 mg/L. CrVI was detected in one sample at a concentration of 0.37. An AWQS had not been established for CrVI.

At the former Magic Metals facility, PCE, TCE, 1,1-DCE, and total chromium exceeded the AWQS of 5 µg/L for PCE and TCE, 7 µg/L for 1,1-DCE, and 0.1 mg/L for total chromium in each of the samples. PCE ranged in concentration from 7.4 µg/L to 13 µg/L. TCE ranged in concentration from 73 µg/L to 190 µg/L. 1,1-DCE ranged in concentration from 24 µg/L to 55 µg/L. Total chromium ranged in concentration from 0.53 mg/L to 1.3 mg/L.

At the former Pyramid Industries facility, PCE, TCE, and 1,1-DCE exceeded the AWQS of 5 µg/L for PCE and TCE and 7 µg/L for 1,1-DCE. PCE ranged in concentration from 2.1 µg/L to 12 µg/L. TCE ranged in concentration from 110 µg/L to 260 µg/L. 1,1-DCE ranged in concentration from 19 µg/L to 71 µg/L.

At the former Giltspur Exhibits facility, PCE and TCE exceeded the AWQS of 5 µg/L for PCE and TCE. PCE concentrations ranged from 1.4 µg/L to 36 µg/L. TCE ranged in concentration from 0.50 µg/L to 54 µg/L.

At the former Triad Trucking Co. the two samples collected both contained PCE and TCE exceeding the AWQS of 5 µg/L for PCE and TCE. PCE concentrations were 6.5 µg/L and 14 µg/L and TCE concentrations were 16 µg/L and 17 µg/L.

4. REMEDIAL INVESTIGATION ACTIVITIES

A second phase of ERA and RI evaluations was conducted in 2005 and 2006 by Locus, and in 2014 and 2015 by HGC to collect additional data; to determine whether ERAs are necessary at other previously investigated facilities; and to investigate other facilities that have the potential to be a contributing source. Locus' investigation activities encompassed the former Pyramid Industries facility, former Giltspur Exhibits facility, former Triad Trucking Company facility, and the Redburn Tire Company (Figure 2). Additional investigative work was conducted by Locus at the former Southwest Metal facility, as well as other facilities at the Site and in the right-of-ways along city streets. HGC's efforts were focused on further evaluation of groundwater conditions in the West Plume and evaluation of areas in the East Plume. Additional detailed results regarding the evaluations conducted by Locus are described in previous reports (Locus, 2006; 2007; 2008a; 2008b).

Passive soil gas samples, active soil gas samples and soil samples were collected during both the ERA evaluations and RI portions of the Site investigation, with the majority of the discrete-interval samples collected during the ERA evaluation activities. The objective of these activities was the same as the initial ERA evaluations: to determine whether the COCs were present at suspected source areas at concentrations that may contribute to known CVOC and chromium contamination in groundwater beneath the Site. Boring locations were selected near potential and suspected release points that, based on the results of previous soil investigations and/or passive soil gas surveys, exhibited the highest probability of containing CVOCs and chromium.

Where borings were drilled by Locus near potential source areas, soil and soil gas samples were collected using a Maxi SimulProbe®, and were analyzed onsite by a mobile laboratory provided by Transwest Geochem. Following review of the mobile laboratory analytical results, selected soil samples were submitted to the Transwest Geochem fixed-base laboratory for further VOC confirmation analysis and analysis of total chromium and CrVI. At those locations where additional monitoring wells were installed for the purpose of establishing the magnitude and extent of the groundwater contaminant plume (i.e., WCP-27, -60, -205, -206, -207, -208S/M, -209 through -219, -225, -226, -228 through -234, and -241), soil samples were field screened using a photoionization detector (PID) prior to selecting soil samples for laboratory analysis.

Selected soil samples were also collected by Locus for the analysis of wet density, dry density, total organic carbon (TOC), moisture content, water-filled porosity, and total porosity.

4.1 Passive Soil Gas Survey Activities

Passive soil gas sampling equipment for each of the surveys discussed below was provided by Beacon Environmental Services, Inc. (Beacon). Beacon provided pre-cleaned metal sleeves and sample modules for field sampling and laboratory analysis of the collected samples. Each sample module consisted of hydrophobic adsorbent cartridges in sealed vials equipped with a length of wire for retrieval. After the samplers were deployed at each location, residence time in the ground was between two weeks and one month. After retrieval, the samplers were submitted to Beacon for VOC analysis using EPA Method 8260C. The Beacon reports are included in Appendix C. Passive soil gas survey results are included in Appendix D.

4.1.1 Central Plume

Passive soil gas surveys were conducted by Locus in the Central Plume as part of the second phase ERA evaluations in 2005 and 2006. At the Redburn Tire Company property and former Pyramid Industries facility (Figures 16 and 18, respectively; Figure 2), detailed information on historical operations and waste management practices was minimal and no previous soil and groundwater sampling data were known to exist. Therefore, the passive soil gas survey grids at these properties were designed to cover the entire outside working areas, as depicted in Appendix D, Figures D.1 and D.3.

The survey grid at the former Giltspur Exhibits facility (Appendix D, Figure D.5) was designed to investigate the areas near former drywells west of the main building and near a drywell in the facility's southeast parking area.

At the former Triad Trucking Company facility, the survey grid covered the entire lot, with the exception of an area near the former fuel USTs (Appendix D, Figure D.7). The former UST area was avoided because several groundwater monitoring and soil vapor extraction (SVE) wells in this area may have acted as conduits for the upward migration of vapors, possibly affecting the soil gas data.

At the former Osborn Products facility, a survey grid was established to confirm results from previous soil and soil gas sampling activities and to investigate whether a release may have occurred at the south end of the property near the former vapor degreaser (Appendix D, Figure D.9).

At the former Southwest Metal property (Figure 13), previous soil, soil gas, and groundwater sample analytical results, as well as the known facility operational history, suggested that a former (abandoned) drywell located south of the facility's main building may have been a past source of groundwater contamination. A passive soil gas survey grid was established at the facility primarily to collect analytical data in the area south of the building that could not be accessed due to low overhead clearance during the previous ERA evaluation of the facility, with additional sample locations selected along the west and north sides of the primary structure (Appendix D, Figure D.11).

4.1.2 West Plume

Locus conducted a passive soil gas survey in the West Plume in February-March 2008. The sample locations were chosen to help determine the spatial relationship between elevated CVOC concentrations reported in monitoring wells WCP-209, WCP-212, and WCP-215, located near the former Precise/Paraflex facility at the northeast corner of 39th and Clarendon Avenues, and monitoring wells WCP-225 and WCP-230, located on 40th Avenue. Sixty-five modules were deployed between February 26 and March 3, 2008, within COP right-of-ways along Indian School Road, Fairmount Avenue, Clarendon Avenue, Whitton Avenue, 39th Avenue, and 40th Avenue (Appendix D, Figure D.13).

4.1.3 East Plume

Sixty-two soil gas modules were deployed by Locus in the East Plume area (east of 35th Avenue) in October 2005 in an effort to identify potential PCE contaminant sources. The modules were deployed within the COP right-of-way along Clarendon, Weldon and Whitton Avenues east of 35th Avenue, and along 34th Avenue between Clarendon and Whitton Avenues (Appendix D, Figure D.16).

Based upon the findings from the 2005 passive soil gas survey, in March 2008 Locus deployed twenty-four additional soil gas modules in the East Plume area (Appendix D, Figure D.18). This survey was conducted in an effort to identify potential contaminant sources north (hydraulically upgradient) of impacted monitoring wells WCP-208S, WCP-213, and WCP-218 (WCP-213 and WCP-218 were installed in 2006 based upon the 2005 passive soil gas survey findings). Nine modules were installed within the right-of-way on the east side of 35th Avenue between Clarendon Avenue and Indian School Road, one module was installed within the right-of-way on the west side of Grand Avenue south of Indian School Road, and an additional fourteen modules were deployed within the right-of-way on the east side of Grand Avenue.

Based on the results of the March 2008 passive soil gas survey, which suggested a contaminant source north of Grand Avenue, twenty-nine soil gas sample modules were installed by Locus in October 2008 along Indian School Road between 35th Avenue and 33rd Avenue. Sample locations are depicted in Appendix D, Figure D.19.

HGC conducted a passive soil gas survey in May 2014 to collect additional data for use in identifying potential contaminant sources at properties located along 33rd Avenue between Indian School Road and Grand Avenue. HGC's survey was comprised of eleven soil gas modules located along the western street boundary in the COP right-of-way. Soil gas sample locations are shown in Appendix D, Figure D.20.

In April 2015, HGC conducted a limited passive soil gas survey to collect supporting data for the elevated soil gas values identified on Clarendon Avenue in the 2005 survey (shown in Appendix D, Figure D.22) and to identify potential contaminant sources of the groundwater impact found in monitoring well WCP-213 and other nearby wells. After access agreements were executed between ADEQ and the property owners at 3421 and 3422 West Clarendon Avenue, HGC deployed fifteen soil gas modules as part of the survey (Appendix D, Figure D.22). Eight modules were deployed on the north side of the road at 3422 West Clarendon Avenue, and seven modules were deployed on the south side of the road at 3421 West Clarendon Avenue.

In September-October 2015, HGC conducted an expanded passive soil gas survey in the same vicinity as the limited survey conducted in April 2015. HGC deployed 47 soil gas modules as part of the survey (Appendix D, Figure D.22), following execution of additional access agreements between ADEQ and the property owners at 3431 and 3432/3434 West Clarendon Avenue, at 3821/3823 North 34th Avenue, at 3839 North 35th Avenue, and at 3441 Grand Avenue. Ten modules were deployed at 3821/3823 North 34th Avenue parallel to the east side of the alley way. Fourteen modules were deployed at 3422 West Clarendon Avenue, eight parallel to the west side of the alley way, four in the asphalt-paved parking area, and two on the north side of Clarendon Avenue. Four modules were deployed at 3432/3434 West Clarendon Avenue on the north side of the road. Three modules were deployed at 3431 West Clarendon Avenue on the south side of the road. Ten modules were placed in the parking lot of the property located at 3839 North 35th Avenue. And six modules were placed at 3441 Grand Avenue north of the railroad tracks.

4.2 Soil and Soil Gas Investigation Activities

In 2006, following a review of the passive soil gas survey results, selected facilities were chosen for additional investigation (Locus, 2007). Soil borings were advanced by Locus at selected locations based upon the results of the passive soil gas survey and other site features that may have acted as a conduit for contaminants to enter the subsurface. At each boring location, discrete soil and soil gas samples were collected for analysis, and groundwater grab samples were also collected from the borings. Some of the borings were converted to monitoring wells at the completion of sample collection.

4.2.1 Redburn Tire Company

Four boring locations were selected at Redburn Tire Company (RB-SB01 through RB-SB04) based upon locations having the highest soil gas CVOC concentrations (Figure 16). Boring RB-SB02 was converted to monitoring well WCP-219.

4.2.2 Former Pyramid Industries

Four soil borings (PY-SB01 through PY-SB04) were drilled at the former Pyramid Industries facility (Figure 18). A boring could not be drilled at soil gas locations PSG33 or PSG34, which had the highest passive soil gas results, due to the location of facility equipment. Instead, boring PY-SB01 was advanced adjacent to a drum storage area near soil gas sample PSG41. Another boring (PY-SB02) was advanced adjacent to an existing drywell near the southwest corner of the property to confirm the relatively low CVOC values identified in that area. Boring PY-SB03, drilled near the northwest corner of the property, was converted to monitoring well WCP-214 due to its location downgradient of the drywell at the former Southwest Metal facility. The fourth boring (PY-SB04) was drilled near the southwest corner of the main building and northeast of the drywell.

4.2.3 Former Giltspur Exhibits

Three borings (GS-SB01, GS-SB02, and GS-SB04) were drilled west of the main building in an east-west alignment (Figure 14), to investigate whether soil gas and groundwater CVOC concentrations increased or decreased toward the adjacent Precise/Paraflex facility. Boring GS-SB04, located closest to the Giltspur Exhibits west property boundary, was converted to monitoring well WCP-215. Two additional borings were drilled in the east parking lot. Boring GS-SB03 was located near passive soil gas sample PSG-05, which reported the highest CVOC values in the east parking lot. This location was also in the vicinity of ACT boring B-6, which was drilled in November 1997 during an investigation conducted for the former Precise/Paraflex facility (ACT, 1998). Boring GS-SB03 was converted to monitoring well WCP-216. One additional boring (GS-SB05) was drilled adjacent to an existing drywell in the east parking lot.

4.2.4 Former Triad Trucking Company

At the former Triad Trucking Company facility, four soil borings (TT-SB01 through TT-SB04) were drilled at locations having the highest passive soil gas results. The boring locations are depicted on Figure 15.

4.2.5 Former Osborn Products Company

Based on a review of the results of the passive soil gas survey completed at the former Osborn Products property, additional data generation via soil borings was determined not to be necessary at that facility.

4.2.6 Former Southwest Metal Industries

After a review of the passive soil gas survey results at the former Southwest Metal facility, Locus drilled three soil borings (SWM-SB05, SWM-SB07 and SWM-SB09) near the locations of soil gas samples PSG16, PSG18, PSG25 (Figure 13). One additional boring (SWM-SB06) was drilled west of sample location PSG16, as near to the southwest corner of the property as possible, and another soil boring (SWM-SB08) was drilled near the former drywells on the south side of the property which was completed as groundwater monitoring well WCP-227.

4.2.7 West Plume Area

The additional passive soil gas survey conducted by Locus in the West Plume was designed to cover as large an area as possible without having to obtain new property access agreements from several property owners. Therefore, the sample modules were deployed in the COP right-of-ways (Appendix D, Figure D.13). Although no specific properties of concern were noted where soil borings were deemed to be necessary, the analytical results from the survey and from other data sources were used to identify areas requiring further groundwater investigation.

4.2.8 East Plume Area

The passive soil gas surveys conducted in the East Plume area (Appendix D, Figures D.16 through D.19) were designed to cover as large an area as possible without having to obtain property access agreements from several property owners. Analytical results from the surveys indicated elevated CVOC concentrations on Clarendon Avenue and a location along Grand Avenue. The elevated values on Clarendon Avenue were used to identify areas requiring further investigation, resulting in the drilling and installation of monitoring wells WCP-213 and WCP-218 on Clarendon Avenue (Figure 3).

4.3 Additional Soil and Soil Gas Investigation Activities

In 2007, Locus collected discrete interval soil and active soil gas samples from soil borings, and HGC collected discrete interval soil and active soil gas samples from additional soil borings completed in 2015. The procedures followed by Locus are described in detail in the report, *Early*

Response Action Evaluations and Technical Report for the North Canal Plume Site – Fiscal Year 2007 Activities (Locus, 2008a). Discrete interval samples were collected from the borings by Locus and HGC using a Maxi SimulProbe® sampler, an *in situ* sampling device that allows for the simultaneous collection of soil samples and either soil gas or grab groundwater samples.

Available laboratory analytical reports, chain-of-custody documentation, and laboratory quality control data for all discrete interval soil, soil gas and grab groundwater sampling activities are included in Appendix E, and laboratory reports for soil sample physical analyses are presented in Appendix F. Note that all laboratory analytical reports were not available. Therefore, information regarding these data was obtained from tables and text descriptions provided in documents contained in ADEQ files.

Copies of the geophysical logs and copies of selected boring logs for exploratory soil borings and monitoring well installations by Locus are included in Appendix A.

4.3.1 SVE Pilot Wells

In January 2007, Locus conducted a SVE pilot test at the former Osborn Products facility, which was documented in a report completed in 2007 (Locus, 2007). Activities included the drilling and installation of one SVE extraction well (SVE-1) and two observation wells (SVO-1/SVO-2). The SVE well locations were selected in the area of the suspected release point at the northeast corner of the employee parking lot where the sump/drywell previously existed (Figure 10). The borings were drilled to an approximate depth of 65 ft bgs, and soil gas samples were collected at 5-foot intervals from 30 to 65 ft bgs and analyzed for VOCs by EPA Method 8260B.

4.3.2 2007 Soil and Active Soil Gas Investigation

Soil and soil gas samples were collected by Locus at 5-foot intervals from 5 ft to 50 ft bgs, and at 10-foot intervals beginning at 60 ft bgs to the completion depth of each borehole. In addition to the sample collection activities, soil samples were collected using a split-spoon sampler at 10-foot intervals (in-between sample collection depths) beginning at 65 ft bgs in the first boring drilled at each facility for lithologic descriptions. Soil samples held for submittal to the fixed-base laboratory were extracted following procedures outlined in EPA Method 5035. The soil gas samples were submitted to the mobile laboratory for VOC analysis by EPA method 8260B. After collection of the soil and soil gas samples, grab groundwater samples were collected using a bailer from a temporary well screen installed in the borehole (Locus,2008b).

Based upon a concern that impacted soil may remain beneath the former Osborn Products facility's single building, in May 2007 Locus drilled two angle borings (AB1 and AB2) to collect soil samples from beneath the building (Locus, 2008a). The borings were drilled using a mini sonic drill rig, and the boreholes extended 80 linear ft at 30 degrees, reaching a total vertical depth of 70 ft bgs and lateral extent of 40 ft beneath the footprint of the building (Figure 10). Soil samples were collected using a continuous core barrel sampler. Soil VOC concentrations were field screened using a PID. The samples collected following the procedures outlined in EPA Method 5035 for VOC analysis, and were submitted to the fixed-base laboratory for analysis (Locus, 2008a).

Soil samples were also collected by Locus at selected intervals from the soil borings for the installation of monitoring wells WCP-27, -60, -205, -207, -210, and -211, for laboratory analysis of VOCs and chromium. Sample selection was based on field screening of soil samples using a PID. Soil gas samples were also collected at 5-foot intervals from WCP-27, WCP-60, WCP-206, and WCP-207 using the Maxi SimulProbe® sampler. Soil gas samples were collected from WCP-208S/208M at depths of 10, 20, 30, 40, and 60 ft bgs using an H2-Vape™ soil gas sampler. All soil gas samples were analyzed onsite in a mobile laboratory.

With the exception of monitoring wells WCP-63M, WCP-208S/208M, and WCP-209, soil samples were also collected by Locus from the monitoring well boreholes at 5-foot intervals within the vadose zone for the primary purpose of lithologic logging. In lieu of soil sampling, geophysical logging was conducted on mud rotary wells WCP-63M and WCP-208S/208M that were completed in the LSGS of the UAU. No soil samples were collected from the borehole of monitoring well WCP-209 due to its proximity to soil boring SB01, previously completed at the former Precise/Paraflex facility.

Soil and soil gas samples collected by Locus were submitted to the Transwest Geochem mobile laboratory for PCE, TCE, *cis*-1,2-DCE, and *trans*-1,2-DCE screening analyses using EPA Method 8021B (modified). Based on the mobile laboratory analytical results, selected soil samples were submitted to the Transwest Geochem fixed-base laboratory for VOC analysis by EPA Method 8260B, for total chromium by EPA Method 6010B, and for CrVI using EPA Method SWM3500-Cr D or EPA Method 7196A (modified). Soil samples collected from the RI monitoring well borings, from the former Osborn Products facility SVE well borings, and from the former Osborn Products facility angle borings were submitted to the Transwest Geochem fixed-base laboratory for VOC analysis using EPA Method 8260B.

All soil samples submitted to the fixed-base laboratory for VOC analysis (following the mobile laboratory analysis) were extracted in the mobile laboratory following procedures outlined in EPA Method 5035 (Locus, 2008a). The grab groundwater samples were also delivered under chain-of-custody documentation to Transwest Geochem for VOC analysis via EPA Method 8260B.

Selected soil samples collected by Locus were also analyzed for TOC, performed by IAS Laboratories of Phoenix, Arizona under subcontract to Transwest Geochem. TOC was analyzed using the Walkley-Black Method, which measures easily oxidizable carbon (i.e., carbon other than graphite and coal) and is considered the most accurate method for TOC in soils containing less than approximately 2% organic matter. Wet density, dry density, moisture content, water-filled porosity, and total porosity analyses were performed by Speedie and Associates of Phoenix under subcontract to Transwest Geochem. Wet and dry densities were analyzed using American Society of Testing Materials (ASTM) Method D2937-00. Moisture content was analyzed using ASTM Method D2216-98. Porosity measurements were calculated based on dry (bulk) density results.

4.3.3 2014 –2015 Soil and Soil Vapor Sampling

In December 2014, HGC collected soil vapor samples from monitoring wells WCP-213, WCP-208S, and WCP-205 (Figure 3) using a portable vacuum pump, followed by the collection of groundwater samples from each well. The soil vapor samples were analyzed for VOCs using EPA Method TO-15, and the groundwater samples were analyzed for VOCs using EPA Method 8260B.

In November-December 2015, HGC advanced two soil borings in the East Plume to evaluate passive soil vapor sample results (Section 5.1.8) that indicated elevated PCE concentrations were present and advanced a boring for the installation of monitoring well WCP-241 near the downgradient boundary of the West Plume. After an additional access agreement was executed between ADEQ and the property owner of the 'DJK' property located at 3333 West Indian School Road (Figure 19), boring WCP-DJK-1 was advanced based upon the results from the passive soil gas survey conducted by Locus in 2008 (Appendix D, Figure D.18). Boring HCZ-SB1 was advanced on the HCZ Custom Homes property at 3422 West Clarendon Avenue (Figure 19) based upon the results from the passive soil gas surveys conducted by HGC in 2014-2015 (Appendix D, Figure D.22). The boring for monitoring well WCP-241 was advanced under permit with the City of Phoenix on the southern edge of West Whitton Avenue (Figure 2). At each location, discrete interval soil and soil vapor samples were collected using the Maxi SimulProbe® sampler as previously described. For borings WCP-DJK-1 and WCP-241, samples were collected at 20-foot intervals in the vadose zone from 10-130 ft. bgs. In addition, a grab groundwater sample was collected from boring WCP-DJK-1 after completion of the soil and soil gas sampling activities. For boring HCZ-SB1, soil samples were also collected at 20-foot intervals in the vadose zone from 10-130 ft. bgs, while soil vapor samples were collected at 20-foot intervals from 10-90 ft. bgs. Upon completion of sampling activities, borings WCP-DJK-1 and HCZ-SB1 were abandoned by grouting the boreholes to the surface and properly disposing of the soil cuttings, and monitoring well WCP-241 was installed. Copies of the boring logs for the soil borings and monitoring well installations by HGC are included in Appendix A.

As described above, in November 2015 HGC installed monitoring well WCP-241 in the southwest portion of the West Plume. This monitoring well was installed into the shallow aquifer using hollow-stem auger techniques, to evaluate the West Plume boundary above ADEQ AWQS that had migrated further southwest over time. The well construction is similar to the existing wells in the West Plume, with a total depth of 165 ft bgs, 4-inch outside diameter Schedule 40 polyvinyl chloride (PVC) casing and screen, with a screen consisting of 0.020-inch slots and ranging from 125 to 165 ft bgs. The well was surged and bailed as part of the development, and was finished with a traffic-rated flush-mounted vault. The well was also sampled in November 2015. A detailed well construction diagram is presented in Appendix A.

All of the soil samples and the grab groundwater sample from WCP-DJK-1 were submitted to Trans West Analytical Services under chain-of-custody documentation for VOC analysis by EPA Method 8260B. The soil samples collected from borings HCZ-SB1 and WCP-241 were also analyzed for total chromium by EPA Method 6010B and for CrVI using EPA Method 7196A (modified). The soil vapor samples collected from the borings were submitted to Airtech Environmental Laboratories (AEL) for VOC analysis using EPA Method TO-15.

4.3.4 2016 Monitoring Well WCP-230M Installation

In January 2016, monitoring well WCP-230M was installed in the West Plume adjacent to the existing shallow aquifer well WCP-230 to evaluate for the presence of TCE and other COCs in the LSGS aquifer (Figure 3). This location was chosen since the TCE concentrations in groundwater have been highest in the West Plume from samples collected from WCP-230. WCP-230M was installed using Sonic drilling techniques, and since soil data was collected from the installation of WCP-230 soil samples were only collected for lithologic description. The well construction is similar to the other LSGS wells across the Site, with a total depth of 280 ft bgs, 4-inch Schedule 40 PVC casing and screen, with a screen consisting of 0.020-inch slots and ranging from 260 to 280 ft bgs. The well was finished at the surface with a traffic-rated flush-mounted vault. Development of the well included block surging and bailing followed by the use of a submersible pump to pump three borehole volumes of water (approximately 1,000 gallons) from the well (8-inch borehole by 140 feet of saturated thickness = 365 gallons per borehole). Water quality field parameters were measured during subsequent sampling events. The development water was temporarily stored in an above-ground storage tank pending proper disposal.

Following completion of the development of the well, a dedicated submersible pump (Grundfos Model 10SQ07-240, rated at ¾ horsepower and 10 gpm) and accessories were installed into the well in a similar manner as the other existing LSGS wells across the Site. The pump was set in the center of the screened interval of the well (270 ft. bgs). One week after completion of the well development activities, the well was sampled for the COCs. A detailed well construction diagram is presented in Appendix A.

4.3.5 2016 Supplemental Soil Gas Investigation

Based on review of previous RI results, additional soil gas data were determined to be necessary to support risk screening and to identify source areas. In October and November 2016, HGC conducted supplemental active soil gas sampling at eight properties in the study area. Characterization activities were limited due to ADEQ budget considerations. One property had no previous soil investigation work (Govway Building facility).

The sampling consisted of a series of 19 direct-push soil vapor probes at locations chosen jointly by HGC and ADEQ based on the passive soil gas sampling results presented in Appendix D. The locations and scope of the 2016 active soil gas sampling were:

- Govway Building, 2 soil vapor probes (Figure 20);
- 4001 West Indian School Road, 2 soil vapor probes (Figure 21);
- HCZ Homes area, 5 soil vapor probes (Figure 22);
- Stevens Engineering, 2 soil vapor probes (Figure 23);
- Former Southwest Metals, 2 soil vapor probes (Figure 24);
- Former Pyramid Industries, 2 soil vapor probes (Figure 25);
- Former Osborn Products, 2 soil vapor probes (Figure 26); and
- Triad Trucking, 2 soil vapor probes (Figure 27).

Borings were completed by Johnson Environmental Technologies (JET) drilling, under HGC supervision, between October 30 and November 2, 2016. Samples were collected in summa canisters provided by Airtech Environmental laboratories in Tempe, Arizona, and analyzed for CVOCs by EPA Method TO-15. All sampling was conducted in accordance with ADEQ soil vapor sampling guidance dated July 2008. Underground utilities were cleared prior to drilling through Arizona 811. JET also used a magnetometer to check locations for utilities.

At each location, the direct push probe was advanced to ten feet below ground surface. The sampling probe and 0.125-inch tubing was installed and sealed with granular bentonite and then hydrated. The borehole was allowed to stabilize for a minimum of 20 minutes prior to sampling. The tubing was purged at approximately 200 ml/minute and readings taken with a photoionization detector (PID). Samples were collected directly into the provided summa canisters using a 5-minute fill procedure. Boreholes were sealed with bentonite upon completion of sampling and the surface restored with soil, concrete or asphalt, consistent with existing conditions.

4.4 Groundwater Investigation Activities

4.4.1 Groundwater Monitoring and Sampling

Concurrent with the previously described soil and soil gas investigation activities being conducted throughout the Site, additional groundwater monitoring wells were installed and groundwater samples were collected. Non-purge groundwater grab samples were also collected at select locations from borings immediately below the soil-water interface. In early efforts to identify contributing source areas and determine the plume boundaries, groundwater monitoring wells were installed and sampled by Earth Tech and Weston. Later, additional monitoring wells and replacements for the dry monitoring wells were installed by Locus and HGC as part of the RI program. Work conducted through 2004 was primarily documented in reports by Weston (2003) and Locus (2005), and is summarized where appropriate in this report.

Quarterly groundwater monitoring for the RI, including the measurement of depth-to-groundwater and the collection of groundwater samples for CVOC and/or chromium analysis, was initially conducted by Earth Tech beginning in 1992 through 1996. Weston conducted groundwater monitoring and sampling from May 2001 through June 2003. Locus continued the monitoring program from April 2004 through June 2008.

Additional individual sampling events were later conducted by HGC in July 2013, February 2014, January-February 2015 and November 2015. Monitoring well WCP-230M was sampled individually in February 2016. An additional sampling round in the fourth quarter of 2016 was conducted by Geosyntec (2017).

The current groundwater monitoring network includes 46 ADEQ-owned wells (Table 5), with 35 of the wells completed in the shallow portion of the UAU aquifer to depths of approximately 144 to 165 ft bgs. Four of the wells were completed within the LSGS of the UAU (WCP-13M, WCP-63M, WCP-208M, and WCP-230M, at depths of 288 ft bgs, 270 ft bgs, 276 ft bgs, and 280 ft bgs, respectively) and seven additional shallow wells were installed during LUST investigations within the boundaries of the Site at the former Triad Trucking Company (TRIAD-10, TRIAD-11, TRIAD-12, TRIAD-13, TRIAD-14, and TRIAD-15) and former DJM Construction (well MW-13, referred to as well DJM-13). Up to 2008, monitoring wells WCP-34S, WCP-235, WCP-227 were also part of the monitoring well network, but were not included in HGC's monitoring and sampling events. Further, DJM Construction monitoring wells MW-6 and MW-9 (referred to as DJM-6 and DJM-9) were formerly part of the monitoring well network (Figure 17). However, DJM-6 became dry in 2004, and both DJM-6 and DJM-9 were abandoned after 2008 as part of the LUST case closure at the DJM property. Monitoring well DJM-13 has been part of the monitoring well network since 2013. Production well MTP-1, located at the Michigan Trailer Park at the southwest corner of Osborn Road and Grand Avenue, is also included in the monitoring network. The monitoring well locations are depicted on Figure 3.

Over time several wells have gone dry due to declining water levels. Wells have been abandoned and replaced as necessary. Appendix G documents the well abandonments.

In August 2007, Locus deployed multiple passive diffusion bag (PDB) samplers to collect CVOC vertical profile data from ten monitoring wells representing a cross-section of the Site (WCP-27, -207, -213, -214, -215, -225, -226, -227, -230 and TRIAD-15). In February 2015, HGC deployed multiple PDB samplers in monitoring well WCP-230 to collect additional vertical profile data. Depths for the PDB samples for both events are noted on Table 6.

Prior to collecting groundwater samples for each event, the depth-to-groundwater was measured in each monitoring well at the Site. Measurements were collected manually using an electric water level meter or interface probe, with measurements being recorded to 0.01 ft. Depth-to-groundwater levels and elevations from 2001-2016 are included in Appendix H.

4.4.2 Natural Attenuation Parameters

4.4.2.1 2005 – 2006 Sampling Event

Locus (2005c, 2006b) collected groundwater samples from selected wells for evaluation of natural attenuation parameters in January and December 2005, and March and September 2006. Samples were collected from three areas in the Central Plume: within the main contaminant plume (WCP-25, -26, -27 and -64), upgradient of the main plume where VOCs had been consistently lower than reporting limits (WCP-61), and downgradient of the plume (WCP-207). Although WCP-207 is downgradient of the main contaminant plume, it is also located within the WOC contaminant plume downgradient of the suspected WOC source area. Samples also were collected from wells WCP-205, WCP-208S and WCP-211 in the East Plume. The specific methods of sample collection and handling were not documented.

4.4.2.2 2015 Sampling Events

HGC collected groundwater samples in February 2015 for selected geochemical parameters (nitrate as nitrogen, sulfate, chloride and alkalinity as $CaCO_3$), as well as dissolved oxygen (DO) and oxidation reduction potential (ORP) during the well purging activities (Table 7). HGC collected groundwater samples in November 2015 for natural attenuation parameters consistent with USEPA's protocol for chlorinated solvents (EPA, 1998); samples for ferrous iron and sulfide were field-filtered (0.45-micron) and analyzed in the field using a spectrophotometer In addition, samples were also collected from monitoring wells in the vicinity of the chromium plume in the Central Plume area for cations, anions and trace metals.

4.5 Aquifer Testing

In addition to the groundwater sampling activities, an aquifer test was completed by Locus in 2007 at the former Southwest Metal facility to investigate aquifer hydraulic properties in the Central Plume, and additional aquifer testing was conducted by HGC in October 2015.

4.5.1 Pump Tests - September 2007

In September 2007, Locus completed an aquifer test using monitoring wells near the center of the Central Plume (Locus, 2008b). In preparation for the test, two observation wells were installed at the former Southwest Metal facility. The borings were drilled to an approximate depth of 165 ft bgs. Observation well OB-1 was located 23 ft hydraulically upgradient (northeast) of monitor well WCP-227, and observation well OB-2 was installed 40 ft west of the well WCP-227 (Figure 13). Soil samples were collected for PID screening and lithologic description using a split-spoon sampler at 5-foot intervals, from 5 to 165 ft bgs. Both observation wells were constructed with screened intervals from approximately 125 to 165 ft bgs.

A step-drawdown pump test was conducted on September 26, 2007, to obtain an optimal pumping rate for a subsequent 24-hour constant rate pumping test. Well WCP-227 was selected as the pumping well. A constant rate pumping test was performed on September 27 and 28, 2007, with monitoring well WCP-227 pumped for approximately 24 hours at a flow rate starting at 10.0 gpm. Details are discussed in the Locus report (Locus, 2008b). In addition to observation wells OB-1 and OB-2, monitoring wells WCP-26 and WCP-214 were used for observation. Pumping tests results are discussed in Section 5.4.1.

4.5.2 Slug Tests - October 2015

HGC performed hydraulic testing using slug tests on a total of eight monitoring wells: three in the West Plume, three in the East Plume, and two in the Central Plume. The purpose of the hydraulic testing was to collect data for estimating hydraulic parameters (primarily hydraulic conductivity) in the vicinity of each well. Hydraulic conductivity results from the test analysis were then used to estimate average linear velocities of groundwater flow in the vicinity of each well. Single tests were conducted for seven of the wells; two tests were conducted and data were collected by hand at location WCP-213, as the transducer used for that location malfunctioned. The slug test data and plots are presented in Appendix I.

HGC personnel conducted the slug tests on October 13 and 14, 2015, at monitoring wells: WCP-205, WCP-208S and WCP-213 (East Plume); WCP-212, WCP-230 and WCP-234 (West Plume); and WCP-210 and TRIAD-14 (Central Plume). The slug used for the tests consisted of a sealed, pea-gravel-filled, schedule 80 PVC tube approximately 3 feet long. The 3-foot slug displaces approximately 0.75 gallons of water. Two In-Situ Level Troll™ data loggers were used for each test. A submersible 0-30 pounds per square inch absolute (psia) Level Troll 500™ pressure transducer and data logger was deployed below the static water column in the tested well and used to measure the change in water level during the test. The other Level Troll was used to measure barometric pressure and was placed in a thermally protected environment near the tested wells. Barometric pressure readings were collected at 5 minute intervals starting one-half hour before the start of the first slug test through the end of the last slug test.

Water level data were collected automatically using the downhole, submersed Level Troll data logger and by hand using the electric water level meter during each slug test. Automatically logged data were collected at 1-second intervals from the submersed transducer. Hand-collected data were obtained more frequently in the first few minutes of each test when water levels were changing rapidly, then less frequently as the rate of water level change diminished. Hand-collected data were used to verify the results of the logged data.

Prior to each test, the static water level in each well was measured by hand using the electric water level meter. The data logger was then lowered to a depth of approximately 8 to 10 feet below the static water level, and background pressure readings were collected for at least 30 minutes prior to beginning a test. The purpose of collecting the background data was to allow correction of test data for any trends detected in water levels measured at the wells.

Once background data were collected, the slug and electric water level meter sensor were suspended in the well just above the static water level. Each test commenced by lowering the slug to a depth of approximately 2 feet below the static water level over a period of a few seconds and taking water level readings by hand as soon as possible afterwards. Automatically logged data were checked and backed up on the hard drive of a laptop computer. The test results are discussed in section 5.4.2.

Upon completion, equipment pulled from each well was washed using a solution of Alconox® detergent and water and rinsed with clean distilled water prior to its use in the next test.

4.6 Geophysical Logging

Geophysical logging (electrical resistivity, gamma-neutron, natural gamma, sonic, and caliper logs) was conducted at the Site at several boreholes by Southwest Exploration Services on behalf of Locus, including the open boreholes for monitoring wells WCP-63M and WCP-208S/208M in 2005. Logging was also conducted through the cased boreholes of monitoring wells WCP-25, -64, -205, -212, -213, -216, -225 and -227 in December 2007. Further interpretation was not completed.

4.7 Monitoring Well Redevelopment

In 2013, HGC was contracted to perform groundwater sampling for the monitoring well network. Prior to HGC's presence at the Site, the monitoring wells had not been pumped or sampled in over five years. After HGC field located and gained access to the monitoring wells, it was determined that all of the wells required redevelopment prior to sampling to ensure the stability and viability of each well.

The well redevelopment activities occurred in June and July 2013 and were conducted by Geomechanics Southwest, Inc. Each of the wells were redeveloped through brushing via wire line, followed by block surging and pumping until clear. The water generated from the redevelopment was temporarily stored in a 4,000-gallon capacity Baker tank for subsequent disposal.

4.8 Global Positioning System (GPS) Well Survey

A resurvey of all wells in the monitoring well network was completed by Starlink Surveying in March 2014. The survey data were used to update monitoring well locations on all figures and modify top of casing elevations (where different). Starlink Surveying also provided GPS well location and top-of-casing elevations for newly installed monitoring wells WCP-241 (November 2015) and WCP-230M (February 2016). Copies of the monitoring well survey data are presented in Appendix J.

5. REMEDIAL INVESTIGATION RESULTS

5.1 Passive Soil Gas Survey Results

Beacon provided individual reports for each of the completed surveys (Appendix C). The Beacon reports detail the analytical methods and laboratory quality control procedures followed by Beacon. Results of each individual survey are summarized below and sample results are provided in Appendix D.

5.1.1 Redburn Tire Company

Soil gas modules were deployed at the Redburn Tire Company facility on March 15 and 16, 2006, and retrieved on April 5, 2006. PCE and TCE results are presented in Appendix D, Figures D.1 and D.2. Generally, the PCE and TCE values were low, with a maximum PCE result of 1,207 nanograms (ng) in sample PSG14 in the southwest portion of the south lot. The PCE result in sample PSG08, located in the south lot, was 1,136 ng. The highest TCE result was 169 ng in sample PSG08. The results did not indicate any specific areas of concern.

5.1.2 Former Pyramid Industries

Soil gas modules were deployed at the former Pyramid Industries facility on November 22, 2005, and retrieved on December 14, 2005. PCE and TCE results are presented in Appendix D, Figures D.3 and D.4. The PCE map indicated three potential areas of concern – the southeast and northwest corners of the property and near the southwest corner of the building. Elevated TCE was also found in the same location near the southeast corner of the property. The highest individual PCE result was in the northwest corner of the property at 17,989 ng in sample PSG02, with 12,217 ng in sample PSG22 (southwest corner of the building) and 14,147 ng in sample PSG34 (southeast corner of the property). The highest TCE result was also found in sample PSG34 at 8,981 ng. CVOC results were relatively low near the drywell in the southwest corner of the property.

5.1.3 Former Giltspur Exhibits

Thirty soil gas modules were deployed at the former Giltspur Exhibits facility on November 18, 2005, and retrieved on December 14, 2005. PCE and TCE results are presented in Appendix D Figures D.5 and D.6. PCE was detected in all samples, with elevated values near the two centrally located drywells west of the main building. The highest PCE values were reported in samples PSG21 (12,122 ng) and PSG28 (11,493 ng). In the east parking lot, the greatest PCE result was 8,549 ng in sample PSG05. TCE was detected in all samples west of the building, but in only 7 of 18 samples in the east parking lot. The maximum TCE value was 17,046 ng, also found in sample PSG21.

5.1.4 Former Triad Trucking Company

Sixty-eight soil gas modules were deployed at the former Triad Trucking Company facility on November 8 and 9, 2005, and retrieved on November 29 and 30, 2005. PCE and TCE results are presented in Appendix D, Figures D.7 and D.8. The maps indicate a main area of elevated PCE in the northeast corner of the property, which appears to be a former truck maintenance area. The highest PCE values were 40,573 ng in sample PSG09 and 37,498 ng in sample PSG36. Four other samples also had PCE exceeding 20,000 ng. TCE was detected in only nine samples, with the highest value of 748 ng being reported in sample PSG36.

5.1.5 Former Osborn Products Company

Seventeen modules were deployed at the former Osborn Products facility on November 17, 2005, and retrieved on December 5, 2005. PCE and TCE results are presented in Appendix D, Figures D.9 and D.10. The main area with reported CVOC was at the north end of the survey grid, near the former drywell location.

The highest PCE result was 50,129 ng in sample PSG02. The highest TCE result was 3,863 ng, also in sample PSG02. In addition to the CVOCs, petroleum compounds (including benzene) were detected in nearly every soil gas sample.

5.1.6 Former Southwest Metal Industries

Twenty-nine soil gas modules were deployed at the former Southwest Metal facility on December 1, 2005, and retrieved on December 19, 2005. PCE and TCE results are presented in Appendix D, Figures D.11 and D.12. The highest PCE values were detected near the southwest corner of the facility. The maximum PCE result was 3,050 ng in sample PSG16. TCE was only detected in seven of the twenty-nine samples, with the highest TCE result of 446 ng in sample PSG29 located adjacent to an old drain near the southeast corner of the main building.

5.1.7 West Plume Area

Sixty-five modules were deployed between February 26 and March 3, 2008, within the COP right-of-ways along Indian School Road, Fairmount Avenue, Clarendon Avenue, Whitton Avenue, 39th Avenue, and 40th Avenue. The modules were retrieved from March 18 to 20, 2008.

Review of the Beacon report indicated that PCE, TCE, and 1,1-DCE were detected in 29, 28, and 26 samples, respectively (Beacon, 2008a). The highest PCE values were in sample SG61 at the southeast corner of Indian School Road and 39th Avenue (1,089 ng) and in sample SG25 (1,085 ng), located on 40th Avenue near the intersection of Whitton Avenue (Appendix D, Figure D.13). The highest TCE and 1,1-DCE values were in sample SG32 near the east end of Fairmount Avenue (2,513 ng and 4,174 ng, respectively), located approximately 200 feet west of monitoring well WCP-225 (Appendix D, Figures D.14 and D.15, respectively). Elevated TCE and 1,1-DCE were also detected in sample SG37 near the northwest corner of Clarendon Avenue and 40th Avenue (269 ng and 2,123 ng, respectively), and in samples SG10 (294 ng and 1,635 ng, respectively) and SG11 (311 ng and 1,963 ng, respectively) near the southwest corner of Indian School Road and 39th Avenue. Petroleum hydrocarbon compounds were detected in numerous samples, and vinyl chloride and TCA were detected in three samples and one sample, respectively.

5.1.8 East Plume Area

Sixty-two soil gas modules were deployed in the COP right-of-way along Clarendon Avenue, Weldon Avenue, Whitton Avenue, and 34th Avenue on October 27, 28 and 31, 2005, and retrieved on November 16, 2005. PCE was the primary constituent identified, detected in fifty-three of the sixty-two samples. As indicated in Appendix D, Figure D.16, values were greatest near the intersection of Clarendon and 34th Avenues, where the highest PCE value was 71,635 ng in sample PSG08. From 34th Avenue westward along Clarendon Avenue, PCE decreased somewhat with values between approximately 16,000 and 43,000 ng, before a drop to 1,286 ng in sample PSG01 at the intersection of 35th Avenue. PCE values decreased significantly to the southeast along the 34th Avenue sampling grid, with a slight increase near the intersection of 34th and Weldon Avenues. TCE was detected in only two samples (52 ng in sample PSG10 and 39 ng in sample PSG08), which were located in the vicinity with the highest PCE results. Beacon did not produce a figure showing the data.

Twenty-four soil gas modules were deployed as part of a passive soil gas survey conducted in March 2008 to further investigate the northern and eastern extent of the contaminant plume and to identify potential sources hydraulically upgradient of impacted wells WCP-208S, WCP-213, and WCP-218. Nine modules were installed within the COP right-of-way on the east side of 35th Avenue between Clarendon Avenue and Indian School Road, one module was installed within the right-of-way on the west side of Grand Avenue south of Indian School Road, and an additional fourteen modules were deployed within the right-of-way on the east side of Grand Avenue. Survey results are presented in Appendix D, Figures D.17 and D.18.

PCE was detected in 15 soil gas samples and TCE was detected in 4 soil gas samples (Beacon, 2008a). 1,1-DCE was not detected in any sample. The highest PCE and TCE values were in sample SG03 (7,694 ng and 149 ng, respectively), located on the east side of 35th Avenue approximately 200 feet north of Clarendon Avenue, and in samples SG16 (3,718 ng and 92 ng, respectively) and SG17 (7,168 ng and 32 ng, respectively), both located on the east side of Grand Avenue, approximately half way between Indian School Road and 33rd Avenue. Petroleum hydrocarbon compounds were also reported in 17 of the 24 samples.

Based on the passive soil gas survey results from March 2008 that suggested a contaminant source may exist north of Grand Avenue, twenty-nine soil gas modules were deployed on October 7 and 8, 2008, at approximately 50-foot intervals along Indian School Road between 35th and 33rd Avenues (Appendix D, Figure D.19). The survey was designed to collect analytical data upgradient (north/northeast) of monitoring well WCP-213 and the area of elevated soil gas concentrations on Grand Avenue, in an effort to identify other potential contributing CVOC source areas. The modules were retrieved on October 23, 2008. PCE and TCE were not detected in any of the 29 soil gas samples (Beacon, 2008b). The most common detected constituent was TPH. TPH in the gasoline range (C_5 to C_9) was detected in 26 of the 29 samples, while heavier kerosene to diesel range TPH (C_{10} to C_{15}) was reported in 24 of the 29 samples. Additional compounds reported included chloroform (nine samples), 2-methyl naphthalene (seven samples), 1,2,4-trimethylbenzene (six samples), naphthalene (four samples), and trichlorofluoromethane (one sample).

Eleven additional soil gas modules were deployed along 33rd Avenue between Indian School Road and Grand avenue on May 14, 2014, and were retrieved on May 28, 2014. PCE and TCE results are presented in Appendix D, Figures D.20 and D.21. PCE was only identified in five of the samples, with the highest PCE result at 67 ng in sample PSG-3. TCE was only reported in sample PSG-8 at 8 ng. TPH in the gasoline range (C_5 to C_9) was not detected in any of the samples; however, heavier kerosene to diesel range TPH (C_{10} to C_{15}) was reported in four samples, with the highest result in sample PSG-11 at 7,654 ng. Additional reported compounds included chloroform (3 samples) and toluene (1 sample) (Beacon, 2014).

A limited passive soil gas survey was conducted in the spring and fall of 2015 to collect additional supporting data for the elevated soil gas values identified on Clarendon Avenue in the 2005 survey, and to identify a potential source of the impacted groundwater detected in monitoring well WCP-213 and other nearby wells. Fifteen soil gas modules were deployed on April 10, 2015, and retrieved on April 25, 2015, and 38 soil gas modules were deployed from September 14 to 16, 2015, and retrieved September 29 to 30, 2015. An additional nine modules were deployed on October 8, 2015, and retrieved on October 26, 2015. PCE and TCE results are presented in Appendix D, Figures D.22 and D.23. Elevated PCE values were identified in all of the samples, with higher values generally located on the north side of Clarendon Avenue. PCE values on the north side of Clarendon Avenue ranged from 147,244 ng to 268,387 ng (in sample N-7), and on the south side of Clarendon Avenue ranged from 34,952 ng to 105,543 ng (in sample S-3). TCE was also identified in all of the samples, again with the higher values grouped on the north side of Clarendon Avenue. TCE values on the north side ranged from 451 ng to 1,809 ng (in sample N-2), and on the south side ranged from 69 ng to 265 ng (in sample S-3). (Beacon, 2015a)

The highest TPH mass values were identified in samples collected on the property at 3839 North 35th Avenue, ranging from 14,254 ng in sample CS-6 to 66,686 ng in sample MMM-6. (Beacon, 2015b).

5.2 Soil Results

5.2.1 VOCs

Soil sample analytical results from the ERA and RI investigations are presented in Tables 1, 2, 8 and 9. CVOCs (primarily PCE and TCE) were only detected in soil samples collected at the former Osborn Products facility, from the boring for monitoring well WCP-213, and from boring HCZ-SB1.

For soil samples collected by Locus, PCE was reported in eight soil samples collected at the former Osborn Products facility (Figure 10). The mobile laboratory Method 8021B screening analyses (Table 1) detected PCE in boring SB01 at 40 ft bgs (11 mg/kg), and in boring SB02 at 35 ft bgs (3.3 mg/kg), 40 ft bgs (26 mg/kg) and 95 ft bgs (1.1 mg/kg). Based on these data, PCE concentrations exceed the ADEQ Residential SRL for PCE of 5.1 mg/kg and only one sample exceeds the Non-Residential SRL of 13 mg/kg. PCE concentrations exceed the ADEQ minimum GPL for PCE of 0.80 mg/kg. Following extraction and analysis in the mobile laboratory, the soil samples collected at 40 ft bgs from borings SB01 and SB02 were submitted to the fixed-base laboratory for compliance analysis using EPA Method 8260B. Results of that analysis (Table 2) indicated PCE concentrations of 0.27 mg/kg and 0.33 mg/kg, respectively. In SVE test boring SVE-1 (Table 8), PCE was detected in soil samples collected from 35 ft bgs (0.12 mg/kg) and 40 ft bgs (0.23 mg/kg), and at boring SVO-1 at 35 ft bgs (0.049 mg/kg) and 40 ft bgs (0.31 mg/kg). None of these data exceed ADEQ Residential and Non-residential SRLs, or the ADEQ minimum GPL for PCE.

TCE was reported in five soil samples at the former Osborn Products facility at depths of 35 and 40 ft bgs. TCE was detected at a concentration of 3.5 mg/kg in sample SB02 at 35 ft bgs (via

EPA Method 8021B screening analysis) (Table 1). This concentration does not exceed the ADEQ Residential and Non-residential SRLs for TCE of 30 mg/kg and 65 mg/kg, respectively. However, it doses exceed the ADEQ minimum GPL for TCE of 0.76 mg/kg. EPA Method 8260B analyses detected TCE concentrations of 0.15 mg/kg from SB01 at 40 ft bgs and 0.33 mg/kg from SB02 at 40 ft bgs (Table 2). TCE was detected in boring SVE-1 at 40 ft bgs (0.24 mg/kg) and in boring SVO-1 at 40 ft bgs (0.081 mg/kg) (Table 8). These data do not exceed ADEQ Residential and Non-residential SRLs and minimum GPL for TCE.

Several petroleum hydrocarbon compounds and PAHs were detected in soil samples collected at 40 ft bgs from borings SB01 and SB02 at the former Osborn Products facility. None of these data exceeded ADEQ SRLs or minimum GPLs.

Ethylbenzene (0.13 mg/kg) and total xylenes (0.43 mg/kg) were the only contaminants detected at the former Triad Trucking Company facility in boring SB01 at a depth of 110 ft bgs (Figure 15). Neither of these contaminants exceeds ADEQ SRLs or minimum GPLs.

PCE was also detected in two soil samples collected during the drilling of East Plume monitoring well WCP-213 adjacent to the HCZ Custom Homes facility. At depths of 90 and 100 ft bgs, the reported PCE concentrations were 0.13 mg/kg and 0.27 mg/kg, respectively (Table 9). These concentrations do not exceed the ADEQ SRLs or GPL for PCE.

During the 2015 soil sampling event involving borings WCP-DJK-1 and HCZ-SB1 (Figure 19), PCE was detected in all samples from boring HCZ-SB1 (Table 2). Concentrations ranged from 0.0819 mg/kg at 30 ft. bgs to 0.700 mg/kg at 110 ft bgs. All are less than the ADEQ SRLs and minimum GPL for PCE. None of the other samples collected from these two borings contained PCE or other CVOC concentrations. In the West Plume, sample results from boring WCP-241 did not report CVOC concentrations above reporting limits (Table 9).

5.2.2 Chromium Analysis

Soil sample chromium results obtained through 2006 were reported as total chromium and CrVI. Beginning in January 2007, results were reported as CrIII and CrVI. The current ADEQ Residential SRL for CrIII is 120,000 mg/kg, and the current Non-residential SRL for CrIII is 1,000,000 mg/kg (based on a 100% saturation ceiling limit). The current Residential and Non-residential SRLs for CrVI are 30 mg/kg and 65 mg/kg, respectively. There are no ADEQ SRLs for total chromium, but there is an ADEQ minimum GPL of 590 mg/kg. The ADEQ minimum GPL for CrIII is 590 mg/kg (based upon the total chromium GPL), and the minimum GPL for CrVI is considered by the ADEQ to be any detectable amount. Specifically, if CrVI is present, ADEQ will evaluate the investigation and closure requirements on a case by case basis.

Chromium results for all collected soil samples are listed in Table 2 except for sample results for boring WCP-241 (Table 9).

Total chromium concentrations for samples collected by Locus were reported in nearly all soil samples for which chromium analyses were conducted. The highest concentration (140 mg/kg) was detected in boring SB01 at the former Osborn Products facility. This concentration does not exceed the minimum GPL for total chromium.

CrVI was only reported in five soil samples. These soil samples were collected from the former Magic Metals facility and the former Southwest Metal facility. At the former Magic Metals facility, a CrVI concentration of 1.1 mg/kg was detected in one soil sample collected from boring SB01 at a depth of 50 ft bgs (Figure 11). At the former Southwest Metal facility (Figure 13), CrVI was reported in soil boring SB01 at 90 ft bgs (0.57 mg/kg), in boring SB05 at 80 ft bgs (6.5 mg/kg), boring SB07 at 70 ft bgs (24 mg/kg), and boring SB08 at 70 ft bgs (0.52 mg/kg). None of these data exceeded ADEQ SRLs or minimum GPL.

For samples collected by HGC in soil borings HCZ-SB1 and WCP-241, total chromium concentrations were reported in all soil samples. Concentrations from boring HCZ-SB1 ranged from 21.9 to 79.3 mg/kg (Table 2), and concentrations from boring WCP-241 ranged from 22.6 to 68.1 mg/kg (Table 9). These data do not exceed the minimum GPL for chromium. No CrVI concentrations were detected in any of the samples.

5.3 2004 through 2016 Active Soil Gas Results

5.3.1 Locus Investigation

CVOCs were more prevalent in soil gas samples than in the associated soil samples (Tables 3 & 10). For samples collected by Locus, CVOCs were detected in 482 of 796 discrete interval soil gas samples collected during the ERA evaluation and RI programs. With the exception of the Redburn Tire Company, PCE and TCE were detected in soil gas samples at each facility investigated, with PCE being reported in 318 samples and TCE in 295 samples. TCE was the predominant constituent reported at the former Osborn Products facility, former Precise/Paraflex facility, and the former Giltspur Exhibits facility, and in the RI monitoring well borings west of 35th Avenue. PCE was the most commonly reported constituent in soil gas samples collected at the former Southwest Metal facility, former Magic Metals, former Pyramid Industries, and former Triad Trucking Company facilities, as well as in monitoring well borings east of 35th Avenue.

The highest soil gas TCE concentrations for samples collected by Locus were reported at the former Magic Metals facility in samples collected below 100 ft bgs. TCE was detected in nearly all soil gas samples collected below 35 ft bgs at the former Osborn Products facility, and was detected throughout the vadose zone soil column in former Precise/Paraflex facility borings SB02, SB03, and SB04.

The highest soil gas PCE concentrations for samples collected by Locus were reported in the boring for monitoring well WCP-213, where PCE was detected in all soil gas samples collected from 5 ft bgs to the total sampling depth of 130 ft bgs (Table 10). PCE was also detected throughout the vadose soil column in all borings at the former Triad Trucking Company facility, former Pyramid Industries boring SB03, and former Southwest Metal boring SB07.

Cis-1,2-DCE and *trans*-1,2-DCE were reported in 46 and 29 of the soil gas samples collected by Locus, respectively. These compounds were reported in samples collected from ERA evaluation borings at the former Magic Metals, former Pyramid Industries, and former Triad Trucking Company facilities, and in borings for monitoring wells WCP-27 and WCP-206 (Tables 3 and 10).

These data indicate that releases have occurred at or in the vicinity of these facilities. However, converting the detected concentrations to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance for comparison to SRLs and GPLs indicates that none of the detected concentrations exceed SRLs or GPLs as soil solid contaminant concentrations.

5.3.2 2014-2015 Soil Vapor Sampling

The December 2014 laboratory results (Table 11) for the soil vapor samples collected from monitoring wells WCP-213, WCP-208S, and WCP-205 indicated elevated PCE concentrations in each sample. Elevated trichlorofluoromethane concentrations were also detected in each of the samples, and trichlorotrifluoroethane was detected in the sample collected from WCP-205. TCE was not reported in any of the vapor samples; however, the high PCE and trichlorofluoromethane concentrations required high laboratory dilutions that may have masked the presence of TCE by increasing reporting limits.

For the soil vapor samples collected by HGC in November 2015, CVOCs were detected in samples collected from borings WCP-DJK-1, HCZ-SB1 and WCP-241 (Tables 3 and 10)(Figures 2 and 19). Maximum PCE and TCE concentrations in samples from sample location WCP-DJK-1 and well WCP-241 were 2.680 mg/m^3 and 0.221 mg/m^3, respectively. PCE analytical results for samples collected from boring HCZ-SB1, ranged from 1.001 mg/m^3 (at 130 ft. bgs) to 64.21 mg/m^3 (at 50 ft. bgs), and the sample concentration at 10 ft. bgs was 3.398

mg/m^3. TCE was only detected in the sample at 10 ft. bgs at 0.0891 mg/m^3. Converting the detected concentrations to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance for comparison to SRLs and GPLs indicates that none of the detected concentrations exceed SRLs or GPLs as soil solid contaminant concentrations.

5.3.3 2016 Supplemental Soil Gas Investigation

PCE and TCE were the primary CVOCs detected in the supplemental soil gas sampling. Table 12 presents the analytical results. Minor detections of BTEX compounds were found at some facilities and other chlorinated VOCs were detected at relatively low concentrations. The detected COCs associated with the facilities are:

- Govway Building (Figure 20), 1,1-DCE, PCE (West Plume area);
- 4001 West Indian School Road (Figure 21), 1,1-DCE, PCE, TCE (West Plume area);
- HCZ Homes area (Figure 22), PCE (East Plume area);
- Stevens Engineering (Figure 23), 1,1-DCE, PCE, TCE (West Plume area);
- Former Southwest Metals(Figure 24), 1,1-DCE, PCE, TCE (Central Plume area);
- Former Pyramid Industries(Figure 25), PCE, TCE (Central Plume area);
- Former Osborn Products(Figure 26), 1,1-DCE, PCE, TCE (Central Plume area); and
- Triad Trucking (Figure 27), PCE (Central Plume area).

PCE was detected at all eight facilities. The highest concentrations were at the HCZ Homes facility, with PCE concentrations ranging from 27.2 mg/m^3 to 1,254 mg/m^3. The detection limits for TCE and other VOCs were elevated in the HCZ Homes samples due to the high PCE concentrations. These PCE concentrations do not exceed the Residential or Non-residential SRLs for PCE when converting the detected concentrations to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance. The detection of 1,254 mg/m^3 does exceed the minimum GPL for PCE when converted to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance.

TCE was detected at five of the eight facilities. The maximum TCE concentration was 1.22 mg/m^3 at the former Osborn products facility. The TCE concentrations do not exceed the Residential and Non-residential SRLs and the minimum GPL for TCE when converting the detected concentrations to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance.

1,1-DCE was detected at all properties in the West and Central plumes, except at the former Pyramid Industries and Triad Trucking facilities. 1,1-DCE was not detected at HCZ homes in the East plume, however the detection limits were elevated above the typical detections at other facilities. The 1,1-DCE concentrations do not exceed the Residential and Non-residential SRLs and the minimum GPL for 1,1-DCE when converting the detected concentrations to soil solid contaminant concentrations using ADEQ Soil Vapor Sampling Guidance.

5.4 Aquifer Testing Results

5.4.1 Pump Tests - September 2007

Table 13 presents the Locus aquifer test results. Estimates of transmissivity from these tests range from 52 to 562 feet squared per day (ft^2/day), and the hydraulic conductivity values estimated assuming a saturated thickness of 33 feet range from 1.6 to 17 feet per day (ft/day). The hydraulic conductivity estimates range from 1.6 to 8.7 ft/day based on drawdown data and from 3.5 to 17 ft/day based on recovery data. The results of the aquifer tests are generally consistent with the physical logging and sieve analysis, which identifies the aquifer soils as primarily sandy silt and silty sand. The data collected from this aquifer test demonstrate that groundwater pumping scenarios may be implemented for potential groundwater remediation within the Central Plume (Locus, 2008b).

5.4.2 Slug Tests Results - October 2015

Data were analyzed using AQTESOLV™, a computer program developed and marketed by HydroSOLVE, Inc. In preparing the automatically logged data for analysis, the total number of records was reduced. In general, all data collected in the first 10 seconds were retained, then every 2nd, then 3rd, then 4th, etc. record was retained for analysis. For example, if the first 10 records were retained (10 seconds of data at 1-second intervals), the next records to be retained would be the 12th, the 15th, the 19th, the 24th, etc. The maximum measured rise in water levels should be based on the volume in the casing (4-inch diameter for these wells), and the volume in the annular space between the casing and the bore (10-inch or 14-inch diameter). Assuming a 30 percent effective porosity for the filter pack, the expected rise in water level is approximately 1.1 to 1.9 feet per gallon, depending on the bore diameter. The maximum expected rise for the 3-foot, 0.75-gallon slug is therefore between 0.39 and 0.68 feet.

Data were analyzed using two solution methods: the KGS unconfined method (Hyder et al., 1994) and the Bouwer-Rice unconfined method (Bouwer and Rice, 1976). When filter pack porosities were required by the analytical method, a value of 30 percent was used. Since the static water level was below the top of the screened interval for all tests, the saturated thickness was taken to be the effective screen length, i.e. the difference between the depth of the static water level measured just prior to the test and the depth of the bottom of the screened interval (Table 14). In each case, the test duration was short enough that the impact of changing barometric pressure could be ignored.

The KGS solution allows estimation of both specific storage and hydraulic conductivity, while the Bouwer-Rice solution allows estimation of only the hydraulic conductivity. The Bouwer-Rice solution is valid only when a straight line is identifiable on a plot of the log of displacement versus time (indicating that flow is nearly steady), and is insensitive to both storage and the specified initial water level rise. Typically, only the later-time data are interpretable using Bouwer-Rice.

The KGS solution accounts for non-steady flow and storage, is sensitive to the specified initial water level rise, and generally allows a fit to both early- and late-time data. Both solutions were used for comparison. Automatically logged and hand-collected data were analyzed separately using both solution methods. The hand-collected data therefore served as an independent data set and a check on the accuracy of the automatically logged data. Analyses were performed and compared for two tests with hand-collected data for location WCP-213, as there were no automatically logged data for that well; both results are shown.

The results of the analyses are summarized in Table 15 and the AQTESOLV™ output is provided in Appendix I. Estimates of hydraulic conductivity range from 0.78 to 2.4 feet per day (ft/d) in the East Plume, 0.84 to 7.9 ft/d in the Central Plume and 0.05 to 2.0 ft/d in the West Plume, for the automatically logged data (except for the use of hand-collected data for location WCP-213). Slug tests measure only a local part of the aquifer near the well, so broad comparisons to the pumping test results, which measure a large volume of aquifer, cannot be made with the limited number of test results. All results are consistent with the range of properties expected for the aquifer materials within the UAU.

Hydraulic conductivities using the KGS and Bouwer-Rice solutions, based on either automatically logged data or hand-collected data, agree within a factor of three or less. The estimates obtained from automatically logged and hand-collected data for either solution agree within approximately a factor of two or less.

5.5 Geophysical Logging Results

Available geophysical logs from 2006 and 2007 are included in Appendix A. Investigators at time provided no additional interpretation of the geophysical logs. They are included here for completeness and were not used further in this RI.

5.6 Groundwater Investigation Results

5.6.1 Groundwater Depths

Shallow aquifer groundwater conditions beneath the Site have changed considerably since the first monitoring wells were installed in the area in May 1992. At that time, prior to the lining of the Grand Canal in 1998, groundwater was encountered at a depth of 77.4 ft bgs during installation of well WCP-1 in front of the former Osborn Products facility (Weston, 2003). Following the lining of the canal and regional drops in groundwater depths, the most recent depth-to-groundwater measurement (November 2015) in monitoring well WCP-25 at the former Osborn Products facility was 137.65 ft bgs, a decline of approximately 60 ft. Similar declines have occurred at the other monitoring wells, with current typical depths to groundwater ranging from approximately 130 to 140 ft bgs. Appendix H lists the depths to groundwater and corresponding elevations for the monitoring well network since 2001. The groundwater table decline since 1999 is illustrated on the hydrograph on Figure 28.

Also depicted on Figure 28 are the monitoring wells screened in the LSGS, which include WCP-13M, WCP-63M, WCP-208M, and WCP-230M. From the available data beginning in 2005-2006, groundwater levels in the LSGS wells (the bottom four trends on the hydrograph) have consistently been approximately 10 ft deeper than in the shallow aquifer wells. This indicates a hydraulic separation between the shallow aquifer and the LSGS in this area.

Measurements collected during the November 2015 sampling event indicate that water levels are approximately 20.9 ft shallower in shallow aquifer wells WCP-210 and WCP-208S than in adjacent LSGS aquifer wells WCP-63M and WCP-208M. The difference in water level depths between these wells in 2004 was 16.5 ft (Locus, 2005a). The continued difference in water level measurements provides evidence of two aquifers separated by the MFGS acting as a semi-confining layer, and of a downward hydraulic gradient. However, as discussed earlier, there is some indication that at least a minimal hydraulic connection occurs between the shallow aquifer and the deeper LSGS aquifer.

5.6.2 Flow and Gradient

In addition to the declining water table, the groundwater flow direction in the shallow aquifer beneath the Site has also changed. Prior to 1998, the groundwater mounding along the unlined canal caused the flow direction to be toward the north/northwest across the Site, as depicted on figures in Appendix B (Earth Tech, 1996a). After the canal was lined and the groundwater mounding conditions subsided, the flow direction shifted to the south/southwest. The groundwater elevations and flow conditions from July 2013, February 2014, February 2015 and November 2015 are depicted on Figures 29, 30, 31 and 32, respectively. The figures depict that the groundwater flow direction has continued to trend to the south/southwest. The horizontal gradient varies across the site with an average of approximately 0.01 in 2015.

Horizontal groundwater flow directions in the LSGS portion of the UAU aquifer have consistently been in a south-southwesterly direction under non-pumping conditions (Geotrans, Inc., 2004). However, pumping of SRP wells can cause the flow direction and gradient to alter toward that well during sustained pumping. Appendix K presents the annual pumping volumes for SRP well 9.5E-7.7N through February 2015 and other related well information. In 1999, SRP agreed to temporarily discontinue regular pumping at the request of ADEQ (Geotrans, Inc., 2004). As is evident in the provided information, prior to 1999 the SRP wells near the Site pumped a considerable volume of water.

5.6.3 Groundwater Grab Sampling Results

VOC analytical results for groundwater grab samples collected during the initial RI phase, subsequent ERA and RI evaluations, and by HGC in 2015 are included in Table 4. Available laboratory analytical reports, chain-of-custody documentation, and laboratory quality control data for the groundwater sampling activities are included in Appendix L. Note that not all analytical reports were available. Therefore, information regarding these data was obtained from tables and text provided in documents contained in ADEQ files.

In the initial RI phase, grab groundwater samples collected from the boreholes for monitoring wells WCP-25, -26, -59, and -64 contained 1,1-DCE, TCE, and a groundwater sample from WCP-64 contained PCE, above their respective AWQS. The highest of these concentrations within each monitoring well was typically detected in the samples collected at depths ranging from 131 to 136 ft bgs. The results of the groundwater grab samples collected in the subsequent ERA and RI evaluations (Table 4) indicated that TCE, PCE, 1,1-DCE and *cis*-1,2-DCE were the most frequently reported VOCs, with TCE, PCE and 1,1-DCE having concentrations in excess of their applicable AWQS. The highest PCE concentration (320 µg/L) was reported in monitoring well borehole WCP-213. The highest TCE concentrations of 500 µg/L and 400 µg/L were reported in soil borings SB08 and SB09 at the former Southwest Metal facility. Although VOC concentrations in the groundwater grab samples were greater than those for the associated purged groundwater samples collected during the monitoring phase of the RI, VOC concentration trends in the grab samples are similar to the purged sample results.

In 2015, HGC collected a grab groundwater sample from soil boring WCP-DJK-1 at a depth of 139.7 ft bgs to evaluate groundwater conditions in response to the passive soil gas results north of Grand Avenue indicating the presence of elevated PCE (Table 4). No VOC constituents were detected in the groundwater grab sample.

Chromium analytical results for groundwater grab samples are included in Table 4. During the initial ERA evaluations, total chromium was detected in all samples with most results exceeding the AWQS of 0.1 mg/L at each facility. The highest total chromium concentration was 1.7 mg/L, detected at the former Precise/Paraflex facility. CrVI was only detected in one sample at the former Southwest Metal facility (from monitoring well boring WCP-26) at 0.37 mg/L. An AWQS has not been established for CrVI. Chromium was not analyzed in groundwater grab samples collected during the subsequent ERA and RI activities.

5.6.4 Groundwater Purge Sampling Results

VOC analytical results for groundwater samples collected following well purging conducted between May 1992 and September 2008 are provided in Table 16. Analytical results from the monitoring events conducted by HGC from 2013 to 2016 are provided in Table 17. Included are results from monitoring wells that were subsequently abandoned due to the declining groundwater table. Figure 2 depicts the general boundaries of the West Plume, Central Plume, and the East Plume from the most recent groundwater sampling results (November 2015).

Laboratory analytical reports, chain-of-custody documentation, and laboratory quality control data for the groundwater sampling activities are included in Appendix L.

5.6.4.1 PCE

Historical PCE concentrations exceeding the AWQS of 5 µg/L are shown in Table 16 (Figure 2). These wells that had PCE detections are located in the Central and East Plumes.

Groundwater quality data collected since 2013 (Table 17) indicates that there are two distinct PCE plumes (Figures 33, 34, 35 and 36). One is in the southeastern portion of the Central Plume, and the other is east of 35th Avenue (East Plume). PCE concentrations exceeded the AWQS of 5 µg/L in every groundwater sample collected during the 2013 to 2016 sampling events from wells

WCP-64, -205, -208S and -213. Monitoring wells WCP-208S and WCP-213 exhibited the highest concentrations, with WCP-208S at 310 µg/L and WCP-213 at 250 µg/L. PCE concentrations exceeding the AWQS have also been reported in samples collected from wells WCP-27, -207, -210, -214 and TRIAD-12, with concentrations above the AWQS ranging from 5.1 to 8.66 µg/L. Wells that previously exhibited PCE above the AWQS but did not during the 2013 to 2016 sampling include wells WCP-26 and WCP-215. PCE was detected below the AWQS in some or all samples from wells WCP-13M, -25, -26, -59, -206, -209, -211, -212, -215, -217, -218, -226, -228, -229, DJM-13, TRIAD-11, TRIAD-13,TRIAD-14, and TRIAD-15. PCE did not exceed the laboratory reporting limit in any groundwater sample collected from wells WCP-60, -61, -62, -63M, -68s, -69s, -208M, -216, -219, -225, , -230, -230M, -231, -232, -233, -234, -241, , TRIAD-10.

5.6.4.2 TCE

Historical TCE concentrations greater than the AWQS of 5 µg/L are shown in Table 16.

Groundwater quality data since 2013 (Table 17) indicate that there are two distinct TCE plumes (Figures 37, 38, 39 and 40). One is the Central Plume and appears to be centered on the former Pyramid Industries facility. The second is the West Plume, which depicts elevated concentrations near the north side of the former Precise/Paraflex and Gilspur Exhibits properties at monitoring wells WCP-215 and WCP-230. TCE concentrations exceeded the AWQS of 5 µg/L in every groundwater sample collected during the 2013 to 2016 sampling events from wells WCP-25, -26, -27, -64, -206, -207, -209, -210, -212, -214, -215, -225, -230, -234, TRIAD-12, TRIAD-14 and TRIAD-15. The highest reported TCE concentrations were 199 µg/L in well WCP-214 and 134 µg/L in well WCP-230. TCE concentrations exceeding the AWQS have also been reported in wells WCP-59, -211, -219, TRIAD-11 and TRIAD-13, with concentrations above the AWQS ranging from 5.1 to 24.9 µg/L. TCE concentrations below the AWQS that have been detected in some or all samples collected include wells WCP-13M,-60, -61, -62, -68s, -205, -208s, -213, -218, -226, -228, -229, -230M, -231, DJM-13 and TRIAD-10. TCE did not exceed the laboratory reporting limit in any groundwater sample collected from wells WCP-13M, -63M, -69s, -208M, -216, -217, , -232, -233 and -241.

5.6.4.3 1,1-DCE

Historical 1,1-DCE groundwater results through 2008 generally mirrored those for TCE, Groundwater quality data since 2013 have indicated that 1,1-DCE concentrations are reported in the Central Plume, with elevated concentrations centered at monitoring wells WCP-214 at the former Pyramid Industries facility and TRIAD-15 at the former Triad Trucking Company, and in the West Plume, with elevated concentrations at monitoring wells WCP-225, WCP-230 and WCP-234 (Figures 41, 42, 43 and 44). The presence of 1,1-DCE is likely resulting from anaerobic biodegradation of TCE and/or TCA in the vicinity.

1,1-DCE concentrations continued to exceed the 7 µg/L AWQS in all groundwater samples collected during the 2013 to 2015 sampling events from monitoring wells WCP-25, -26, -27, -210, -214, -225, -230, -234 and TRIAD-15. The highest reported 1,1-DCE concentrations were 74.4 µg/L in well WCP-230 and 62 µg/L in well WCP-214. 1,1-DCE concentrations exceeded the AWQS intermittently in wells WCP-59, WCP-64 and TRIAD-14. 1,1-DCE concentrations below the AWQS have been reported in some or all samples in wells WCP-206, -207, -209, -212, -215, -231, DJM-13, TRIAD-10, TRIAD-11-, TRIAD-12 and TRIAD-13. 1,1-DCE did not exceed the laboratory reporting limit in any groundwater sample collected from wells WCP-13M, -60, -61, -62, -63M, -68s, -205, -208M, -208s, -211, -213, -216, -217, -218, -219, -226, -228, -229, -230M, -232, -233 and -241. 1,1-DCE was not detected in any groundwater samples collected from WCP-69s or monitoring wells east of 35th Avenue.

5.6.4.4 Other VOCs

In addition to the COCs, several other VOCs were detected during the monitoring program. The most common of those constituents was chloroform, which was reported in at least one sample collected from each of the shallow wells, with the exception of wells WCP-60, -68S, -217 and -233. Chloroform was detected in deep wells WCP-63M (September 2007) and WCP-208M (March 2006), but was not detected during the 2013 to 2015 sampling events. However, chloroform was detected in deep well WCP-230M in February 2016 (0.600 µg/L). None of the chloroform concentrations exceeded the applicable AWQS for total trihalomethanes of 100 µg/L. Benzene was detected above its AWQS of 5 µg/L in samples collected from WCP-25, WCP-59 and TRIAD-11. Other VOCs detected include: toluene, ethylbenzene, xylenes (total), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, MTBE, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2-dichloroethane, *cis*-1,2-DCE, carbon tetrachloride, dichlorobromomethane, dichlorodifluoromethane, trichlorofluromethane, acetone, 2-butanone, and methylene chloride. None of these additional VOCs exceeded their respective AWQS, where established.

5.6.4.5 Chromium

The historical chromium analytical results for 2001 through 2008 and the 2013 sampling by HGC for purged groundwater samples are included in Table 18. Total chromium and CrVI have been detected in at least one sample from every monitoring well, frequently exceeding the total chromium AWQS in wells WCP-26, WCP-27, WCP-64, WCP-206, WCP-210, WCP-214, WCP-227. WCP230, and the Triad Trucking Company wells (Figure 2).

The analytical results from the 2013 to 2016 sampling events indicated a similar pattern of total chromium and CrVI detections in the monitoring wells that is consistent with the results through 2008. Figures 45, 46, 47 and 48 depict the estimated location of the total chromium plume in July 2013, February 2014, February 2015, and November 2015, respectively. CrVI results are also presented on Figures 47 and 48, and are summarized in Table 19.

Groundwater quality data indicate that there is one distinct total chromium plume, defined by concentrations exceeding the AWQS, located in the southern portion of the Central Plume that appears to be centered near monitoring well WCP-27 on the former Magic Metals facility.

The LSGS wells WCP-13M, WCP-63M, and WCP-208M exhibit total chromium above the AQWS (Table 19). The ratio of CrVI to total Cr is lower in the LSGS wells than in the shallow wells, indicating that a greater proportion of CrIII is present. Because a source of a chromium release is not located in the vicinity of these LSGS wells and the adjacent SGWS wells are non-detect for chromium, the presence of chromium in these wells was suspect. Therefore, dedicated pumps were removed from the wells and groundwater samples were collected in November 2016 using Hydrosleeves™ so as not to disturb sediments in the wells (Geosyntec, 2017). Concentrations for these samples were lower than previously reported at concentrations less than the AWQS of 0.1 mg/L and indicate that chromium concentrations from earlier sampling may reflect a higher background concentration of total Cr in the LSGS.

5.6.4.6 Natural Attenuation Parameter Results

Results of the Locus' natural attenuation parameter sampling are summarized in Table 20. Results of HGC's 2015 sampling are summarized in Tables 21 and 22 and discussed further in Section 6.2.

5.6.4.7 PDB Sampling Results

Results of the PDB sampling are presented in Table 6. The PDB sampling conducted by Locus in 2007 indicated that VOC concentrations were generally within the range of those reported in purged groundwater samples, and there was little variation in contaminant concentrations with depth in most of the sampled monitoring wells. The PDB sampling conducted by HGC in 2015 at well WCP-230 gave similar results. The only exceptions to this pattern were evident in the results for monitoring wells WCP-27 and WCP-214 sampled in 2007.

TCE concentrations in well WCP-27 ranged from 230 to 260 µg/L, with an average concentration of 244 µg/L. Those concentrations are greater than the WCP-27 TCE purged sample concentrations, which range from 96 to 160 µg/L, and average 135 µg/L (Table 16). Results from well WCP-214 indicated the only concentration variation with depth seen in the PDB samples. Concentrations of PCE, TCE and 1,1-DCE were notably lower in the bottom sample collected at 162 ft bgs and the concentration of *cis*-1,2-DCE was elevated (Table 6). This pattern indicates that reductive dechlorination of TCE to *cis*-1,2-DCE was occurring in this depth interval at the time of sampling. Data do not indicate why this was occurring at this location.

6. DATA EVALUATION

6.1 Groundwater Flow

Under current hydraulic conditions, represented by the 4th quarter 2015 data, groundwater flow across the Site is generally north to south (Figure 49). This pattern would not be expected to change unless substantial pumping activity in the area alters hydraulic gradients.

6.1.1 Flow Velocities

Average linear groundwater flow velocities in each plume area were estimated using the hydraulic conductivities obtained from the slug test analyses (Section 5.4.2) and from hydraulic gradients calculated from Site water levels using the 4th quarter 2015 data. Because the hydraulic conductivity estimates represent values vertically averaged over the measured saturated thicknesses of the wells, the calculated travel times also represent values averaged over the saturated thicknesses.

Figure 49 is a contour map of water level data from the 4th quarter of 2015 indicating flow paths in each plume area. The general direction of groundwater flow inferred from the water level contours near the tested wells is to the south-southwest.

Table 23 provides the average linear groundwater flow velocities in the vicinities of the tested wells based on hydraulic conductivity estimates and hydraulic gradients calculated from water levels shown on Figure 49. Hydraulic conductivities shown in Table 23 are geometric means for KGS and for Bouwer-Rice estimates in each of the plume areas that were derived from automatically logged data (and from hand-collected data for one well in the East Plume). An effective porosity of 25 percent was used in the calculations. The green lines in Figure 49 indicate the positions and lengths over which the hydraulic gradients were calculated.

The calculated average linear velocities range between approximately 28 to 47 feet per year (ft/yr) in the East Plume, 19 to 115 ft/yr in the Central Plume and 1.1 to 17 ft/yr in the West Plume using pathlines and hydraulic gradients from Figure 49.

6.2 Groundwater Geochemical Conditions

Groundwater pH across the Site has ranged from 6.6 to 8.8 (Table 7) and indicate generally circumneutral to slightly alkaline conditions with an average pH of 7.45. Measured oxidation-reduction potentials have ranged from -320.8 to +643 mV (Tables 7 and 20 through 22) and are largely correlated with dissolved oxygen concentrations. In general, groundwater conditions at the Site have been strongly oxidizing. Strongly negative (reducing) potentials are associated with two monitoring wells: Triad-12 for the November 2015 sampling event and WCP-208M since February 2015.

Groundwater at the Site is generally oxic, according to the classification schema of McMahon and Chapelle (2008), with measured dissolved oxygen concentrations across the Site predominantly greater than 0.5 mg/L (Figure 50). Oxic conditions in groundwater appear to have been prevalent historically (Table 7 and 20 through 22). The only exceptions to the general pattern are the anoxic conditions for monitoring wells WCP-63M and Triad-12 in the Central Plume and WCP-208M in the East Plume for the November 2015 sampling event, which appear to reflect notable changes from previous sampling results. Concentrations of dissolved organic carbon in groundwater are uniformly low across the Site, generally less than 1 mg/L, with the exception of WCP-208M which showed a concentration of 31.3 mg/L (Table 21). This is consistent with the generally oxic conditions and reflects a general lack of reduced organic matter to drive microbial respiration processes.

Concentrations of sulfate (Figure 51) and nitrate (Figure 52) in shallow groundwater vary considerably across the Site and do not show any evident spatial pattern that can be related to microbial respiration processes. Sulfate concentrations at the Site range from 37.8 to 228 mg/L and appear relatively consistent for a given location (Table 21). Nitrate as nitrogen concentrations range from 0.112 to 21.6 mg/L and also appear relatively consistent for a given location (Table 21), with the exception of Triad-12 where the concentrations changed from 11.7 mg/L in January 2015 to 0.112 mg/L in November 2015. The nitrate as nitrogen concentrations at the majority of locations exceed the AWQS of 10 mg/L, but appear to reflect background concentrations in the aquifer unrelated to the Site.

There is little evidence for significant iron reduction or sulfate reduction occurring at the Site. Ferrous iron concentrations in shallow groundwater are not detectable for the majority of locations across the Site (Figure 53), consistent with the overall oxic character of the groundwater, with concentrations ranging up to 0.18 mg/L at scattered locations (Table 21) indicating that iron-reducing conditions are localized in the aquifer. A ferrous iron concentration of 0.480 mg/L was found in monitoring well WCP-208M, indicating iron reduction that is consistent with the anoxic character and associated relatively elevated dissolved organic carbon concentration (Table 21). Sulfide concentrations range from 0.013 to 0.943 mg/L (Table 21). Low levels of sulfide are widespread across the Site (Figure 54), indicating that some sulfate reduction is occurring, but most sulfide concentrations are less than 0.1 mg/L and this, combined with the other associated redox parameters, suggests that sulfate-reducing conditions likely are generally restricted to localized intervals in the aquifer. Notable sulfide concentrations ranging from 0.145 to 0.241 mg/L are associated with monitoring wells Triad-11, -12 and -13 where the localized presence of residual petroleum hydrocarbons likely provides a source of organic carbon.

Methane is not detected in the downgradient potions of the Central and East Plumes, with the exception of monitoring well WCP-226 (8.05 µg/L), at the downgradient edge of the East Plume (Figure 55). Methane concentrations in shallow groundwater ranging from 11.8 to 182 µg/L (Table 21) are present in the upgradient portions of the Central and East Plumes (Figure 55). Notable concentrations of methane were present in monitoring wells Triad-12 and WCP-208M; both wells reflect anoxic conditions. The occurrence of methane, which reflects strongly reducing methanogenic conditions, in oxic groundwater can be interpreted as representing the mixing of groundwater with different redox characteristics during sampling due to the relatively long screened intervals of the monitoring wells.

Concentrations of alkalinity (as $CaCO_3$) in shallow groundwater vary considerably, ranging from 125 to 520 mg/L across the Site (Figure 56). The observed variations are not clearly linked to microbial respiration since relatively elevated concentrations are present in apparent background locations (e.g., WCP-233) as well as locations lacking other indicators of microbial respiration processes (e.g., WCP-229).

A notable change in geochemical conditions occurred in monitoring well Triad-12 between the February 2015 and November 2015 sampling events (Table 21). This change is less evident in the other monitoring wells at the Triad Trucking facility, but is associated with the observed decline in water levels that formed a groundwater depression at the facility. The observed geochemical changes are indicative of a significant increase in biodegradation of petroleum hydrocarbons. Additionally, the relatively depleted dissolved oxygen concentration and associated other indicator parameters at monitoring well WCP-25 (Table 21) suggest that mixed oxic-anoxic conditions may be present at the former Osborn Products facility in the Central Plume area.

Relatively elevated chloride concentrations can be used as an indicator of degradation of chlorinated organic compounds in cases where background chloride concentrations are low. However, chloride concentrations in groundwater at the Site range from 106 to 487 mg/L (Table 21), with the exception of an anomalously low value of 20.6 mg/L in monitoring well WCP-233. Chloride concentrations vary considerably across the Site (Figure 57) and relatively elevated concentrations are associated with monitoring wells that are not impacted by chlorinated ethenes, including upgradient locations. Additionally, chloride concentrations at the Site are several orders of magnitude higher than chlorinated ethene concentrations and any contribution of chloride from degradation would be masked by the ambient chloride concentrations; therefore chloride does not provided an indicator for degradation of the chlorinated ethenes.

The presence of naturally occurring reductants in the aquifer is potentially important for attenuation of contaminants such as chlorinated ethenes and hexavalent chromium (CrVI). Chlorinated ethenes can undergo abiotic dechlorination reactions with reduced iron minerals (e.g., Butler and Hayes, 1999; Lee and Batchelor, 2002a; 2002b) and CrVI can be reduced to the relatively immobile CrIII form. There is no specific information available for the Site regarding characterization of aquifer materials, with the exception of a few organic carbon measurements from scattered locations (Appendix F). However, the presence of detectable ferrous iron and sulfide in groundwater samples suggests that the potential for formation of iron sulfides and other reduced iron minerals is likely in parts of the aquifer in the Central and East Plumes.

6.3 Chlorinated Ethenes

The behavior of chlorinated ethenes in groundwater is variable and depends strongly on geochemical conditions in the aquifer. Natural attenuation of chlorinated ethenes in groundwater involves physical, chemical or biological processes that act to reduce solute concentrations and mass in the aquifer, including dispersive (mixing) processes, sorption to organic carbon in the aquifer matrix, and microbial and abiotic transformation/degradation mechanisms.

The transformation or degradation pathway(s) and rate(s) for the chlorinated ethenes depend strongly on redox conditions in the groundwater. Microbial reductive dechlorination takes place under anaerobic conditions and the classic chlorinated ethene transformation sequence (PCE → TCE → *cis*-1,2-DCE → vinyl chloride → ethene) is well established (Bradley, 2000; 2003). Additionally, *cis*-1,2-DCE and vinyl chloride can undergo aerobic biodegradation (Mattes et al., 2010) which can also occur under hypoxic and nominally anoxic conditions where dissolved oxygen is present at low concentrations (Bradley and Chapelle, 2011).

The estimated threshold amount of organic carbon in aquifer sediments needed to support reductive dechlorination in groundwater is approximately 1,000 to 2,000 mg/kg of TOC (Chapelle *et al.*, 2012). Comparatively few measurements of organic carbon content in the alluvial sediments are available from a few widely scattered locations at the Site (Appendix F). Most of the samples are from depths above the current (2015) water table. Reported TOC values for samples above the current water table range from 0.1 to 0.4% (1,000 to 4,000 mg/kg) and the majority of the sample results were equal to or less than the detection limit of 0.1%. TOC results for all samples from depths below the current water were reported as "none detectable" by the Walkley-Black method, although the detection limit was not specified. This suggests that organic carbon contents in the aquifer at the Site are generally inadequate to support significant microbial reductive dechlorination, although the process can occur in intervals with locally elevated organic carbon content.

The presence of 1,1-DCE in the western and central plume areas is most likely due to abiotic transformation of 1,1,1-trichloroethane (1,1,1-TCA) since 1,1-DCE has not been commonly used directly as a solvent or component of industrial processes. 1,1,1-TCA likely was used in a vapor degreaser at the former Precise/Paraflex facility in the West Plume where it was also reported in soil vapor samples and 1,1,1-TCA was reported in soil vapor samples from the former Osborn Products facility in the Central Plume.

1,1,1-TCA in water can rapidly undergo abiotic transformations through dehydrohalogenation to produce 1,1-DCE and through hydrolysis to produce acetate; these products are formed in a roughly 1:4 ratio (Haag & Mill, 1988; Cline & Delfino, 1989; Jeffers *et al*., 1989). The reactions are temperature-dependent and ambient groundwater temperatures for the Site range from 20.8 to 37.6°C with a mean of 27.9 °C (Table 7). The 1,1,1-TCA transformation rate calculated using the Arrhenius equation for temperatures of 20 to 30°C ranges from 0.33 to 1.6 per year (Table 24) with corresponding half-lives of 2.1 to 0.42 years. These rates are sufficient to have transformed most, if not all, of any dissolved 1,1,1-TCA in a relatively short period of time. The production of 1,1-DCE from the reductive dechlorination of TCE is possible, but highly unlikely since this would require the presence of a particular microbial strain, not normally encountered, capable of this reaction. Microbial testing has not been completed.

The DCE isomers can be microbially transformed under strongly reducing (methanogenic) conditions to vinyl chloride and ethene through reductive dechlorination, but evidence for such conditions at the Site is generally lacking. The complete lack of detections for vinyl chloride at the Site suggests that any reductive dechlorination of chlorinated ethenes that is occurring has "stalled" at *cis*-1,2-DCE, likely due to a general lack of organic carbon in the aquifer to serve as an electron donor to drive further reductive dechlorination. Further oxidative degradation of *cis*-1,2-DCE is likely occurring, based on the literature, but potential degradation of 1,1-DCE is less certain.

In general, the available data indicate that reductive dechlorination is not a significant process at the Site under current conditions.

6.3.1 West Plume

Chlorinated ethene COCs in the West Plume are TCE and 1,1-DCE. Groundwater conditions are oxic with trace levels of sulfide present suggesting that sulfate-reducing conditions occur in localized intervals in the aquifer. There is no evidence for iron-reduction within the West Plume indicating that the potential for generation of reduced iron minerals that might contribute to abiotic degradation of chlorinated ethenes is low. The presence of *cis*-1,2-DCE in monitoring wells WCP-230, WCP-215 and WCP-234 (Tables 16 and 17) suggests that some reductive dechlorination of TCE is occurring or has occurred in the vicinity of these locations. However, *cis*-1,2-DCE concentrations are currently at trace levels indicating that reductive dechlorination is not a significant process.

The relative spatial distributions of concentrations for TCE (Figures 37-40) and 1,1-DCE (Figures 41-44) in the West Plume have remained fairly consistent. The highest reported concentrations for both of the COCs occur in monitoring well WCP-230, located northwest of the assumed source area at the former Precise/Paraflex facility. There is uncertainty associated with the analysis due to the variability in groundwater flow direction over time (Appendix B) and likely variation in groundwater flow velocities in response to water level changes.

The increasing concentration trend for TCE observed in monitoring well WCP-230 (Appendix O) indicates an additional contribution from a potential source upgradient or in the immediate vicinity of this well. Given the relatively low groundwater flow velocities estimated for the West Plume, the latter seems more likely. The lack of detections for COCs in deep monitoring well WCP-230M (Table 17) indicate that no vertical migration of the COC solute plumes appears to have occurred at this location.

Concentration time series of CVOCs for monitoring wells within the West Plume (Appendix M) generally show varying behavior between locations and for individual constituents in a given well; both increasing and decreasing trends are evident. Concentration variations for the COCs shown in the time series plots (Appendix M) may be a reflection of the impact of water level changes (Figure 28), particularly those since 2013, rather than substantive indications of solute attenuation. In addition, the relatively low estimated groundwater flow velocities associated with the West Plume of 1.1 to 17 ft/yr (Table 23) suggest the potential impact of groundwater flow direction changes are likely to be minimal.

The apparent overall stability of the West Plume may be a reflection of the relatively low groundwater flow velocities that limit the rate of contaminant migration, particularly in the southern (downgradient) portion of the solute plumes.

6.3.2 Central Plume

Chlorinated ethene COCs in the Central Plume are present as overlapping solute plumes of PCE, TCE and 1,1-DCE from multiple potential sources. There is uncertainty regarding the timing of various releases, and the distribution of contaminant concentrations in the Central Plume has likely been influenced by changes in groundwater flow directions (Appendix B) and velocities that have occurred over time at the Site and have produced the current configuration of the chlorinated ethene solute plumes. Minor variations in groundwater flow through the Central Plume since the lining of the SRP Grand Canal (Figures 29 through 32) does not appear to affect CVOC concentrations as indicated on the associated concentration time series plots for chlorinated ethenes in the Central Plume (Appendix M). Estimated groundwater flow velocities associated with the Central Plume range over approximately an order of magnitude, from 19 ft/yr in the southern part to 115 ft/yr in the northern part (Table 23).

TCE is the predominant COC in the Central Plume based on the general magnitude and extent of contamination in groundwater. The southern extent of the plume has not been fully defined but it appears to be mingling with the plume at the West Osborn Complex WQARF site to the south. While there is a general indication of decreasing TCE concentrations for many monitoring wells within the solute plume, variation is evident in the concentration time series for individual monitoring wells (Appendix M) and there is no consistent pattern that can be related to recent information on hydrogeology.

There is evidence that reductive dechlorination of TCE has been occurring in the Central Plume at wells WCP-25 through WCP-27, WCP 214, WCP-227 and TRIAD-12 over the course of groundwater monitoring as indicated by the presence of *cis*-1,2-DCE in these monitoring wells. However, a decrease in TCE concentration with associated increase in *cis*-1,2-DCE concentration, indicative of reductive dechlorination, is only evident over the period 2007 through 2008 in the concentration time series for monitoring well WCP-214 (Appendix M). PDB sampling at that time indicated that *cis*-1,2-DCE was predominantly associated with one depth interval in the well (Table 6), suggesting that reductive dechlorination was associated with a localized interval with relatively high organic carbon content.

Releases of both PCE and TCE have apparently occurred at various locations in the Central Plume and, since both constituents may be part of the source, the occurrence and concentrations of TCE cannot be used as an indicator of the reductive dechlorination of PCE. Additionally, the concentrations of TCE are greater in monitoring wells where it co-occurs with PCE, indicating that any TCE produced by reductive dechlorination of PCE would be masked. There is no substantive evidence for degradation of PCE in the area of the defined solute plume located in the southern portion of the Central Plume based on evaluation of the concentration time series (Appendix M). The relative spatial distribution of concentrations for PCE (Figures 33-36) in the Central Plume has remained fairly consistent since 2013. However, based on the estimated travel time between upgradient and downgradient wells, any migration of PCE may not be reflected in the available data.

Behavior of 1,1-DCE in the Central Plume, as reflected in the concentration time series (Appendix M), appears broadly similar to TCE. 1,1-DCE concentrations generally appear to be decreasing or stable over time.

The apparent overall stability of the Central Plume may be a reflection of the relatively low groundwater flow velocities that limit the rate of contaminant migration, particularly in the southern (downgradient) portion of the solute plumes.

6.3.3 East Plume

The East Plume is dominated by PCE as the COC. Only trace amounts of TCE are reported from monitoring wells within the solute plume and no *cis*-1,2-DCE has been reported (Tables 16 and 17). PDB sampling of monitoring well WCP-213 in 2007 (Table 6) did not indicate any substantive changes in chlorinated ethene concentrations with depth and provided no indication of reductive dechlorination of PCE. Combined with the geochemical data indicating oxic conditions, this suggests that no reductive dechlorination of PCE would be expected in shallow groundwater of the East Plume. Therefore, the likely attenuation mechanisms would be hydrodynamic dispersion and solute retardation through sorption to organic carbon in the aquifer matrix. Concentration time series of PCE for monitoring wells within the East Plume (Appendix M) are generally consistent with a developing solute plume with a source in the vicinity of monitoring well WCP-213.

The concentration time series profile for PCE in monitoring well WCP-205 (Appendix M), located in the downgradient part of the East Plume, generally resembles a breakthrough curve for a solute undergoing hydrodynamic dispersion, with the center of mass concentration for the contaminant front (about 95 µg/L) occurring in late 2007. Assuming an average groundwater flow velocity of 35 ft/yr and a flow path distance of about 850 ft, the travel time from the vicinity of monitoring well WCP-213 to WCP-205 is approximately 24 years. This suggests that a release in the vicinity of monitoring well WCP-213 likely may have occurred no later than about 1983. Accounting for solute retardation in the calculation, with a retardation factor for PCE of 1.5, yields a travel time of about 36 years, suggesting that a release may have occurred as early as 1971. These calculations are based on the assumption of a uniform groundwater flow field. Therefore, the estimates and timeframes are subject to uncertainty since groundwater flow directions have changed over this period (Appendix B) and groundwater velocities have likely varied as well in response to water level changes.

With no evident attenuation mechanism to remove PCE mass and stabilize the solute plume, the East Plume is expected to continue to migrate southward with groundwater flow and mingle with the West Osborn Complex Site plume (a separately identified WQARF site). The toe of the PCE solute plume (5 µg/L contour) currently is located between monitoring well WCP-205 and WCP-226.

6.4 Chromium

Chromium can be present in either the trivalent (CrIII) or hexavalent (CrVI) oxidation state in the environment. CrIII is relatively insoluble and readily forms mineral precipitates, while CrVI is soluble and mobile in groundwater. Measurements of total chromium include both valence states. Both total and CrVI at concentrations less than the AWQS of 0.1 mg/L occur in groundwater across the Site (Figures 45-48), including in monitoring wells located in apparent background areas, and CrVI is the predominant form in the shallow aquifer. The chromium plume in shallow groundwater at the Site is defined by total chromium concentrations greater than the AWQS and is located in the southern portion of the Central Plume (Figures 45-48).

The persistence and mobility of CrVI in groundwater is favored by oxic conditions with neutral to alkaline pH and moderate to high concentrations of other anions, such as sulfate (Kent *et al.*, 2007). These are the predominant conditions currently observed in groundwater at the Site (Figures 50 through 57). Above a pH of 6, the dominant aqueous CrVI species is the chromate ion (CrO_4^{2-}); soluble complexes with calcium or ferric iron are also possible. CrVI can also form soluble compounds with calcium, magnesium, sodium, potassium and barium if they are present in adequate concentrations.

Natural attenuation of CrVI in groundwater can occur through two primary mechanisms that act to immobilize chromium: adsorption reactions and reduction of CrVI to the trivalent form which forms mineral precipitates. Adsorption of chromate to mineral surfaces, such as iron oxide coatings in the aquifer matrix, is typically favored at lower pH and when concentrations of other anions competing for adsorption sites (e.g. phosphate, arsenate, sulfate, silicate, carbonate) are low (Leckie *et al.*, 1984; Zachara *et al.*, 1987; Dzombak and Morel, 1990; Davis and Kent, 1990; van Geen *et al.*, 1994). Reduction of CrVI to the trivalent oxidation state, aqueous concentrations of which are limited by the low solubility of CrIII hydroxide [$Cr(OH)_3$] (Rai *et al.*, 1987), generally requires iron-reducing or sulfate-reducing conditions. Reduction of CrVI requires a reductant such as organic carbon, sulfide or ferrous iron, and results in the precipitation of insoluble CrIII oxyhydroxides or sulfides (Stollenwerk and Grove, 1985; Eary and Rai, 1988; Buerge and Hug, 1997; Pettine *et al.*, 1998), or the co-precipitation of CrIII as a trace component in iron or manganese oxyhydroxides or sulfides (Sass and Rai, 1987; Palmer and Puls, 1994).

The natural attenuation of CrVI is sensitive to geochemical conditions in the aquifer, particularly redox conditions and pH. Changes in conditions that act to destabilize sorbents such as iron oxides or oxidize CrIII can remobilize chromium in the hexavalent form.

Concentration time-series for total chromium and CrVI are included in Appendix N. There is considerable disparity in the concentration profiles for the various wells and no evident pattern to the variations in concentration that can be readily interpreted based on the available information. Overall, chromium concentrations appear to have decreased Site-wide and concentration variations for total and CrVI shown in some of the time series plots (Appendix N) may be a reflection of the impact of water level changes (Figure 28).

Geochemical modeling using the U.S. Geological Survey's PHREEQC software (Version 3; Parkhurst and Appelo, 2013) was conducted to evaluate the groundwater geochemistry in selected wells associated with the chromium solute plume based on observed geochemical conditions from the November 2015 monitoring event (Tables 17 and 22). The MINTEQ thermodynamic database (Allison *et al*., 1990) included with PHREEQC was used because it is an internally consistent database that includes $Cr(OH)_3$ and barium chromate ($BaCrO_{4)}$ as solid phases. The PHREEQC output files are included in Appendix O. Reported total chromium concentrations were used as input to allow the program to speciate chromium based on geochemical conditions. In some cases, analytical results for CrVI exceeded concentrations reported for total chromium; in this case, the higher value was input as the total chromium concentration.

Geochemical modeling was conducted for deep monitoring well WCP-13M, and for shallow monitoring wells WCP-26, WCP-27 and WCP-207. These wells are located upgradient of, within and downgradient of the defined chromium solute plume. While CrVI constituted less than 2% of total chromium in WCP-13M, CrVI concentrations measured in the shallow monitoring wells were roughly equivalent to or greater than the total chromium concentrations measured. These results are consistent with purge parameters, which indicate that conditions in the shallow monitoring wells are more oxic than in WCP-13M.

The geochemical modeling results indicate that several CrIII oxyhydroxide solid phases are supersaturated in deep monitoring well WCP-13M under the observed conditions, including $Cr(OH_3)$. The results also showed aqueous CrIII oxyhydroxide species to be the dominant form of aqueous chromium in well WCP-13M. The results for shallow monitoring wells WCP-26, WCP-27 and WCP-207 indicate that CrIII oxyhydroxide species are the predominant dissolved chromium species, but that significantly more chromium is present as chromate (hexavalent) in these wells than in well WCP-13M. The ratio of calculated aqueous hexavalent species molality to aqueous trivalent species molality is 0.003 in WCP-13M, 0.025 in WCP-26, 1.49 in WCP-27 and 3.09 in WCP-207. This result is consistent with lower calculated CrIII solid phase saturation indices for the shallow wells. WCP-207 was the only well in which $Cr(OH_3)$ was calculated to be under saturated.

The data suggest that both background chromium and anthropogenic chromium related to releases at the Site exists in the aquifer. The available data are not sufficient to quantify the degree of natural versus anthropogenic chromium in the groundwater. The CrVI form predominates in the shallow aquifer, which is consistent with the prevailing geochemical conditions. The available data do not support a determination of whether the background CrVI is the result of naturally occurring chromium in the aquifer system. As discussed earlier, the data suggest a higher background concentration of CrIII in the LSGS.

7. LAND AND WATER USE EVALUATION

This evaluation examines information regarding the current and reasonably foreseeable future uses of land or waters that have been or could be impacted by a contaminant release, pursuant to A.A.C. R18-16-406 (D). Reasonably foreseeable future land uses are those that are likely to occur at the Site. Reasonably foreseeable future uses of water are those that are likely to occur within 100 years, unless a longer time period is shown to be reasonable based on site-specific circumstances.

Land and water use information was obtained from publicly available environmental and municipal databases and from reports and planning documents generated by relevant municipalities, government agencies, and utilities. Additionally, questionnaires were sent to relevant entities in order to obtain current information and responses and are included as Appendix P.

7.1 Land Uses

The entire Site is located within the COP. Arizona state law requires every city to have a General Plan establishing a policy for the city's land development. The COP General Plan includes goals, policies, and recommendations to guide land use and neighborhood development for 10 to 20 years and beyond. Most of the discussion of land development and use centers on the General Plan (COP Planning and Development, 2002) and its 2015 update, which is underway (COP Planning and Development, 2015a).

As described in the General Plan, the COP is comprised of 15 "urban villages." The Site is located primarily in the eastern portion of the Maryvale Urban Village (COP Planning and Development, 2015b&c). Development in the area occurs consistent with zoning laws and must go through a site-planning review and permitting process. The primary land use within the estimated Site is industrial (79%), with small proportions of single and multiple family residential (9%) and commercial (12%) land use (COP Planning and Development, 2011). Industry was originally attracted to the area by the Grand Avenue and the Atchison Topeka and Santa Fe rail corridors, and experienced a period of rapid growth in the mid-1900s. Commercial properties are concentrated along major streets, while residential areas are primarily concentrated west of 43rd Avenue and south of the Grand Canal west of 35th Avenue.

The COP created the West Phoenix Revitalization Area (WPRA) in 2004 with the intention of improving living conditions in 52 square miles in West Phoenix, including the entire WCP complex of WQARF sites, by enhancing public safety, promoting economic development, and investing in cultural resources and educational opportunities for the West Phoenix community. The WPRA has been prioritized as a target area for EPA Brownfields Program assistance in redeveloping contaminated former industrial properties (ESI Corporation, 2008). The Isaac Redevelopment Area is located about 1.3 miles southeast of the Site and has also been targeted for redevelopment to reverse urban blight (COP Planning and Development, 1998).

Multiple businesses in the Site historically pursued industrial activities, including metal plating, metal casting, machine and tool manufacturing, furniture manufacturing, and automobile salvage and repair. The current zoning designations for the properties under investigation are: A-2 Industrial (Saban's Rent-A-Car, former Triad Trucking Company, former Osborn Products Company, former Giltspur Exhibits, Redburn Tire Company, former Southwest Metal Industries, Diehl Equipment Company, former DJM Construction Company, and former Pyramid Industries); A-1 Light Industrial (former Precise/Paraflex Companies, former Giltspur Exhibits, Redburn Tire Company, former DJM Construction Company, former Magic Metals Plating Company, former Pyramid Industries, and West Osborn Complex); Industrial Park (West Osborn Complex); and C-1 Commercial-Neighborhood Retail (West Osborn Complex)(COP Planning and Development, 2011).

Land use overlying the West Plume consists of 71% industrial and 29% commercial. Land use in the East Plume is 95% industrial and 5% commercial. Land use within the Central Plume is 86% industrial, 11% residential and 3% commercial.

The Maryvale Village Planning Committee meets regularly to accept and review requests for zoning changes within their Urban Village. The COP has indicated that no zoning changes are currently anticipated within the Site boundary (Zima et al., 2014). Requests for zoning changes by property owners must go through a public hearing process and be approved by the COP Planning Commission and City Council prior to finalization (COP, 2015).

7.2 Potential Sensitive Receptors

Fifteen public, charter and private schools are located within one mile of the Site (Table 25) (Figure 58). Five of these schools are located within 0.5 mile of the Site: Arizona Collegiate Charter High School, Desiderate High School, Pueblo Del Sol School, Alhambra Traditional School, and Pan American Charter School.

Additional potential sensitive receptors within one mile of the Site (Figure 58) include: the medical facilities Iora Primary Care (0.25 miles east), Concentra Urgent Care West (0.4 miles south), Arizona Healthy Clinic LLC (0.6 miles northwest), Fresenius Medical Care Maryvale

(0.75 miles northwest); the childcare facilities Children's Campus (0.9 miles southwest); and A Kiddie's Kingdom (0.9 miles south).

None of these receptors is located in the immediate area of identified soil vapor impacts. All are served by municipal water.

7.3 Water Use

The Site lies within the Phoenix Active Management Area (AMA) (ADWR, 2013). The Phoenix AMA was created by the Arizona Groundwater Management Code, passed in 1980, and covers approximately 5,646 square miles in central Arizona. All groundwater withdrawn from any AMA must occur under a groundwater right or permit, unless groundwater is being withdrawn from an exempt well, i.e. a well with a maximum pump capacity of 35 gpm. Exempt wells may be used to withdraw groundwater for non-irrigation purposes and are generally used for domestic purposes. Non-exempt wells have a pump capacity greater than 35 gpm and are associated with one of the following types of rights or permits: grandfathered rights, service area rights, and withdrawal permits. All exempt, non-exempt and monitoring wells must be registered with the ADWR. These well locations are depicted on Figure 59 and are listed on Table 26.

Surface water in the vicinity of the Site is provided by SRP for irrigation uses (Martinez, 2015). SRP provides surface water via deliveries from the Arizona Canal and Grand Canal through several lateral canals in the area. In the vicinity of 35th and 39th Avenues, Laterals 1-15.0-62 and 1-15.0-64 deliver water from the Arizona Canal to the south bank of the Grand Canal for irrigation uses at several schools. Near 43rd Avenue, Lateral 1-16.0-49 delivers water from the Arizona Canal to Orme Park at W. Osborn Road and N. 47th Avenue (SRP, 2015c). The lateral canals include aboveground and underground sections. A section of the Grand Canal is in the south portion of the Site and was completely concrete-lined in the vicinity of the Site by 2004 (ADEQ, 2004).

7.3.1 City of Phoenix

The COP receives water from four major sources:

1. SRP;
2. Colorado River via the Central Arizona Project (CAP);
3. Groundwater from COP potable water supply wells; and
4. Reclaimed water.

During normal supply years, approximately 50% of the COP water supply comes from SRP, 44 percent from the CAP, and approximately 3% each from groundwater pumping and reclaimed water. When SRP and/or the CAP water supplies are reduced, the COP supplements water supplies with groundwater pumped from COP water supply wells (COP Water Services Department, 2011).

7.3.1.1 Current Use

The COP has abandoned or discontinued use of 20 of its public supply wells due to the presence of industrial solvents such as PCE and TCE (COP Water Services Department, 2011). This has resulted in a loss of approximately 23 million gallons per day of groundwater production. There are no operating COP wells located within the Site and COP wells Nos. 70, 71, 151, 152 and 68, located within one mile of the Site (Figure 59), are among the wells removed from public supply service by the COP due to industrial solvent contamination (Locus, 2005a). The nearest actively pumped COP public supply well is No. 77, located approximately 1.2 miles northeast of the Site.

7.3.1.2 Future Needs

The population of COP has increased by approximately 8% since 2002, but demand for water production has declined by approximately 16%. This is due to an approximately 25% decline in per-capita use over 15 years. Improved infrastructure, increased use of desert landscaping, fewer pools, and water rate increases have contributed to the per capita water use reduction. The COP expects less robust growth rates (compared to prior growth forecasts) and continued declines in per-capita demand that will likely result in relatively minor increases in overall system demand by mid-century. However, there are numerous factors associated with growth and consumption that cannot be fully predicted (COP Water Services Department, 2011).

Uncertainty also exists regarding water resources and the ability to meet current and future demands. The SRP and CAP supplies are dependent on rainfall and snow pack and can be limited during extended drought periods. If Colorado River surface flows decline due to climatic shifts (Christensen et al., 2004), allotment of CAP water for the COP may be reduced. SRP allotments could also be reduced if reservoir water levels drop substantially and groundwater pumping cannot compensate for the lack of surface water availability. As a buffer to potential surface water supply reductions, the COP has been recharging to underground storage or banking unused CAP allotments for future use. However, substantial increases in consumption coupled with severe reductions in surface water supplies could deplete these built reserves by 2020 (COP Water Services Department, 2011).

If extended drought conditions create a substantial shortage of surface water and demand increases beyond estimates, a maximum deficit of 165,000 acre-feet of water could be experienced by the COP in the latter part of the 50-year planning horizon. This water deficit creates deeper shortages than those observed in historical records but is considered reasonable. More extreme conditions are feasible and have been considered quantitatively by the COP. Managing water use can be accomplished by continuing to increase efficiency of water distribution, by curtailing demand, and through monetary incentives. These can be addressed through infrastructure improvements, conservation programs, drought management plans, and water pricing strategies (COP Water Services Department, 2011).

Besides obtaining additional surface water supplies, local groundwater is the most accessible alternative water source. The COP has access to more than 3.5 million acre-feet of groundwater in the Phoenix service area over a 100 year period. Currently the COP can produce 28 million gallons per day (MGD) or (15,000 to 20,000 acre-feet per year [AFY]), but only withdraws between 6,000 and 9,000 AFY. Pumping capacity has been lost in the past two decades due to aquifer contamination, including in the vicinity of the Site, and aging well conditions (COP Water Services Department, 2011).

Plans and funding to expand well capacity within the service area by rehabilitating older wells and developing new service area wells are underway (COP Water Services Department, 2011). The COP plans to develop 15 additional wells at a cost of $233 million. This will yield approximately 70,000 AFY. This increased yield would be allowable in any one year as long as the 100 year average usage does not exceed available groundwater and stored water credits. Recent well development has been focused in the northeast Phoenix area, but the COP has indicated it may consider the area near the Site for well development in the future. Therefore, the potential exists for the COP to install municipal wells within the Site or within one mile of the Site, though there are no current plans to do so (COP Water Services Department, 2011; Zima et al., 2014).

7.3.2 Salt River Project

As a water supplier, SRP delivers nearly one million AFY of water to the Phoenix area. In normal runoff years, most of the water is supplied from surface water stored in reservoirs in the Salt and Verde River Watersheds. However, in drier years, more groundwater must be pumped to supplement the surface water supply (Martinez, 2015). During extended periods of low runoff, groundwater can comprise nearly one third of the total SRP water supply. Typically, groundwater comprises approximately 15 percent of the total water supplied by SRP to municipal drinking water treatment plants. The groundwater contribution varies seasonally with the highest contribution occurring in March through August. Historically, there has been enough surface water to meet demand in only one out of every three years (COP Water Services Department, 2011; SRP, 1999).

7.3.2.1 Current Use

SRP operates and maintains one irrigation well (9.5E-7.7N) within the Site (Figure 59; Appendix K). In the most recent groundwater sample collected from SRP well 9.5E-7.7N in February 2015, PCE was detected above the AWQS at 7.1 µg/L, TCE was detected below the AWQS at 1.3 µg/L, and 1,1-DCE and total chromium were not detected above reporting limits (SRP, 2015a). SRP irrigation wells 10.5E-7.5N and 8.5E-7.5N are located within one mile of the Site (Figure 59). Groundwater quality data from these wells indicate that 10.5E-7.5N has never been impacted by Site COCs above AWQS, and total chromium has historically been detected above the AWQS in 8.5E-7.5N. In the most recent sample collected from 10.5E-7.5N in May 2011, PCE, TCE and 1,1-DCE were not detected above the reporting limit and total chromium was detected below the AWQS. In the most recent sample collected from 8.5E-7.5N in February 2015, PCE and TCE were detected below their respective AWQS at 0.9 and 2.3 µg/L, respectively, and 1,1-DCE and total chromium were not detected above the reporting limit (SRP, 2015b). Groundwater pumping at these wells has been intermittent in the recent past (Martinez, 2015; ADWR, 2015; SRP, 2015a).

7.3.2.2 Future Needs

Although recent use of the irrigation wells in and adjacent to the Site has been intermittent, SRP has no plans to eliminate any of these wells from their delivery system. Due to the increasing drought vulnerability of Phoenix and the stress that anticipated climate change will apply to surface water supplies, SRP expects to increase the groundwater proportion of its supply portfolio. To facilitate this, SRP has indicated that they intend to convert their irrigation wells in and adjacent to the Site to drinking water supply wells in the future, and may wish to install additional drinking water wells in the vicinity of the Site. As a result, while groundwater contamination at the Site does not currently impact the ability of SRP to meet the demands of its customers, it may begin to do so in the future (Martinez, 2015).

<u>7.3.3 Private Groundwater Use</u>

According to ADWR records, there are two non-exempt and two exempt privately-owned production wells within one mile of the Site. DS Waters of America, Inc., a bottled water supplier, operates two non-exempt production wells at its facility approximately 0.4 miles southeast of the Site at 3302 W. Earl Drive (Figure 59). One of these wells, ADWR No. 55-221831, was installed in 2013 to replace well ADWR No. 55-800680. Well ADWR No. 55-800680 was never abandoned and the two wells combined are permitted to produce no more than 754.89 AFY under Grandfathered Ground Water Rights 58-100542.0001, -102405.0003 and -111016.0003 (ADWR, 2015). Water produced by these wells is treated by reverse osmosis prior to bottling for commercial sale. DS Waters of America, Inc., estimates the lifespan of the new well to be 40 years and anticipates installing additional supply wells at its facility near the end of that time horizon (Swanson, 2014).

Exempt well MTP-1 (ADWR No. 55-618512) is associated with the Michigan Trailer Park (3140 W. Osborn Road), owned by D&R Enterprises, Inc., and located 0.2 miles southeast of the Site (Figure 59). The total depth of MTP-1 is approximately 400 ft. MTP-1 is used to supply the 150-pad mobile home park with water for domestic use. A 1999 sample from MTP-1 reported a nitrate concentration above AWQS but subsequent samples have been below AWQS for nitrate. Both PCE and TCE have been detected below their respective AWQS in MTP-1 (ADEQ, 2004). Exempt well ADWR No. 55-634633, owned by Theo Post, is located 0.6 miles north of the Site and is completed to a depth of 500 ft bgs (Figure 59). This well is upgradient of the Site and no other information is available for this well.

8. CONCEPTUAL SITE MODEL

8.1 Overview

Groundwater COCs in the shallow (water table) aquifer at the Site are TCE, PCE, 1,1-DCE and Chromium. Shallow groundwater is currently found at depths of approximately 130 to 140 ft bgs within the MFGS of the UAU.

Historical migration of COCs in the shallow groundwater has been impacted primarily by changes in shallow groundwater flow resulting from lining of the Grand Canal in 1998. Between 1992 and 1998, shallow groundwater monitoring indicated that flow in the shallow aquifer was generally away from unlined sections of the canal. To the north of the canal (within the Site), flow was generally to the north (varying from north-northwest to north-northeast); to the south of the canal (south of the Site), shallow groundwater flow was generally to the south (varying from south-southwest to south-southeast) as shown in the February 1996 groundwater elevation map presented in Appendix B. Seepage from the unlined canal therefore resulted in a shallow groundwater divide. Prior to 1992, shallow groundwater flow directions and hydraulic gradients at the Site cannot be reliably determined due to a lack of shallow groundwater monitoring data. Historical groundwater maps provided in Appendix B are reflective primarily of deeper, more regional groundwater flow. However, the unlined canal is likely to have exerted a similar influence on shallow groundwater flow prior to 1992.

After 1998, shallow groundwater gradients and flow directions at the Site began to change in response to lining of the canal. After lining, the primary flow direction changed from generally northerly to generally southerly, varying locally from southwest to southeast. By 2007, shallow groundwater flow was primarily to the south-southwest and was relatively unaffected by the canal. The magnitudes of hydraulic gradients were also generally reduced once the canal was lined. Dissolved shallow groundwater COCs that had previously migrated in a generally northerly direction presumably began to migrate in a generally southerly direction. In some cases it is possible that COCs that had migrated to the north from a particular source area could have subsequently migrated to the south, passing within the vicinity of the same source area. COC concentrations prior to the canal lining are expected to have been limited by the dilution resulting from canal recharge, assumed to be COC-free.

Shallow groundwater COC migration is also impacted by the rapid decline in shallow groundwater depths after lining of the canal. Shallow groundwater prior to 1998 occupied shallower, coarser-grained portions of the UAU, in particular the UCGS (see cross-sections in Figures 5-9). After about year 2000, shallow groundwater had dropped to levels generally below the coarser-grained materials, occupied primarily by silty and clayey sands. Shallow groundwater hydraulic gradients were also generally smaller in magnitude subsequent to canal lining. These changes reduced the expected rates of migration of shallow groundwater COCs.

Between 1952 and 1972, deeper groundwater flow at the Site was generally to the southwest or west-southwest (Appendix B). Deeper groundwater flow in the early to mid-1980s appears to have been generally west to west-northwest beneath the Site, changing to generally west-southwest by the late 1980s and continuing to the present. These changes in deeper groundwater flow were likely primarily due to changes in groundwater pumping from the nearby SRP irrigation wells.

Within the UAU, the vertical interaction between shallow groundwater and deeper (LSGS) groundwater across finer-grained materials (i.e., the MFGS) is also expected to have changed over time. Prior to the canal lining, vertical hydraulic gradients were likely greater and downward leakage potentially larger. Vertical hydraulic gradients based on measurements in May and June 2014 were approximately 0.19 ft/ft downward (HGC, 2014). Assuming that the vertical hydraulic conductivity of the MFGS varies from 0.01 ft/day to 0.3 ft/day (HSI Geotrans, 2000), downward leakage rates ranging from 65 gpm to 1,950 gpm are implied over the approximate 150-acre area of the shallow VOC plumes. Vertical interaction between shallow and deeper groundwater is also expected to have been locally enhanced by historical pumping of SRP wells 9.5E-7.7N and 10.5E-7.5N.

In addition, groundwater flow immediately to the east of the Site appears to be impacted by a geologic structure or fault generally coincident with Grand Avenue. Water level monitoring in May and June 2014 is consistent with a northwest-southeast trending structure or fault located between well WCP-233 and other monitoring wells that provides some degree of hydraulic isolation between groundwater east and west of the structure (HGC, 2014).

8.2 COC Plumes and Source Areas

COC plumes exceeding the AWQS include the West Plume (primarily TCE and 1,1-DCE); the Central Plume (PCE, TCE, 1-1,DCE and chromium); and the East Plume (primarily PCE) (Figure 60). 1,1-DCE is most likely to be the product of abiotic degradation (dehydrohalogenation) of 1,1,1-TCA.

Potential COC source areas that have been identified for the Central Plume, based on facility locations relative to groundwater flow direction and groundwater contamination, include former Pyramid Industries, former Triad Trucking Company, former Osborn Products Company, former Southwest Metal Industries, former Magic Metals and the former DJM Construction Company

(Figure 2). Based on its location and relatively low passive soil gas survey results, the Redburn Tire Company is unlikely to be a potential COC source area. Groundwater monitoring data since 1992 confirm that shallow groundwater COCs in the Central Plume could have originated from sources associated with the former Triad Trucking Company, former Osborn Products, former Southwest Metal, former Magic Metals and former DJM Construction Company. COCs reaching shallow groundwater would be expected to have migrated in a north to north-northeast direction prior to canal lining in 1998, then to the south-southwest once the canal was lined. Depending on the timing of the releases, COCs at some of the source locations could have migrated north-northeast from and subsequently back to the south-southwest into the vicinities of the same source areas.

Potential COC source areas identified for the West Plume include the former Precise /Paraflex and former Giltspur Exhibits. The majority of the West Plume is located west (and currently cross-gradient) of both former Precise/Paraflex and former Giltspur Exhibits facilities, although the eastern edge extends beneath these facilities (Figure 2). Former facilities located at 4001 West Indian School Road, or facilities formerly located in the vicinity of 4001 West Indian School Road, could have been a potential source area based on passive soil gas data (Figure D.14), soil gas data (Figure 21), and the relatively high and increasing TCE concentrations reported in monitoring well WCP-230. None of the other six facilities listed in Section 1.4.1 are likely to have contributed significant amounts of COCs to the West Plume based on soil gas, passive soil gas and groundwater data.

The shallow groundwater COC in the East Plume (PCE) is not likely to have originated from any of the potential sources identified in preceding paragraphs. Based on the passive soil gas sampling results and the in-well soil vapor sampling results (Sections 5.1.8 and 5.3; Appendix D -Figures D.22 and D.23), potential sources appear to be present in the vicinity of Clarendon and North 34th Avenue. A localized source area in this vicinity was confirmed with PCE results from soil gas samples collected during advancement of boring HCZ-SB1 (Table 3) at 3422 West Clarendon Avenue. Based on these results, potential COC source areas for the East Plume include the HCZ Custom Homes property..

8.3 COC Transport and Fate

The likely reduction of shallow groundwater hydraulic conductivities as a result of the water level declines, and the concurrent reduction in canal recharge, have presumably slowed COC migration rates and reduced potential dilution of the COCs. Although COC plumes may therefore be expected to migrate more slowly, they may have greater longevity as a result of reduced dilution.

The COCs are expected to continue migrating laterally in the direction of the current shallow groundwater flow, primarily to the south-southwest. In addition to the hydraulic factors discussed above, COC migration rates and concentrations will be impacted by hydrodynamic dispersion and retardation by sorption.

Solute plume behavior is ultimately controlled by the balance of source strength (e.g., dissolution from residual non-aqueous phase liquid located in a source area) with natural attenuation mechanisms that reduce contaminant concentration and mass in groundwater. Natural attenuation mechanisms include physical, chemical and biological processes that govern contaminant transport and fate in groundwater. The physical processes include advection, dispersion, sorption and volatilization. These processes result in transport and mass transfer between different media that ultimately result in reduction in contaminant concentration in groundwater, but do not remove contaminant mass from the system. Degradation and transformation processes are destructive processes and therefore reduce contaminant concentrations through the removal of contaminant mass.

8.3.1 Chlorinated Solvents

Sorption to the aquifer matrix and associated retardation of solute transport is likely to be minimal for the COCs in groundwater at the Site. Reported organic carbon contents for the aquifer matrix are uniformly low (Appendix F). Sorption to organic carbon does not dominate the sorption capacity at values less than 0.1%, where sorption to mineral surfaces can become an important component. Therefore, estimates of retardation based on sorption to organic carbon cannot be made with confidence.

Biological degradation and transformation processes can account for both chemical concentration reduction and loss of chemical mass from an aquifer, as well as control the geochemical conditions through sequential utilization of oxidized compounds, such as dissolved oxygen, nitrate, iron, sulfate and carbon dioxide, in the aquifer. The primary biological process for the natural biodegradation of chlorinated ethenes is reductive dechlorination, which generally requires strongly reducing conditions in an anaerobic environment. PCE and TCE are recalcitrant under oxidizing conditions and would not be expected to degrade under aerobic conditions. In contrast, the DCE isomers are sufficiently reduced to serve as electron donors under aerobic conditions and can be directly oxidized to carbon dioxide, water and chloride (Bradley, 2003).

The reported DO concentrations and ORP measurements at the Site are generally indicative of oxic groundwater conditions. There is little evidence for any significant nitrate reduction, iron reduction, sulfate reduction or methanogenesis in the aquifer; although there is evidence that reducing conditions do occur locally. Organic carbon concentrations in aquifer sediments and groundwater are uniformly low and indicate a system that is relatively starved of organic carbon that could drive reductive processes.

The weight of evidence from geochemical data and concentration trends for the chlorinated ethenes does not support the occurrence of biodegradation under current conditions. Some relatively low concentrations of *cis*-1,2-DCE suggest that some localized reductive dechlorination of TCE is occurring at a few locations in the West and Central Plumes. Vinyl chloride has not been detected in any groundwater samples to date, although ethene was reported from well WCP-27, suggesting that any reductive dechlorination that is occurring is "stalled" at cis-1,2-DCE. Aerobic biodegradation of DCE isomers may be occurring.

8.3.2 Chromium

Chromium mobility in soil and groundwater is strongly linked to oxidation/reduction (redox) conditions in the subsurface environment. Oxidation of CrIII to form CrVI increases the solubility of chromium, thereby increasing the potential for mobilization of the constituent. CrVI is the predominant form of chromium occurring in groundwater at the Site. The persistence and mobility of CrVI in groundwater is favored by oxic conditions with neutral to alkaline pH values and moderate to high concentrations of other anions, such as are the predominant conditions currently observed in groundwater at the Site. Groundwater conditions are not expected to change and CrVI is therefore expected to remain in solution and be mobile. The data suggest that both background chromium and anthropogenic chromium related to releases at the Site exists in the aquifer. However, the data are not sufficient to quantify the relative contributions.

9. EVALUATION OF HUMAN HEALTH CONCERNS

The objective in the WQARF program is to evaluate potential human health concerns associated with the Site which will support decision-making regarding appropriate remedial actions. This evaluation identifies relevant human receptors and exposure scenarios; evaluates potential exposures; and characterizes human health concerns associated with Site-related chemicals through a comparison to relevant promulgated Arizona standards for groundwater and soil and risk-based screening levels calculated for soil vapor. Due to the presence of COCs at depth and the urban character of the Site, evaluation of ecological receptors is not warranted.

COCs identified for the Site include PCE, TCE, 1,1-DCE and chromium based on their presence in groundwater at concentrations greater than their respective AWQS. Additionally, PCE and TCE have been detected in soil and/or soil vapor at various locations.

Characterization of the exposure setting is based on an evaluation of current land and water use in the vicinity of the Site (Section 7). Land use in the area of the Site includes commercial/industrial and residential settings; potential receptors including residents and commercial/industrial workers are therefore identified. The impacted media include soil, soil vapor and groundwater.

The identification of potentially complete exposure pathways is based on the following four components: 1) a source and mechanism of chemical release, 2) a retention or transport medium, 3) an exposure point (i.e., a setting where potential human contact with the chemical-affected medium or media occurs), and 4) a route of exposure at the exposure point (e.g., ingestion). A complete exposure pathway is present when all four of these components are present.

9.1 Groundwater Use

Consumptive use of groundwater is a potential exposure pathway of concern at the Site through direct ingestion, inhalation or dermal contact with contaminated groundwater. Several water supply wells that produce from the deeper portion of the aquifer are present in and adjacent to the Site and have the potential to be impacted by contaminated groundwater from the Site. Potential future use of the groundwater as a water supply which could result in exposure to contaminated groundwater is also possible and is considered a complete exposure pathway for the Site.

Representative monitoring wells displaying elevated COC concentrations were selected for evaluation that reflect the COCs associated with each solute plume area. Well WCP-230 was selected for the West Plume because it had the highest reported COC concentrations. Well WCP-

213 was selected for the East Plume due to its proximity to an apparent source area. The Central Plume consists of COC solute plumes with varying spatial distribution and with no single monitoring well containing all of the COCs. Therefore, a composite of the highest concentrations for each COC was constructed that included values from wells WCP-214, WCP-27 and WCP-64. A comparison of COC concentrations to their respective AWQS for each plume is summarized in Table 27.

9.1.1 West Plume

The concentrations of 1,1-DCE and TCE exceed their AWQS for the West Plume.

9.1.2 Central Plume

The concentrations of chromium, 1,1-DCE, TCE and PCE exceed their AWQS for the Central Plume.

9.1.3 East Plume

The concentration of PCE exceeds the AWQS for the East Plume.

9.2 Soil Direct Contact

Extensive soil sampling has been conducted in association with soil borings at the known potential source properties. However, few samples were collected at shallow depths (≤ 5 ft bgs) and the only reported COC concentrations occurred at depth and are not relevant to this pathway. The properties are currently commercial/industrial land use, and this use is not anticipated to change in the future. The soil direct contact pathway is considered to be incomplete at the Site based on current land use and the lack of detections in shallow soil.

9.3 Soil Vapor

The potentially complete exposure pathways at the Site include transport of vapor-phase contaminants to outdoor and indoor air with subsequent inhalation exposure. Inhalation exposure from outdoor air would be negligible due to the effects of atmospheric mixing. However, potential vapor intrusion into buildings with subsequent inhalation exposure to indoor air is of potential concern. Indoor air exposure is highly location and facility specific and not evaluated in this RI.

Both passive soil gas data, expressed as a mass, and active soil vapor data, expressed as a concentration have been collected at the Site. Only active soil vapor data can be used for risk screening procedures. Shallow soil vapor concentration data are available for some of the facilities and from some other borings at the Site (Table 3). The historical soil vapor samples were apparently only analyzed for a limited number of chlorinated VOCs and available soil vapor concentrations of PCE and TCE from depths of 5 or 10 ft bgs were used as source concentrations in a screening-level evaluation of potential vapor intrusion risk. Reporting limits for the historical soil vapor samples were elevated at 1 mg/m^3 and this value was used as a conservative upper estimate of the soil vapor concentration for locations where no reported concentration was available. Soil vapor concentrations from the 2016 supplemental soil gas investigation (Table 12) also were used in the evaluation.

Vapor migration to indoor air was evaluated by comparison to soil vapor screening levels (SVSLs) calculated using an empirical attenuation factor of 0.03, consistent with U.S. EPA guidance (EPA, 2015a), the U.S. EPA Regional Screening Levels (RSLs) for air in an industrial setting, consistent with the present and expected future land use in the areas of impacted soil (EPA, 2015b). The calculated SVSL for PCE is 1.6 mg/m^3 and for TCE is 0.1 mg/m^3. The results of the comparison for the twelve properties at the Site are shown in Table 28. These results indicate potential vapor intrusion concerns for following nine properties:

- Precise Products (PCE and TCE)
- Giltspur Exhibits (TCE only)
- 4001 West Indian School Road (TCE only)
- Stevens Engineering (TCE only)
- Osborn Products (PCE and TCE)
- Southwest Metal Industries (PCE and TCE)
- Pyramid Industries (PCE and TCE)
- Triad Trucking (PCE and TCE)
- HCZ Custom Homes (PCE and TCE)

At the request of ADEQ, SVSLs were further evaluated using the USEPA screening level implementation of the Johnson and Ettinger (1991) vapor intrusion model (EPA, 2016) in the reverse calculation of target media concentrations mode. The model was configured for slab-on-grade construction and the default values for building properties were used. The type of soil beneath the building was assumed to be sandy loam based on the limited available information from soil boring logs for locations across the Site. Exposure parameters for exposure duration and frequency were adjusted to reflect default values appropriate for a worker in a commercial/industrial setting. SVSLs were calculated for PCE and TCE using source depths of 5 and 10 feet bgs. The results are included in Appendix Q.

The calculated SVSLs for PCE at a 5-foot depth ranged from 1.53 to 4.20 mg/m^3 with a best estimate value of 2.21 mg/m^3 and at a 10-foot depth ranged from 2.23 to 7.57 mg/m^3 with a best estimate value of 3.596 mg/m^3. These results are generally less conservative than the SVSL for PCE based on the empirical attenuation factor and suggest that potentially vapor intrusion concerns for PCE may be limited to the Triad Trucking property in the Central Plume and the HCZ Custom Homes property in the East Plume.

The calculated SVSLs for TCE at a 5-foot depth ranged from 0.0401 to 0.107 mg/m^3 with a best estimate value of 0.057 mg/m^3 and at a 10-foot depth ranged from 0.057 to 0.19 mg/m^3 with a best estimate value of 0.091 mg/m^3. These results are generally more conservative than the SVSL for TCE based on the empirical attenuation factor and suggest that potential vapor intrusion concerns for TCE are consistent with the initial evaluation.

9.4 Surface Water

There are no points of natural discharge of groundwater to surface water in the vicinity of the Site, so no risk characterization is necessary. The Grand Canal runs east-west along the southern margin of the Site and carries irrigation water from the SRP.

10. DATA GAPS

The data gaps summarized below will impact the FS and may need to be addressed.

- The elevated TCE concentrations in the vicinity of monitoring well WCP-230 indicate that one or more additional local sources may be contributing to contaminant concentrations in the West Plume. While the historical groundwater flow directions support a contribution from the former Precise/Paraflex and former Giltspur Exhibits properties to the TCE plume, the 2008 passive soil gas data and 2016 soil vapor data from the 4001 West Indian School Road property and Stevens Engineering property suggest that these properties may have been a contributing source of CVOCs that are not adequately defined.
- The results of soil gas surveys indicate that the source area for the East Plume is most likely the HCZ Custom Homes property. The degree and extent of contamination below these properties is not defined adequately to allow evaluation of the potential impact of source control measures.
- Shallow soil vapor concentrations in the vicinity of nine properties exceed screening levels for industrial/commercial land use, suggesting the potential for vapor intrusion concerns at these locations. The available data do not allow for conclusive determination of potential vapor intrusion impacts.
- The available data are insufficient to determine the source of background concentrations of chromium in the shallow and LSGS aquifers. Additional geochemical characterization may be necessary to evaluate background levels of chromium.

11. CONCLUSIONS

The Site consists of three distinct areas referred to as the West, Central and East Plumes. COCs include TCE, PCE, 1,1-DCE, and chromium.

The West Plume contains TCE and 1,1-DCE. COCs appear to have originated from the former Precise/Paraflex and former Giltspur Exhibits facilities. The 4001 West Indian School Road property and Stevens Engineering facility are also believed to be sources to groundwater based on data from the 2008 passive soil gas investigation and the most recent 2016 soil gas investigation.

The East Plume contains PCE. A source is located near the intersection of North Clarendon and West 34th Avenues based upon groundwater results from WCP-213 and soil gas results from the 2016 sampling of borings at the HCZ Homes facility.

The Central Plume contains TCE, 1,1-DCE, chromium, and PCE solute plumes from various sources. COCs appear to have originated from the former Triad Trucking facility, the former Southwest Metals Industries facility, the former Pyramid Industries facility and the former Osborn Products facility. The Magic Metals facility appears to be a source of chromium.

Groundwater transport of contaminants in the solute plumes and the resulting distribution of COCs are complicated by changes in shallow groundwater flow directions and elevations related to lining of the Grand Canal that runs along the southern border of the Site. Prior to lining of the canal circa 1998, shallow groundwater flow directions were generally to the north and the shallowest groundwater occupied coarser-grained, more permeable materials. The canal lining caused a decline in shallow groundwater levels and a change in groundwater flow direction. Subsequently, the shallowest groundwater currently occupies finer-grained, lower permeability materials and shallow groundwater flow directions are generally to the south. As a result, both the directions and rates of solute transport changed. Rates of generally northerly solute transport prior to canal lining were likely higher than the rates of generally southerly solute transport after canal lining.

The West Plume and Central Plume appear relatively stable, which may be a reflection of the relatively low groundwater flow velocities that limit the rate of contaminant migration, particularly in the southern (downgradient) portion of the solute plumes. It is evident that these plumes mingle with the West Osborn plume to the south. It is not in the scope of this RI to characterize the extent of this mingling.

With no evident attenuation mechanism to remove PCE mass and stabilize the solute plume, the East Plume is expected to continue to migrate southward with groundwater flow. The toe of the PCE solute plume (5 µg/L contour) currently is likely located at least 300 feet downgradient (south) of monitoring well WCP-205 and co-mingles with the former West Grand Avenue WQARF site to the south, based on projected concentration contours.

Current land use in the area of the Site is predominantly commercial and industrial and this is unlikely to change in the foreseeable future. Groundwater at the Site is not currently being used as a water supply, but there is the potential for future development of the groundwater resource.

Potentially complete exposure pathways of concern include:

- the future use of groundwater as a water supply for all three plumes, and
- the potential for vapor intrusion into buildings at concentrations above the SVSL at eight of the identified potential source properties.

While there is some evidence for reductive dechlorination of chlorinated ethenes locally, notably in the Central Plume, geochemical conditions in the aquifer are predominantly oxidizing and aerobic. Therefore, the potential for microbial reductive dechlorination is generally localized.

The Remedial Objectives (RO) are presented in Appendix R. Appendix S is reserved for the responsiveness summary that summarizes the comments received during public review of this RI report.

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13. LIMITATIONS

The opinions and recommendations presented in this report are based upon the scope of services and information obtained through the performance of the services, within the schedule and budget as agreed upon by HGC and ADEQ. Results of any investigations, tests, or findings presented in this report apply solely to conditions existing at the time HGC's investigative work was performed and are inherently based on and limited to the available data and the extent of the investigation activities. No representation, warranty, or guarantee, express or implied, is intended or given. HGC makes no representation as to the accuracy or completeness of any information provided by other parties not under contract to HGC to the extent that HGC relied upon that information. Figures produced by other contractors have been presented "as is" in this report using HGC's logo and with the source referenced appropriately. HGC makes no representations regarding the accuracy of the depicted data in those figures. This report is expressly for the sole and exclusive use of ADEQ and for the particular purpose that it was intended. Reuse of this report, or any portion thereof, for other than its intended purpose, or if modified, or if used by third parties, shall be at the sole risk of the user.

TABLES

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Magic Metals Soil Bore 1					
MM-SB01-S- 5	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 10	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 15	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 20	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 25	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 30	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 35	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 40	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 45	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 50	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 60	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 70	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 80	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 90	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 100	04/26/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 110	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 120	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB01-S- 127.5	04/27/04	<0.1	<0.1	<0.1	<0.1
Magic Metals Soil Bore 2					
MM-SB02-S- 5	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 10	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 15	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 20	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 25	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 30	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 35	04/27/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 40	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 45	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 50	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 60	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 70	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 80	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 90	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 110	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 110	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 120	04/28/04	<0.1	<0.1	<0.1	<0.1
MM-SB02-S- 127.5	04/28/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		***cis*-1,2-DCE**	***trans*-1,2-DCE**	**TCE**	**PCE**
Magic Metals Soil Bore 3					
MM-SB03-S- 5	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 10	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 15	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 20	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 25	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 30	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 35	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 40	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 45	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 50	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 60	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 70	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 80	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 90	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 100	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 110	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 120	04/29/04	<0.1	<0.1	<0.1	<0.1
MM-SB03-S- 127.5	04/29/04	<0.1	<0.1	<0.1	<0.1
Magic Metals Soil Bore 4					
MM-SB04-S- 5	04/30/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 10	04/30/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 15	04/30/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 20	04/30/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 25	04/30/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 30	04/30/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 35	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 40	05/03/04	NA	NA	NA	NA
MM-SB04-S- 45	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 50	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 60	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 70	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 80	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 90	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 100	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 110	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 120	05/03/04	<0.1	<0.1	<0.1	<0.1
MM-SB04-S- 127.5	05/03/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Precise/Paraflex Soil Bore 1					
PP-SB01-S- 5	05/04/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 10	05/04/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 15	05/04/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 20	05/04/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 25	05/04/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 30	05/04/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 35	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 40	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 45	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 50	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 60	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 70	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 80	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 90	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 100	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 110	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 120	05/05/04	<0.1	<0.1	<0.1	<0.1
PP-SB01-S- 125	NS	NS	NS	NS	NS
Precise/Paraflex Soil Bore 2					
PP-SB02-S- 5	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 10	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 15	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 20	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 25	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 30	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 35	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 40	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 45	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 50	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 60	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 70	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 80	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 90	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 110	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 110	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 120	05/07/04	<0.1	<0.1	<0.1	<0.1
PP-SB02-S- 125	05/07/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis **-1,2-DCE**	***trans*** **-1,2-DCE**	**TCE**	**PCE**
Precise/Paraflex Soil Bore 3					
PP-SB03-S- 5	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 10	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 15	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 20	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 25	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 30	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 35	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 40	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 45	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 50	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 60	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 70	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 80	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 90	05/10/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 100	05/11/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 110	05/11/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 120	05/11/04	<0.1	<0.1	<0.1	<0.1
PP-SB03-S- 125	05/12/04	<0.1	<0.1	<0.1	<0.1
Precise/Paraflex Soil Bore 4					
PP-SB04-S- 5	05/12/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 10	05/12/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 15	05/12/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 20	05/12/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 25	05/12/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 30	05/12/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 35	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 40	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 45	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 50	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 60	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 70	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 80	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 90	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 100	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 110	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 120	05/13/04	<0.1	<0.1	<0.1	<0.1
PP-SB04-S- 125	05/13/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Osborn Products Soil Bore 1					
OP-SB01-S- 5	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 10	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 15	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 20	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 25	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 30	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 35	05/14/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 40	05/14/04	<0.1	<0.1	<0.1	**11**
OP-SB01-S- 45	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 50	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 60	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 70	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 80	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 90	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 100	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 110	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 120	05/17/04	<0.1	<0.1	<0.1	<0.1
OP-SB01-S- 125	05/17/04	<0.1	<0.1	<0.1	<0.1
Osborn Products Soil Bore 2					
OP-SB02-S- 5	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 10	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 15	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 20	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 25	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 30	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 35	05/18/04	<0.1	<0.1	**3.5**	**3.3**
OP-SB02-S- 40	05/18/04	<0.1	<0.1	<0.1	**26**
OP-SB02-S- 45	05/18/04	NA	NA	NA	NA
OP-SB02-S- 50	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 60	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 70	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 80	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 90	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 95	05/18/04	<0.1	<0.1	<0.1	**1.1**
OP-SB02-S- 105	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 115	05/18/04	<0.1	<0.1	<0.1	<0.1
OP-SB02-S- 125	05/18/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Osborn Products Soil Bore 3					
OP-SB03-S- 5	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 10	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 15	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 20	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 25	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 30	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 35	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 40	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 45	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 50	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 60	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 70	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 80	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 90	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 100	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 110	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 120	05/19/04	<0.1	<0.1	<0.1	<0.1
OP-SB03-S- 125	05/19/04	<0.1	<0.1	<0.1	<0.1
Osborn Products Soil Bore 4					
OP-SB04-S- 5	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 10	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 15	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 20	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 25	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 30	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 35	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 40	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 45	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 50	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 60	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 70	05/20/04	<0.1	<0.1	<0.1	<0.1
BD-2S [1]	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 80	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 90	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 100	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 110	05/20/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 120	05/21/04	<0.1	<0.1	<0.1	<0.1
OP-SB04-S- 125	05/21/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Southwest Metal Industries Soil Bore 1					
SWM-SB01-S- 5	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 10	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 15	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 20	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 25	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 30	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 35	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 40	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 45	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 50	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 60	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 70	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 80	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 90	05/24/04	<0.1	<0.1	<0.1	<0.1
SWM-SB01-S- 99.5	05/24/04	<0.1	<0.1	<0.1	<0.1
Southwest Metal Industries Soil Bore 2					
SWM-SB02-S- 5	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 10	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 15	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 20	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 25	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 30	05/25/04	<0.1	<0.1	<0.1	<0.1
BD-1S [2]	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 35	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 40	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 45	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 50	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 60	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 70	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 80	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 90	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB02-S- 95	05/25/04	<0.1	<0.1	<0.1	<0.1

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Southwest Metal Industries Soil Bore 3					
SWM-SB03-S- 5	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 10	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 15	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 20	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 25	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 30	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 35	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 40	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 45	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 50	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 60	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 70	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 80	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 90	05/25/04	<0.1	<0.1	<0.1	<0.1
SWM-SB03-S- 99.5	05/25/04	<0.1	<0.1	<0.1	<0.1
Southwest Metal Industries Soil Bore 4					
SWM-SB04-S- 5	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 10	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 15	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 20	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 25	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 30	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 35	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 40	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 45	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 50	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 60	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 70	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 80	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 90	05/26/04	<0.1	<0.1	<0.1	<0.1
SWM-SB04-S- 99.5	05/26/04	<0.1	<0.1	<0.1	<0.1
Southwest Metal Industries Soil Bore 5					
SWM-SB05-S- 80	10/24/06	<0.050	<0.050	<0.050	<0.050
SWM-SB05-S- 90	10/24/06	<0.050	<0.050	<0.050	<0.050
SWM-SB05-S- 130	10/24/06	<0.050	<0.050	<0.050	<0.050
Southwest Metal Industries Soil Bore 6					
SWM-SB06-S- 100	10/25/06	<0.050	<0.050	<0.050	<0.050
SWM-SB06-S- 110	10/25/06	<0.050	<0.050	<0.050	<0.050
Southwest Metal Industries Soil Bore 7					
SWM-SB07-S- 70	10/26/06	<0.050	<0.050	<0.050	<0.050
SWM-SB07-S- 90	10/27/06	<0.050	<0.050	<0.050	<0.050

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Southwest Metal Industries Soil Bore 8					
SWM-SB08-S- 70	10/30/06	<0.050	<0.050	<0.050	<0.050
SWM-SB08-S- 110	10/30/06	<0.050	<0.050	<0.050	<0.050
Southwest Metal Industries Soil Bore 9					
SWM-SB09-S- 80	11/01/06	<0.050	<0.050	<0.050	<0.050
SWM-SB09-S- 100	11/01/06	<0.050	<0.050	<0.050	<0.050
SWM-SB09-S- 120	11/01/06	<0.050	<0.050	<0.050	<0.050
Pyramid Industries Soil Bore 1					
PY-SB01-S- 35	01/24/06	<0.050	<0.050	<0.050	<0.050
PY-SB01-S- 40	01/24/06	<0.050	<0.050	<0.050	<0.050
Pyramid Industries Soil Bore 2					
PY-SB02-S- 130	01/27/06	<0.050	<0.050	<0.050	<0.050
Pyramid Industries Soil Bore 3					
PY-SB03-S- 45	02/02/06	<0.050	<0.050	<0.050	<0.050
PY-SB03-S- 80	02/03/06	<0.050	<0.050	<0.050	<0.050
Pyramid Industries Soil Bore 4					
PY-SB04-S- 20	02/06/06	<0.050	<0.050	<0.050	<0.050
PY-SB04-S- 130	02/08/06	<0.050	<0.050	<0.050	<0.050
Giltspur Exhibits Soil Bore 1					
GS-SB01-S- 15	02/13/06	<0.050	<0.050	<0.050	<0.050
GS-SB01-S- 60	02/13/06	<0.050	<0.050	<0.050	<0.050
Giltspur Exhibits Soil Bore 2					
GS-SB02-S- 40	02/15/06	<0.050	<0.050	<0.050	<0.050
GS-SB02-S- 60	02/15/06	<0.050	<0.050	<0.050	<0.050
Giltspur Exhibits Soil Bore 3					
GS-SB03-S- 20	02/17/06	<0.050	<0.050	<0.050	<0.050
GS-SB03-S- 80	02/20/06	<0.050	<0.050	<0.050	<0.050
Giltspur Exhibits Soil Bore 4					
GS-SB04-S- 15	02/20/06	<0.050	<0.050	<0.050	<0.050
Giltspur Exhibits Soil Bore 5					
no data					
Triad Trucking Soil Bore 1					
TT-SB01-S - 20	02/28/06	<0.050	<0.050	<0.050	<0.050
TT-SB01-S - 60	02/28/06	<0.050	<0.050	<0.050	<0.050
TT-SB01-S - 90	03/01/06	<0.050	<0.050	<0.050	<0.050
TT-SB01-S - 110	03/01/06	<0.050	<0.050	<0.050	<0.050
Triad Trucking Soil Bore 2					
TT-SB02-S - 40	03/02/06	<0.050	<0.050	<0.050	<0.050
TT-SB02-S - 90	03/02/06	<0.050	<0.050	<0.050	<0.050

TABLE 1
Mobile Laboratory Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/kg)			
		cis -1,2-DCE	*trans* -1,2-DCE	TCE	PCE
Triad Trucking Soil Bore 3					
TT-SB03-S - 20	03/03/06	<0.050	<0.050	<0.050	<0.050
TT-SB03-S - 60	03/03/06	<0.050	<0.050	<0.050	<0.050
Triad Trucking Soil Bore 4					
TT-SB04-S - 40	03/06/06	<0.050	<0.050	<0.050	<0.050
TT-SB04-S - 90	03/06/06	<0.050	<0.050	<0.050	<0.050
Redburn Tire Soil Bore 1					
no data					
Redburn Tire Soil Bore 2					
RB-SB02-S - 20	05/03/06	<0.050	<0.050	<0.050	<0.050
RB-SB02-S - 90	05/03/06	<0.050	<0.050	<0.050	<0.050
Redburn Tire Soil Bore 3					
RB-SB03-S - 20	05/04/06	NA	NA	NA	NA
RB-SB03-S - 60	05/04/06	NA	NA	NS	NA
Redburn Tire Soil Bore 4					
no data					
ADEQ Residential/Non-Residential SRL		**43/150**	**69/230**	**3.0/65**	**0.51/13**
ADEQ Minimum GPL		**5.3**	**9.2**	**0.76**	**0.80**

Notes:

mg/kg = milligrams per kilogram
cis-1,2-DCE = cis-1,2-dichloroethene
Trans-1,2-DCE = trans-1,2-dichloroethene
ADEQ = Arizona Department of Environmental Quality
SWM = Southwest Metal Industries
GPL = Groundwater Protection Level
[1] = Sample BD-2S is a blind duplicate of OP-SB04-S-70'
[2] = Sample BD-1S is a blind duplicate of SWM-SB02-S-30'

TCE = trichloroethene
PCE = tetrachloroethene
NA = Not Analyzed
NS = Not Sampled
< = Less than detection limit
SRL = Soil Remediation Level

Soil samples analyzed by US EPA Method 8021B (modified)
Analyses were performed in a mobile laboratory

Regulatory Sources: Residential/Non-Residential SRLs (2007), Groundwater Protection Levels (2014)

TABLE 2
Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Target Analytes								
		Volatile Organic Compounds						Metals		
		1,1-DCA (mg/kg)	1,1-DCE (mg/kg)	*cis*-1,2-DCE (mg/kg)	*trans*-1,2-DCE (mg/kg)	TCE (mg/kg)	PCE (mg/kg)	Total Cr (mg/kg)	Cr VI (mg/kg)	Cr III (mg/kg)
Magic Metals										
MM-SB01-S-30'	04/26/04	NA	NA	NA	NA	NA	NA	32	NA	NA
MM-SB01-S-50'	04/26/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	15	1.1	13.9
MM-SB02-S-30'	04/27/04	NA	NA	NA	NA	NA	NA	14	NA	NA
MM-SB02-S-70'	04/28/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	20	<0.5	20
MM-SB03-S-30'	04/29/04	NA	NA	NA	NA	NA	NA	17	NA	NA
MM-SB03-S-90'	04/29/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	17	<0.5	17
MM-SB04-S-20'	04/30/04	NA	NA	NA	NA	NA	NA	15	NA	NA
MM-SB04-S-110'	05/03/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	17	<0.5	17
Osborn Products										
OP-SB01-S-40'	05/14/04	<0.05	<0.1	<0.05	<0.05	0.15	0.27	140	<0.5	140
OP-SB02-S-40'	05/18/04	<0.05	<0.1	<0.05	<0.05	0.33	0.33	25	<0.05	25
BD-1S [1]	05/19/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	13	<0.05	13
OP-SB03-S-110'	05/19/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	36	<0.05	36
Precise/Paraflex										
PP-SB01-S-30'	05/04/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	20	<0.5	20
PP-SB02-S-80' [2]	05/07/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	58	<0.05	58
PP-SB02-S-90'	04/28/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	23	<0.05	23
PP-SB03-S-70'	04/29/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	17	<0.05	17
PP-SB04-S-70'	05/03/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	32	<0.05	32
Southwest Metal Industries										
SWM-SB01-S-90'	05/24/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	20	0.57	19
SWM-SB02-S-80'	05/25/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	45	<0.05	45
SWM-SB03-S-90'	05/25/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	17	<0.05	17
SWM-SB04-S-80'	05/26/04	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	16	<0.05	16
SWM-SB05-S-80'	10/24/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	30	6.5	NA
SWM-SB05-S-90'	10/24/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	30	<0.50	NA
SWM-SB05-S-130'	10/24/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	43	<0.50	NA
SWM-SB06-S-100'	10/25/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	NA	NA	NA
SWM-SB06-S-110'	10/25/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	NA	NA	NA
SWM-SB07-S-70'	10/26/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	59	24	NA
SWM-SB07-S-90'	10/27/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	21	<0.50	NA
SWM-SB08-S-70'	10/30/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	33	0.52	NA
SWM-SB08-S-110'	10/30/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	49	<0.50	NA
SWM-SB09-S-80'	11/01/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	NA	NA	NA
SWM-SB09-S-100'	11/01/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	NA	NA	NA
SWM-SB09-S-120'	11/01/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	NA	NA	NA
Pyramid Industries										
PY-SB01-S-35'	01/24/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	16	<0.50	NA
PY-SB01-S-40'	01/24/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	12	<0.50	NA
PY-SB02-S-130'	01/26/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	28	<0.50	NA
PY-SB03-S-45'	02/02/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	25	<0.50	NA
PY-SB03-S-80'	02/03/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	28	<0.50	NA
PY-SB04-S-20'	02/06/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	6.0	<0.50	NA
PY-SB04-S-130'	02/08/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	29	<0.50	NA
Giltspur Exhibits										
GS-SB01-S-15'	02/13/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	5.2	<0.50	NA
GS-SB01-S-60'	02/13/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	11	<0.50	NA
GS-SB02-S-40'	02/15/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	29	<0.50	NA
GS-SB02-S-60'	02/15/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	18	<0.50	NA
GS-SB03-S-20'	02/17/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	11	<0.50	NA
GS-SB03-S-80'	02/20/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	22	<0.50	NA
GS-SB04-S-15'	02/20/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	17	<0.50	NA
Triad Trucking										
TT-SB01-S-5'	02/28/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	16	<0.50	NA
TT-SB01-S-60'	02/28/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	19	<0.50	NA
TT-SB01-S-90'	03/01/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	30	<0.50	NA
TT-SB01-S-110'	03/01/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	33	<0.50	NA
TT-SB02-S-40'	03/02/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	18	<0.50	NA
TT-SB02-S-90'	03/02/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	30	<0.50	NA
TT-SB03-S-20'	03/03/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	18	<0.50	NA
TT-SB03-S-60'	03/03/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	19	<0.50	NA
TT-SB04-S-40'	03/06/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	22	<0.50	NA
TT-SB04-S-40'	03/06/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	50	<0.50	NA
Redburn Tire										
RB-SB02-S-20'	05/03/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	13	<0.50	NA
RB-SB02-S-90'	05/03/06	NA	<0.10	<0.050	<0.050	<0.050	<0.050	33	<0.50	NA
RB-SB03-S-20'	05/04/06	NA	NA	NA	NA	NA	NA	9.3	<0.50	NA
RB-SB03-S-60'	05/04/06	NA	NA	NA	NA	NA	NA	28	<0.50	NA

TABLE 2
Soil Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Target Analytes								
		Volatile Organic Compounds						Metals		
		1,1-DCA (mg/kg)	1,1-DCE (mg/kg)	*cis*-1,2-DCE (mg/kg)	*trans*-1,2-DCE (mg/kg)	TCE (mg/kg)	PCE (mg/kg)	Total Cr (mg/kg)	Cr VI (mg/kg)	Cr III (mg/kg)
DJK, Inc.										
WCP-DJK-1 @ 10'	11/02/15	<0.0337	<0.0675	<0.0337	<0.0337	<0.0337	<0.0337	NA	NA	NA
WCP-DJK-1 @ 30'	11/02/15	<0.0388	<0.0775	<0.0388	<0.0388	<0.0388	<0.0388	NA	NA	NA
WCP-DJK-1 @ 50'	11/02/15	<0.0371	<0.0742	<0.0371	<0.0371	<0.0371	<0.0371	NA	NA	NA
WCP-DJK-1 @ 70'	11/02/15	<0.0450	<0.0901	<0.0450	<0.0450	<0.0450	<0.0450	NA	NA	NA
WCP-DJK-1 @ 90'	11/02/15	<0.0374	<0.0747	<0.0374	<0.0374	<0.0374	<0.0374	NA	NA	NA
WCP-DJK-1 @ 110'	11/03/15	<0.0399	<0.0797	<0.0399	<0.0399	<0.0399	<0.0399	NA	NA	NA
WCP-DJK-1 @ 130'	11/03/15	<0.0332	<0.0663	<0.0332	<0.0332	<0.0332	<0.0332	NA	NA	NA
HCZ Custom Homes										
HCZ-SB1@10'	12/07/15	<0.0363	<0.0727	<0.0363	<0.0363	<0.0363	0.108	27.9	<4.03	NA
HCZ-SB1@30'	12/07/15	<0.0326	<0.0653	<0.0326	<0.0326	<0.0326	0.0819	27.0	<3.72	NA
HCZ-SB1@50'	12/07/15	<0.0421	<0.0842	<0.0421	<0.0421	<0.0421	0.141	32.5	<3.79	NA
HCZ-SB1@70'	12/07/15	<0.0401	<0.0801	<0.0401	<0.0401	<0.0401	0.454	79.3	<4.02	NA
HCZ-SB1@90'	12/07/15	<0.0449	<0.0898	<0.0449	<0.0449	<0.0449	0.117	21.9	<4.05	NA
HCZ-SB1@110'	12/08/15	<0.0383	<0.0766	<0.0383	<0.0383	<0.0383	0.700	34.2	<4.03	NA
HCZ-SB1@130'	12/08/15	<0.0381	<0.0761	<0.0381	<0.0381	<0.0381	0.356	26.4	<4.07	NA
ADEQ Residential/Non-Residential SRL		**510/ 1,700**	**120/410**	**43/150**	**69/230**	**3.0/65**	**0.51/13**	**NE**	**30/65**	**120,000/ 1,000,000**
ADEQ Minimum GPL		**NE**	**0.85**	**5.30**	**9.20**	**0.76**	**0.80**	**590**	**NE**	**590**

Notes:

1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
TCE = trichloroethene
PCE = tetrachloroethene
Cr = chromium
[1] = Sample BD-1S is a blind duplicate of sample OP-SB03-S-30 analyzed in the mobile laboratory
[2] = Acetone was detected at a concentration of 1.6 g/L in sample PP-SB02 S-80'. However, Acetone was also detected in the laboratory Method Blank.
Volatile Organic Compounds analyzed by US EPA Method 8260B
Total chromium analyzed by US EPA Method 6010B
Chromium VI analyzed by US EPA Method 7196A (modified)
Chromium III results determined by calculation (Cr III = Total Cr - Cr VI)
ADEQ = Arizona Department of Environmental Quality
SRL = Soil Remediation Level
GPL = Groundwater Protection Level
NE = Not Established
NA = Not Analyzed
Soil sample analytical results vary as a result of the analytical methods used and the detection limits of each analytical method.
Regulatory Sources: Residential/Non-Residential SRLs (2007), Groundwater Protection Levels (2014)

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Magic Metals Soil Bore 1					
MM-SB01-SG-5	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-10	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-15	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-20	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-25	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-30	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-35	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-40	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-45	04/26/04	<1.0	<1.0	<1.0	**1.5**
MM-SB01-SG-50	04/26/04	<1.0	<1.0	<1.0	**1.7**
MM-SB01-SG-60	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-70	04/26/04	<1.0	<1.0	<1.0	**2.0**
MM-SB01-SG-80	04/26/04	<1.0	<1.0	<1.0	**2.0**
MM-SB01-SG-90	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-100	04/26/04	<1.0	<1.0	<1.0	<1.0
MM-SB01-SG-110	04/27/04	<1.0	**1.5**	<1.0	<1.0
MM-SB01-SG-120	04/27/04	**2.1**	**3.2**	**1.5**	<1.0
MM-SB01-SG-127.5	04/27/04	**25**	**56**	**6.3**	<1.0
Magic Metals Soil Bore 2					
MM-SB02-SG-5	04/27/04	<1.0	**1.6**	<1.0	<1.0
MM-SB02-SG-10	04/27/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-15	04/27/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-20	04/27/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-25	04/27/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-30	04/27/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-35	04/27/04	<1.0	<1.0	<1.0	**1.1**
MM-SB02-SG-40	04/28/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-45	04/28/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-50	04/28/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-60	04/28/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-70	04/28/04	<1.0	<1.0	<1.0	**2.7**
MM-SB02-SG-80	04/28/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-90	04/28/04	<1.0	<1.0	<1.0	<1.0
MM-SB02-SG-100	04/28/04	<1.0	**1.8**	<1.0	<1.0
MM-SB02-SG-110	04/28/04	**82**	**17**	**24**	**7.4**
MM-SB02-SG-120	04/28/04	**94**	**200**	**16**	<5
MM-SB02-SG-127.5	04/28/04	**490**	**1,000**	**140**	**23**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Magic Metals Soil Bore 3					
MM-SB03-SG-5	04/29/04	<1.0	**1.1**	<1.0	<1.0
MM-SB03-SG-10	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-15	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-20	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-25	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-30	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-35	04/29/04	<1.0	<1.0	<1.0	**1.5**
MM-SB03-SG-40	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-45	04/29/04	<1.0	<1.0	<1.0	**2.1**
MM-SB03-SG-50	04/29/04	<1.0	<1.0	<1.0	**2.4**
MM-SB03-SG-60	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-70	04/29/04	<1.0	<1.0	<1.0	**3.7**
MM-SB03-SG-80	04/29/04	<1.0	<1.0	<1.0	**3.1**
MM-SB03-SG-90	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-100	04/29/04	**1.1**	**4.3**	<1.0	<1.0
MM-SB03-SG-110	04/29/04	<1.0	<1.0	<1.0	<1.0
MM-SB03-SG-120	04/29/04	**47**	**150**	<10.0	<10.0
MM-SB03-SG-127.5	04/29/04	**520**	**1,000**	**110**	**24**
Magic Metals Soil Bore 4					
MM-SB04-SG-5	04/30/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-10	04/30/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-15	04/30/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-20	04/30/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-25	04/30/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-30	04/30/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-35	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-40	05/03/04	N/A	N/A	N/A	N/A
MM-SB04-SG-45	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-50	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-60	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-70	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-80	05/03/04	<1.0	<1.0	<1.0	**1.7**
MM-SB04-SG-90	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-100	05/03/04	<1.0	<1.0	<1.0	<1.0
MM-SB04-SG-110	05/03/04	**34**	**180**	**16**	<10.0
MM-SB04-SG-120	05/03/04	<1	**2.2**	<1.0	<1.0
MM-SB04-SG-127.5	05/03/04	**260**	**560**	<20	<20

TABLE 3
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ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Precise Products Soil Bore 1					
PP-SB01-SG - 5	05/04/04	<1.0	<1.0	**1.1**	<1.0
PP-SB01-SG - 10	05/04/04	<1.0	<1.0	**1.5**	<1.0
PP-SB01-SG - 15	05/04/04	<1.0	<1.0	**2.8**	<1.0
PP-SB01-SG - 20	05/04/04	<1.0	<1.0	**2.2**	<1.0
PP-SB01-SG - 25	05/04/04	<1.0	<1.0	**3.4**	<1.0
PP-SB01-SG - 30	05/04/04	<1.0	<1.0	**4.1**	<1.0
PP-SB01-SG - 35	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 40	05/05/04	<1.0	<1.0	**1.7**	<1.0
PP-SB01-SG - 45	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 50	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 60	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 70	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 80	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 90	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 100	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 110	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 120	05/05/04	<1.0	<1.0	<1.0	<1.0
PP-SB01-SG - 125	NS	NS	NS	NS	NS
Precise Products Soil Bore 2					
PP-SB02-SG-5	05/07/04	<1.0	<1.0	<1	<1.0
PP-SB02-SG-10	05/07/04	<1.0	<1.0	**2.2**	<1.0
PP-SB02-SG-15	05/07/04	<1.0	<1.0	**20**	<1.0
PP-SB02-SG-20	05/07/04	<1.0	<1.0	**6**	<1.0
PP-SB02-SG-25	05/07/04	<2.0	<2.0	**25**	<1.0
PP-SB02-SG-30	05/07/04	<1.0	<1.0	**6.9**	<1.0
PP-SB02-SG-35	05/07/04	<1.0	<1.0	**12**	<1.0
PP-SB02-SG-40	05/07/04	<1.0	<1.0	**8.3**	<1.0
PP-SB02-SG-45	05/07/04	<1.0	<1.0	**21**	<1.0
PP-SB02-SG-50	05/07/04	<1.0	<1.0	**12**	<1.0
PP-SB02-SG-60	05/07/04	<1.0	<1.0	**34**	<1.0
PP-SB02-SG-70	05/07/04	<1.0	<1.0	**27**	<1.0
PP-SB02-SG-80	05/07/04	<5.0	<5.0	**23**	<1.0
PP-SB02-SG-90	05/07/04	<5.0	<5.0	**9.2**	<5.0
PP-SB02-SG-100	05/07/04	<5.0	<5.0	<5	<1.0
PP-SB02-SG-110	05/07/04	<1.0	<1.0	**5.6**	<1.0
PP-SB02-SG-120	05/07/04	<1.0	<1.0	**3.7**	<1.0
PP-SB02-SG-125	05/07/04	<1.0	<1.0	**6.6**	<1.0

TABLE 3
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ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Precise Products Soil Bore 3					
PP-SB03-SG -5	05/10/04	<1.0	<1.0	**14**	<1.0
PP-SB03-SG -10	05/10/04	<1.0	<1.0	**6.2**	<1.0
PP-SB03-SG -15	05/10/04	<1.0	<1.0	**35**	**3.4**
PP-SB03-SG -20	05/10/04	<1.0	<1.0	**32**	**3**
PP-SB03-SG -25	05/10/04	<1.0	<1.0	**40**	**3.8**
PP-SB03-SG -30	05/10/04	<5.0	<5.0	**48**	<5.0
PP-SB03-SG -35	05/10/04	<5.0	<5.0	**40**	<5.0
PP-SB03-SG -40	05/10/04	<5.0	<5.0	**51**	<5.0
PP-SB03-SG -45	05/10/04	<5.0	<5.0	**44**	<5.0
PP-SB03-SG -50	05/10/04	<5.0	<5.0	**24**	<5.0
PP-SB03-SG -60	05/10/04	<5.0	<5.0	**51**	<5.0
PP-SB03-SG -70	05/10/04	<5.0	<5.0	**52**	<5.0
PP-SB03-SG -80	05/10/04	<5.0	<5.0	**50**	<5.0
PP-SB03-SG -90	05/10/04	<5.0	<5.0	**29**	<5.0
PP-SB03-SG -100	05/11/04	<1.0	<1.0	<1.0	<1.0
PP-SB03-SG -110	05/11/04	<1.0	<1.0	**4**	<1.0
PP-SB03-SG -120	05/11/04	<1.0	<1.0	**3.9**	<1.0
PP-SB03-SG -125	05/12/04	<1.0	<1.0	<1.0	<1.0
Precise Products Soil Bore 4					
PP-SB04-SG-5	05/12/04	<1.0	<1.0	**11**	**2.9**
PP-SB04-SG-10	05/12/04	<1.0	<1.0	**4.7**	<1.0
PP-SB04-SG-15	05/12/04	<1.0	<1.0	**19**	**4**
PP-SB04-SG-20	05/12/04	<1.0	<1.0	**17**	**3.2**
PP-SB04-SG-25	05/12/04	<1.0	<1.0	**20**	**3.5**
PP-SB04-SG-30	05/12/04	<1.0	<1.0	**25**	**4.1**
PP-SB04-SG-35	05/13/04	<1.0	<1.0	**8.2**	<1.0
PP-SB04-SG-40	05/13/04	<1.0	<1.0	**8.7**	<1.0
PP-SB04-SG-45	05/13/04	<1.0	<1.0	**9.8**	<1.0
PP-SB04-SG-50	05/13/04	<1.0	<1.0	**10**	<1.0
PP-SB04-SG-60	05/13/04	<1.0	<1.0	**21**	**1.7**
PP-SB04-SG-70	05/13/04	<1.0	<1.0	**30**	**3**
PP-SB04-SG-80	05/13/04	<1.0	<1.0	**29**	**2.3**
PP-SB04-SG-90	05/13/04	<1.0	<1.0	**4.4**	<1.0
PP-SB04-SG-100	05/13/04	<1.0	<1.0	**3.4**	<1.0
PP-SB04-SG-110	05/13/04	<1.0	<1.0	<1.0	<1.0
PP-SB04-SG-120	05/13/04	<1.0	<1.0	**2.4**	<1.0
PP-SB04-SG-125	05/13/04	<1.0	<1.0	**11**	<1.0

TABLE 3
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Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Osborn Products Soil Bore 1					
OP-SB01-SG-5	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-10	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-15	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-20	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-25	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-30	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-35	05/14/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-40	05/14/04	<1.0	<1.0	**7.6**	<1.0
OP-SB01-SG-45	05/17/04	<1.0	<1.0	**11**	<1.0
OP-SB01-SG-50	05/17/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-60	05/17/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-70	05/17/04	<1.0	<1.0	<1.0	<1.0
OP-SB01-SG-80	05/17/04	<1.0	<1.0	**5.1**	<1.0
OP-SB01-SG-90	05/17/04	**2.4**	<1.0	**10**	<1.0
OP-SB01-SG-100	05/17/04	**5.8**	<1.0	**28**	**1.4**
OP-SB01-SG-110	05/17/04	**5.9**	<1.0	**38**	**1.7**
OP-SB01-SG-120	05/17/04	**2.1**	<1.0	**16**	<1.0
OP-SB01-SG-125	05/17/04	<1.0	<1.0	**4.2**	<1.0
Osborn Products Soil Bore 2					
OP-SB02-SG-5	05/18/04	<1.0	<1.0	<1.0	<1.0
OP-SB02-SG-10	05/18/04	<1.0	<1.0	<1.0	<1.0
OP-SB02-SG-15	05/18/04	<1.0	<1.0	<1.0	<1.0
OP-SB02-SG-20	05/18/04	<1.0	<1.0	<1.0	<1.0
OP-SB02-SG-25	05/18/04	<1.0	<1.0	<1.0	<1.0
OP-SB02-SG-30	05/18/04	<1.0	<1.0	<1.0	<1.0
OP-SB02-SG-35	05/18/04	**25**	<2.0	**26**	<2.0
OP-SB02-SG-40	05/18/04	**20**	<2.0	**74**	**3.5**
OP-SB02-SG-45	05/18/04	NA	NA	NA	NA
OP-SB02-SG-50	05/18/04	**41**	<5.0	**22**	<5.0
OP-SB02-SG-60	05/18/04	**11**	<1.0	**17**	<1.0
OP-SB02-SG-70	05/18/04	<1.0	<1.0	**1.7**	<1.0
OP-SB02-SG-80	05/18/04	<1.0	<1.0	**1.9**	<1.0
OP-SB02-SG-90	05/18/04	**1.8**	<1.0	**2.2**	<1.0
OP-SB02-SG-95	05/18/04	**6.5**	<1.0	**23**	<1.0
OP-SB02-SG-105	05/18/04	**5.7**	<2.0	**28**	<2.0
OP-SB02-SG-115	05/18/04	**5.8**	<2.0	**40**	<2.0
OP-SB02-SG-125	05/18/04	**2.8**	<1.0	**21**	<1.0
BD-1V [1]	05/18/04	**2.6**	<1.0	**21**	<1.0

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Osborn Products Soil Bore 3					
OP-SB03-SG-5	05/19/04	<1.0	<1.0	<1.0	<1.0
OP-SB03-SG-10	05/19/04	<1.0	<1.0	<1.0	<1.0
OP-SB03-SG-15	05/19/04	<1.0	<1.0	<1.0	<1.0
OP-SB03-SG-20	05/19/04	<1.0	<1.0	<1.0	<1.0
OP-SB03-SG-25	05/19/04	<1.0	<1.0	<1.0	<1.0
OP-SB03-SG-30	05/19/04	<1.0	<1.0	**1.5**	<1.0
OP-SB03-SG-35	05/19/04	<1.0	<1.0	**1.3**	<1.0
OP-SB03-SG-40	05/19/04	<1.0	<1.0	**1.5**	<1.0
OP-SB03-SG-45	05/19/04	<1.0	<1.0	**2**	<1.0
OP-SB03-SG-50	05/19/04	<1.0	<1.0	**1.9**	<1.0
OP-SB03-SG-60	05/19/04	<1.0	<1.0	**2.2**	<1.0
OP-SB03-SG-70	05/19/04	<1.0	<1.0	**9**	<1.0
OP-SB03-SG-80	05/19/04	<1.0	<1.0	**12**	<1.0
OP-SB03-SG-90	05/19/04	<1.0	<1.0	**21**	<1.0
OP-SB03-SG-100	05/19/04	<5.0	<5.0	**31**	<5.0
OP-SB03-SG-110	05/19/04	**2.3**	<2.0	**42**	<2
OP-SB03-SG-120	05/19/04	<2.0	<2.0	**28**	<2.0
OP-SB03-SG-125	05/19/04	<2.0	<2.0	**21**	<2.0
Osborn Products Soil Bore 4					
OP-SB04-SG-5	05/20/04	<1.0	<1.0	**2.8**	<1.0
OP-SB04-SG-10	05/20/04	<1.0	<1.0	**7.1**	<1.0
OP-SB04-SG-15	05/20/04	<1.0	<1.0	**7.1**	<1.0
OP-SB04-SG-20	05/20/04	<1.0	<1.0	**6.8**	<1.0
OP-SB04-SG-25	05/20/04	<1.0	<1.0	**6.9**	<1.0
OP-SB04-SG-30	05/20/04	<1.0	<1.0	**8.1**	<1.0
OP-SB04-SG-35	05/20/04	<1.0	<1.0	**8**	<1.0
OP-SB04-SG-40	05/20/04	<1.0	<1.0	**7.1**	<1.0
OP-SB04-SG-45	05/20/04	<1.0	<1.0	**1.8**	<1.0
OP-SB04-SG-50	05/20/04	<1.0	<1.0	**4.1**	<1.0
OP-SB04-SG-60	05/20/04	<1.0	<1.0	**3.2**	<1.0
OP-SB04-SG-70	05/20/04	<1.0	<1.0	**17**	<1.0
OP-SB04-SG-80	05/20/04	**2.7**	<2.0	**18**	<2.0
OP-SB04-SG-90	05/20/04	**3.6**	<2.0	**25**	<2.0
OP-SB04-SG-100	05/20/04	**2.1**	<2.0	**20**	<2.0
OP-SB04-SG-110	05/20/04	**2**	<2.0	**39**	<2.0
OP-SB04-SG-120	05/21/04	<2.0	<2.0	**19**	<2.0
OP-SB04-SG-125	05/21/04	<2.0	<2.0	**15**	<2.0

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
SWMP Soil Bore 1					
SWMP-SB01-SG-5	05/24/04	<1.0	<1.0	**2.4**	<1.0
SWMP-SB01-SG-10	05/24/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB01-SG-15	05/24/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB01-SG-20	05/24/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB01-SG-25	05/24/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB01-SG-30	05/24/04	<1.0	<1.0	<1.0	**2.1**
SWMP-SB01-SG-35	05/24/04	<1.0	<1.0	<1.0	**2**
SWMP-SB01-SG-40	05/24/04	<1.0	<1.0	<1.0	**2**
SWMP-SB01-SG-45	05/24/04	<1.0	<1.0	<1.0	**3.3**
SWMP-SB01-SG-50	05/24/04	<1.0	<1.0	<1.0	**2.4**
SWMP-SB01-SG-60	05/24/04	<1.0	<1.0	<1.0	**3.7**
SWMP-SB01-SG-70	05/24/04	<1.0	<1.0	<1.0	**4.1**
SWMP-SB01-SG-80	05/24/04	<1.0	<1.0	**1.4**	**5.7**
SWMP-SB01-SG-90	05/24/04	<1.0	<1.0	**1.6**	**6**
SWMP-SB01-SG-99.5	05/24/04	<1.0	<1.0	<1.0	**2.4**
SWMP Soil Bore 2					
SWMP-SB02-SG-5	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-10	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-15	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-20	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-25	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-30	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-35	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB02-SG-40	05/25/04	<1.0	<1.0	**1.9**	**2.3**
SWMP-SB02-SG-45	05/25/04	<1.0	<1.0	**2.4**	**2.2**
SWMP-SB02-SG-50	05/25/04	<1.0	<1.0	**1.6**	**1.5**
SMW-BD-1V[2]	05/25/04	<1.0	<1.0	**2**	**1.7**
SWMP-SB02-SG-60	05/25/04	<1.0	<1.0	**3.5**	**3.0**
SWMP-SB02-SG-70	05/25/04	<1.0	<1.0	**4.8**	**5.2**
SWMP-SB02-SG-80	05/25/04	<1.0	<1.0	**5.6**	**6.0**
SWMP-SB02-SG-90	05/25/04	<1.0	<1.0	**1.6**	**1.9**
SWMP-SB02-SG-99.5	05/25/04	<1.0	<1.0	**1.3**	**2.1**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
SWMP Soil Bore 3					
SWMP-SB03-SG-5	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB03-SG-10	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB03-SG-15	05/25/04	<1.0	<1.0	<1.0	**1.1**
SWMP-SB03-SG-20	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB03-SG-25	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB03-SG-30	05/25/04	<1.0	<1.0	<1.0	**1.1**
SWMP-SB03-SG-35	05/25/04	<1.0	<1.0	<1.0	**2.1**
SWMP-SB03-SG-40	05/25/04	<1.0	<1.0	<1.0	**2.5**
SWMP-SB03-SG-45	05/25/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB03-SG-50	05/25/04	<1.0	<1.0	<1.0	**2.3**
SWMP-SB03-SG-60	05/25/04	<1.0	<1.0	**3.9**	**5.5**
SWMP-SB03-SG-70	05/25/04	<1.0	<1.0	**3.7**	**5.4**
SWMP-SB03-SG-80	05/25/04	<1.0	<1.0	**4.7**	**6.5**
SWMP-SB03-SG-90	05/25/04	<1.0	<1.0	**5.9**	**7.1**
SWMP-SB03-SG-99.5	05/25/04	<1.0	<1.0	**2.0**	**1.6**
SWMP Soil Bore 4					
SWMP-SB04-SG-5	05/26/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB04-SG-10	05/26/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB04-SG-15	05/26/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB04-SG-20	05/26/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB04-SG-25	05/26/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB04-SG-30	05/26/04	<1.0	<1.0	<1.0	<1.0
SWMP-SB04-SG-35	05/26/04	<1.0	<1.0	**2.9**	**2.6**
SWMP-SB04-SG-40	05/26/04	<1.0	<1.0	**5**	**4.1**
SWMP-SB04-SG-45	05/26/04	<1.0	<1.0	**6.1**	**6.2**
SWMP-SB04-SG-50	05/26/04	<1.0	<1.0	**9**	**8.7**
SWMP-SB04-SG-60	05/26/04	<1.0	<1.0	**2.3**	**1.8**
SWMP-SB04-SG-70	05/26/04	<1.0	<1.0	**3.1**	**4.3**
SWMP-SB04-SG-80	05/26/04	<1.0	<1.0	**20**	**18**
SWMP-SB04-SG-90	05/26/04	<1.0	<1.0	**9.1**	**9.3**
SWMP-SB04-SG-99.5	05/26/04	<1.0	<1.0	**3.4**	**4.2**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
SWMP Soil Bore 5					
SWM-SB05-SG -5	10/23/06	<1.0	<1.0	<1.0	<1.0
SWM-SB05-SG -10	10/23/06	NS	NS	NS	**1.5**
SWM-SB05-SG -15	10/23/06	<1.0	<1.0	<1.0	**2.0**
SWM-SB05-SG -20	10/24/06	<1.0	<1.0	<1.0	<1.0
SWM-SB05-SG -25	10/24/06	<1.0	<1.0	<1.0	<1.0
SWM-SB05-SG -30	10/24/06	<1.0	<1.0	<1.0	**1.3**
SWM-SB05-SG -35	10/24/06	<1.0	<1.0	<1.0	**1.6**
SWM-SB05-SG -40	10/24/06	<1.0	<1.0	<1.0	<1.0
SWM-SB05-SG -45	10/24/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	**2.8/3.0**
SWM-SB05-SG -50	10/24/06	<1.0	<1.0	<1.0	<1.0
SWM-SB05-SG -60	10/24/06	<1.0	<1.0	<1.0	<1.0
SWM-SB05-SG -70	10/24/06	<1.0	<1.0	**1.4**	**6.3**
SWM-SB05-SG -80	10/24/06	<1.0/<1.0	<1.0/<1.0	**1.8/1.3**	**7.8/5.5**
SWM-SB05-SG -90	10/24/06	<1.0	<1.0	**2.3**	**7.4**
SWM-SB05-SG -100	10/24/06	<1.0	<1.0	**2.8**	**7.2**
SWM-SB05-SG -110	10/24/06	<1.0	<1.0	**2.3**	**5.6**
SWM-SB05-SG -120	10/24/06	<1.0	<1.0	**3.7**	**3.5**
SWM-SB05-SG -130	10/24/06	<1.0	<1.0	**24**	**2.9**
SWMP Soil Bore 6					
SWM-SB06-SG -5	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -10	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -15	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -20	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -25	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -30	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -35	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -40	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -45	10/25/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
SWM-SB06-SG -50	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -60	10/25/06	<1.0	<1.0	<1.0	<1.0
SWM-SB06-SG -70	10/25/06	<1.0	<1.0	<1.0	**2.6**
SWM-SB06-SG -80	10/25/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	**4.5/4.8**
SWM-SB06-SG -90	10/25/06	<1.0	<1.0	<1.0	**4.5**
SWM-SB06-SG -100	10/25/06	<1.0	<1.0	<1.0	**6.1**
SWM-SB06-SG -110	10/25/06	<1.0	<1.0	**1.4**	**8.2**
SWM-SB06-SG -120	10/25/06	<1.0	<1.0	<1.0	**4.7**
SWM-SB06-SG -130	10/25/06	<1.0	<1.0	**4.5**	**3.1**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
SWMP Soil Bore 7					
SWM-SB07-SG -5	10/26/06	<1.0	<1.0	<1.0	<1.0
SWM-SB07-SG -10	10/26/06	<1.0	<1.0	<1.0	**2.8**
SWM-SB07-SG -15	10/26/06	<1.0	<1.0	<1.0	**3.0**
SWM-SB07-SG -20	10/26/06	<1.0	<1.0	<1.0	**2.7**
SWM-SB07-SG -25	10/26/06	<1.0	<1.0	<1.0	**2.2**
SWM-SB07-SG -30	10/26/06	<1.0	<1.0	<1.0	**1.5**
SWM-SB07-SG -35	10/26/06	<1.0	<1.0	<1.0	**7.7**
SWM-SB07-SG -40	10/26/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	**2.1/2.7**
SWM-SB07-SG -45	10/26/06	<1.0	<1.0	**2.3**	**8.7**
SWM-SB07-SG -50	10/26/06	<1.0	<1.0	**2.7**	**9.4**
SWM-SB07-SG -60	10/26/06	<1.0	<1.0	<1.0	**1.5**
SWM-SB07-SG -70	10/26/06	<1.0	<1.0	**3.5**	**9.4**
SWM-SB07-SG -80	10/26/06	<1.0/<1.0	<1.0/<1.0	**3.1/3.5**	**8.2/9.1**
SWM-SB07-SG -90	10/27/06	<1.0	<1.0	**17**	**29**
SWM-SB07-SG -100	10/27/06	<1.0	<1.0	**11**	**18**
SWM-SB07-SG -110	10/27/06	<1.0	<1.0	**18**	**26**
SWM-SB07-SG -120	10/27/06	<1.0	<1.0	**3.2**	**2.9**
SWM-SB07-SG -130	10/27/06	<1.0	<1.0	**11**	**1.4**
SWMP Soil Bore 8					
SWM-SB08-SG -5	10/30/06	<1.0	<1.0	<1.0	<1.0
SWM-SB08-SG -10	10/30/06	<1.0	<1.0	<1.0	**1.3**
SWM-SB08-SG -15	10/30/06	<1.0	<1.0	<1.0	<1.0
SWM-SB08-SG -20	10/30/06	<1.0	<1.0	<1.0	<1.0
SWM-SB08-SG -25	10/30/06	<1.0	<1.0	<1.0	<1.0
SWM-SB08-SG -30	10/30/06	<1.0	<1.0	<1.0	<1.0
SWM-SB08-SG -35	10/30/06	<1.0	<1.0	**2.6**	**5.4**
SWM-SB08-SG -40	10/30/06	<1.0/<1.0	<1.0/<1.0	<1.0/**1.0**	**1.6/1.7**
SWM-SB08-SG -45	10/30/06	<1.0	<1.0	<1.0	<1.0
SWM-SB08-SG -50	10/30/06	<1.0	<1.0	**1.3**	**2.0**
SWM-SB08-SG -60	10/30/06	<1.0	<1.0	**4.1**	**5.3**
SWM-SB08-SG -70	10/30/06	<1.0	<1.0	**10**	**14**
SWM-SB08-SG -80	10/30/06	<1.0/<1.0	<1.0/<1.0	**12/14**	**17/20**
SWM-SB08-SG -90	10/30/06	<1.0	<1.0	**14**	**13**
SWM-SB08-SG -100	10/30/06	<1.0	<1.0	**17**	**8.7**
SWM-SB08-SG -110	10/30/06	<1.0	<1.0	**53**	**49**
SWM-SB08-SG -120	10/30/06	<1.0	<1.0	**39**	**35**
SWM-SB08-SG -130	10/30/06	NS	NS	NS	NS

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
SWMP Soil Bore 9					
SWM-SB09-SG -5	10/31/06	<1.0	<1.0	<1.0	<1.0
SWM-SB09-SG -10	10/31/06	<1.0	<1.0	<1.0	<1.0
SWM-SB09-SG -15	10/31/06	<1.0	<1.0	<1.0	**1.1**
SWM-SB09-SG -20	10/31/06	<1.0	<1.0	<1.0	<1.0
SWM-SB09-SG -25	10/31/06	<1.0	<1.0	<1.0	**1.7**
SWM-SB09-SG -30	10/31/06	<1.0	<1.0	<1.0	<1.0
SWM-SB09-SG -35	10/31/06	<1.0	<1.0	**1.9**	**2.9**
SWM-SB09-SG -40	10/31/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
SWM-SB09-SG -45	10/31/06	<1.0	<1.0	**3.9**	**5.7**
SWM-SB09-SG -50	10/31/06	<1.0	<1.0	**4.0**	**5.5**
SWM-SB09-SG -60	10/31/06	<1.0	<1.0	**1.8**	**2.0**
SWM-SB09-SG -70	11/01/06	<1.0	<1.0	**3.2**	**3.4**
SWM-SB09-SG -80	11/01/06	<1.0/<1.0	<1.0/<1.0	**20/18**	**23/21**
SWM-SB09-SG -90	11/01/06	<1.0	<1.0	**18**	**16**
SWM-SB09-SG -100	11/01/06	<1.0	<1.0	**43**	**26**
SWM-SB09-SG -110	11/01/06	<1.0	<1.0	**63**	**45**
SWM-SB09-SG -120	11/01/06	<1.0	<1.0	**46**	**26**
SWM-SB09-SG -130	11/01/06	<1.0	<1.0	**66**	**36**
Pyramid Industries Soil Bore 1					
PY-SB01-SG-5	01/24/06	<1.0	<1.0	<1.0	<1.0
PY-SB01-SG-10	01/24/06	<1.0	<1.0	**3.2**	**1.4**
PY-SB01-SG-15	01/24/06	<1.0	<1.0	<1.0	<1.0
PY-SB01-SG-20	01/24/06	<1.0	<1.0	**3.0**	<1.0
PY-SB01-SG-25	01/24/06	<1.0	<1.0	**2.9**	<1.0
PY-SB01-SG-30	01/24/06	<1.0	<1.0	**4.8**	**1.3**
PY-SB01-SG-35	01/24/06	<1.0	<1.0	**8.9**	**2.7**
PY-SB01-SG-40	01/24/06	<1.0	<1.0	**8.1**	**2.2**
PY-SB01-SG-45	01/24/06	<1.0	<1.0	**6.3**	**1.8**
PY-SB01-SG-50	01/24/06	<1.0	<1.0	**5.3**	**1.4**
PY-SB01-SG-55	01/24/06	<1.0	<1.0	**2.9**	<1.0
PY-SB01-SG-60	01/25/06	<1.0	<1.0	<1.0	<1.0
PY-SB01-SG-65	01/25/06	<1.0	<1.0	<1.0	<1.0
PY-SB01-SG-70	01/25/06	<1.0	<1.0	<1.0	<1.0
PY-SB01-SG-75	01/25/06	<1.0	<1.0	**2.4**	<1.0
PY-SB01-SG-80	01/25/06	<1.0	<1.0	**3.2**	<1.0
PY-SB01-SG-85	01/25/06	<1.0	<1.0	**7.4**	**2.4**
PY-SB01-SG-90	01/25/06	<1.0	<1.0	**7.5**	**2.5**
PY-SB01-SG-95	01/25/06	<1.0	<1.0	**7.6**	**2.6**
PY-SB01-SG-100	01/25/06	<1.0	<1.0	**6.2**	**2.4**
PY-SB01-SG-105	01/25/06	<1.0	<1.0	**5.5**	**2.4**
PY-SB01-SG-110	01/25/06	<1.0	<1.0	**5.6**	**2.6**
PY-SB01-SG-115	01/25/06	<1.0	<1.0	**6.1**	**2.9**
PY-SB01-SG-120	01/25/06	<1.0	<1.0	**5.5**	**2.0**
PY-SB01-SG-125	01/25/06	<1.0	<1.0	**7.8**	**3.4**
PY-SB01-SG-130	01/25/06	<1.0	<1.0	**5.3**	**2.4**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Pyramid Industries Soil Bore 2					
PY-SB02-SG-5	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-10	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-15	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-20	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-25	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-30	01/26/06	NS	NS	NS	NS
PY-SB02-SG-35	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-40	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-45	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-50	01/26/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-55	01/27/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-60	01/27/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-65	01/27/06	NS	NS	NS	NS
PY-SB02-SG-70	01/27/06	<1.0	<1.0	<1.0	**1.3**
PY-SB02-SG-75	01/27/06	NS	NS	NS	NS
PY-SB02-SG-80	01/27/06	NS	NS	NS	NS
PY-SB02-SG-85	01/27/06	<1.0	<1.0	<1.0	**1.6**
PY-SB02-SG-90	01/27/06	<1.0	<1.0	<1.0	**3.4**
PY-SB02-SG-95	01/27/06	NS	NS	NS	NS
PY-SB02-SG-100	01/27/06	<1.0	<1.0	<1.0	<1.0
PY-SB02-SG-105	01/27/06	NS	NS	NS	NS
PY-SB02-SG-110	01/27/06	<1.0	**24**	**1.2**	<1.0
PY-SB02-SG-115	01/27/06	NS	NS	NS	NS
PY-SB02-SG-120	01/27/06	<1.0	**11**	**6.7**	<1.0
PY-SB02-SG-125	01/27/06	NS	NS	NS	NS
PY-SB02-SG-130	01/27/06	<1.0	**82**	**19**	<1.0
Pyramid Industries Soil Bore 3					
PY-SB03-SG-5	02/02/06	<1.0	<1.0	<1.0	<1.0
PY-SB03-SG-10	02/02/06	<1.0	<1.0	<1.0	**1.8**
PY-SB03-SG-15	02/02/06	<1.0	<1.0	<1.0	**2.0**
PY-SB03-SG-20	02/02/06	<1.0	<1.0	<1.0	**1.4**
PY-SB03-SG-25	02/02/06	<1.0	<1.0	**1.0**	**2.6**
PY-SB03-SG-30	02/02/06	<1.0	<1.0	**1.1**	**2.6**
PY-SB03-SG-35	02/02/06	<1.0	<1.0	**2.7**	**6.5**
PY-SB03-SG-40	02/02/06	<1.0	<1.0	**2.4**	**6.0**
PY-SB03-SG-45	02/02/06	<1.0	<1.0	**2.9**	**7.1**
PY-SB03-SG-50	02/02/06	<1.0	<1.0	**1.7**	**3.4**
PY-SB03-SG-60	02/03/06	<1.0	<1.0	**2.8**	**4.5**
PY-SB03-SG-70	02/03/06	<1.0	<1.0	**1.2**	**2.2**
PY-SB03-SG-80	02/03/06	<1.0	<1.0	**8.3**	**15**
PY-SB03-SG-90	02/03/06	<1.0	<1.0	**8.1**	**8.4**
PY-SB03-SG-100	02/03/06	<5.0	<1.0	**9.0**	**11**
PY-SB03-SG-110	02/03/06	<5.0	<1.0	**10**	**9.4**
PY-SB03-SG-120	02/03/06	<2.0	<1.0	<1.0	<1.0
PY-SB03-SG-130	02/03/06	<2.0	<1.0	**78**	**59**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Pyramid Industries Soil Bore 4					
PY-SB04-SG-5	02/06/06	<1.0	<1.0	<1.0	<1.0
PY-SB04-SG-10	02/06/06	<1.0	<1.0	<1.0	**1.9**
PY-SB04-SG-15	02/06/06	<1.0	<1.0	<1.0	<1.0
PY-SB04-SG-20	02/06/06	<1.0	<1.0	<1.0	**3.4**
PY-SB04-SG-25	02/06/06	<1.0	<1.0	<1.0	**1.6**
PY-SB04-SG-30	02/06/06	<1.0	<1.0	<1.0	<1.0
PY-SB04-SG-35	02/06/06	<1.0	<1.0	<1.0	**2.7**
PY-SB04-SG-40	02/06/06	<1.0	<1.0	<1.0	**2.8**
PY-SB04-SG-45	02/06/06	<1.0	<1.0	<1.0	**2.8**
PY-SB04-SG-50	02/06/06	<1.0	<1.0	<1.0	**3.6**
PY-SB04-SG-60	02/06/06	<1.0	<1.0	<1.0	**2.7**
PY-SB04-SG-70	02/07/06	<1.0	<1.0	<1.0	**1.4**
PY-SB04-SG-80	02/07/06	<1.0	<1.0	<1.0	**1.4**
PY-SB04-SG-90	02/07/06	<1.0	<1.0	<1.0	<1.0
PY-SB04-SG-100	02/07/06	<1.0	<1.0	<1.0	**2.4**
PY-SB04-SG-110	02/07/06	<1.0	<1.0	<1.0	**3.2**
PY-SB04-SG-120	02/07/06	<1.0	<1.0	**1.8**	**2.6**
PY-SB04-SG-130	02/08/06	<1.0	<1.0	**35**	**25**
Giltspur Exhibits Soil Bore 1					
GS-SB01-SG-5	02/13/06	<1.0	<1.0	**1.8**	<1.0
GS-SB01-SG-10	02/13/06	<1.0	<1.0	**1.1**	<1.0
GS-SB01-SG-15	02/13/06	<1.0	<1.0	**5.9**	**1.5**
GS-SB01-SG-20	02/13/06	<1.0	<1.0	<1.0	<1.0
GS-SB01-SG-25	02/13/06	<1.0	<1.0	**1.7**	<1.0
GS-SB01-SG-30	02/13/06	<1.0	<1.0	**1.5**	<1.0
GS-SB01-SG-35	02/13/06	<1.0	<1.0	**1.3**	<1.0
GS-SB01-SG-40	02/13/06	<1.0	<1.0	**1.8**	<1.0
GS-SB01-SG-45	02/13/06	<1.0	<1.0	**1.9**	<1.0
GS-SB01-SG-50	02/13/06	<1.0	<1.0	**4.2**	<1.0
GS-SB01-SG-60	02/13/06	<1.0	<1.0	**14**	**4.3**
GS-SB01-SG-70	02/13/06	<1.0	<1.0	**13**	**3.8**
GS-SB01-SG-80	02/14/06	<1.0	<1.0	<1.0	<1.0
GS-SB01-SG-90	02/14/06	<1.0	<1.0	**6.1**	**1.5**
GS-SB01-SG-100	02/14/06	<1.0	<1.0	**8.6**	**2.0**
GS-SB01-SG-110	02/14/06	<1.0	<1.0	**5.2**	**1.2**
GS-SB01-SG-120	02/14/06	<1.0	<1.0	<1.0	<1.0
GS-SB01-SG-130	02/14/06	<1.0	<1.0	**3.4**	<1.0

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Giltspur Exhibits Soil Bore 2					
GS-SB02-SG-5	02/15/06	<1.0	<1.0	**3.8**	<1.0
GS-SB02-SG-10	02/15/06	<1.0	<1.0	**4.0**	<1.0
GS-SB02-SG-15	02/15/06	<1.0	<1.0	**9.8**	**1.7**
GS-SB02-SG-20	02/15/06	<1.0	<1.0	**5.8**	<1.0
GS-SB02-SG-25	02/15/06	<1.0	<1.0	**14**	**2.3**
GS-SB02-SG-30	02/15/06	<1.0	<1.0	**5.7**	<1.0
GS-SB02-SG-35	02/15/06	<1.0	<1.0	**8.9**	**1.1**
GS-SB02-SG-40	02/15/06	<1.0	<1.0	**13**	**1.6**
GS-SB02-SG-45	02/15/06	<1.0	<1.0	**7.3**	<1.0
GS-SB02-SG-50	02/15/06	<1.0	<1.0	**3.2**	<1.0
GS-SB02-SG-60	02/15/06	<1.0	<1.0	**29**	**3.4**
GS-SB02-SG-70	02/16/06	<1.0	<1.0	**1.3**	<1.0
GS-SB02-SG-80	02/16/06	<1.0	<1.0	**17**	**2.4**
GS-SB02-SG-90	02/16/06	<1.0	<1.0	**6.8**	<1.0
GS-SB02-SG-100	02/16/06	<1.0/<1.0	<1.0/<1.0	**14/8.6**	**1.8/1.2**
GS-SB02-SG-110	02/16/06	<1.0	<1.0	**1.2**	<1.0
GS-SB02-SG-120	02/16/06	<1.0/<1.0	<1.0/<1.0	**14/8.7**	**1.3/1.0**
Giltspur Exhibits Soil Bore 3					
GS-SB03-SG-5	02/17/06	<1.0	<1.0	<1.0	**1.3**
GS-SB03-SG-10	02/17/06	<1.0	<1.0	<1.0	<1.0
GS-SB03-SG-15	02/17/06	<1.0	<1.0	<1.0	**2.7**
GS-SB03-SG-20	02/17/06	<1.0	<1.0	<1.0	**3.2**
GS-SB03-SG-25	02/17/06	<1.0	<1.0	<1.0	**2.2**
GS-SB03-SG-30	02/17/06	<1.0	<1.0	<1.0	**1.1**
GS-SB03-SG-35	02/17/06	<1.0	<1.0	<1.0	**1.5**
GS-SB03-SG-40	02/17/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
GS-SB03-SG-45	02/17/06	<1.0	<1.0	<1.0	**1.1**
GS-SB03-SG-50	02/17/06	<1.0	<1.0	<1.0	**1.4**
GS-SB03-SG-60	02/20/06	<1.0	<1.0	<1.0	**2.6**
GS-SB03-SG-70	02/20/06	<1.0	<1.0	<1.0	**1.4**
GS-SB03-SG-80	02/20/06	<1.0/<1.0	<1.0/<1.0	**1.8/1.3**	**4.6/4.5**
GS-SB03-SG-90	02/20/06	<1.0	<1.0	**1.3**	**3.1**
GS-SB03-SG-100	02/20/06	<1.0	<1.0	<1.0	**2.7**
GS-SB03-SG-110	02/20/06	<1.0	<1.0	**1.9**	<1.0
GS-SB03-SG-120	02/20/06	<1.0	<1.0	<1.0	<1.0

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Giltspur Exhibits Soil Bore 4					
GS-SB04-SG-5	02/20/06	<1.0	<1.0	<1.0	<1.0
GS-SB04-SG-10	02/20/06	<1.0	<1.0	<1.0	<1.0
GS-SB04-SG-15	02/20/06	<1.0	<1.0	**25**	**3.0**
GS-SB04-SG-20	02/20/06	<1.0	<1.0	**23**	**2.7**
GS-SB04-SG-25	02/20/06	<1.0	<1.0	**25**	**2.7**
GS-SB04-SG-30	02/20/06	<1.0	<1.0	**14**	**1.5**
GS-SB04-SG-35	02/20/06	<1.0	<1.0	**12**	**1.2**
GS-SB04-SG-40	02/20/06	<1.0/<1.0	<1.0/<1.0	**8.7/7/4**	<1.0/<1.0
GS-SB04-SG-45	02/20/06	<1.0	<1.0	**3.5**	<1.0
GS-SB04-SG-50	02/20/06	<1.0	<1.0	**3.3**	<1.0
GS-SB04-SG-60	02/20/06	<1.0	<1.0	**6.6**	<1.0
GS-SB04-SG-70	02/21/06	<1.0	<1.0	**6.9**	<1.0
GS-SB04-SG-80	02/21/06	<1.0/<1.0	<1.0/<1.0	**12/7.6**	<1.0/<1.0
GS-SB04-SG-90	02/21/06	<1.0	<1.0	**1.4**	<1.0
GS-SB04-SG-100	02/21/06	<1.0	<1.0	**13**	**1.5**
GS-SB04-SG-110	02/21/06	<1.0	<1.0	**8.5**	<1.0
GS-SB04-SG-120	02/21/06	<1.0	<1.0	**7.0**	<1.0
Giltspur Exhibits Soil Bore 5					
GS-SB05-SG-5	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-10	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-15	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-20	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-25	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-30	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-35	02/22/06	<1.0	<1.0	<1.0	<1.0
GS-SB05-SG-40	02/22/06	<1.0	<1.0	<1.0	<1.0
Triad Trucking Soil Bore 1					
TT-SB01-SG -5	02/28/06	<1.0	<1.0	<1.0	**11**
TT-SB01-SG -10	02/28/06	<1.0	<1.0	<1.0	**5.5**
TT-SB01-SG -15	02/28/06	<1.0	<1.0	<1.0	**12**
TT-SB01-SG -20	02/28/06	<1.0	<1.0	<1.0	**18**
TT-SB01-SG -25	02/28/06	<1.0	<1.0	<1.0	**13**
TT-SB01-SG -30	02/28/06	<1.0	<1.0	<1.0	**16**
TT-SB01-SG -35	02/28/06	<1.0	<1.0	<1.0	**3.4**
TT-SB01-SG -40	02/28/06	<1.0	<1.0	<1.0	**11**
TT-SB01-SG -45	02/28/06	<1.0	<1.0	<1.0	**28**
TT-SB01-SG -50	02/28/06	<1.0	<1.0	<1.0	**6.7**
TT-SB01-SG -60	02/28/06	<1.0	<1.0	<1.0	**42**
TT-SB01-SG -70	02/28/06	<1.0	<1.0	<1.0	**9.9**
TT-SB01-SG -80	02/28/06	<1.0	<1.0	<1.0	**17/26**
TT-SB01-SG -90	03/01/06	<1.0	<1.0	<1.0	**73**
TT-SB01-SG -100	03/01/06	<1.0	<1.0	<1.0	**9.8**
TT-SB01-SG -110	03/01/06	<1.0	<1.0	<1.0	**9.8**
TT-SB01-SG -120	03/01/06	<1.0	**8.6**	**5.5**	**1.4**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m³)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Triad Trucking Soil Bore 2					
TT-SB02-SG -5	03/01/06	<1.0	<1.0	<1.0	<1.0
TT-SB02-SG -10	03/02/06	<1.0	<1.0	<1.0	**1.2**
TT-SB02-SG -15	03/02/06	<1.0	<1.0	<1.0	**1.7**
TT-SB02-SG -20	03/02/06	<1.0	<1.0	<1.0	**19**
TT-SB02-SG -25	03/02/06	<1.0	<1.0	<1.0	**9.2**
TT-SB02-SG -30	03/02/06	<1.0	<1.0	<1.0	**15**
TT-SB02-SG -35	03/02/06	<1.0	<1.0	<1.0	**13**
TT-SB02-SG -40	03/02/06	<1.0	<1.0	<1.0	**30/31**
TT-SB02-SG -45	03/02/06	<1.0	<1.0	<1.0	**18**
TT-SB02-SG -50	03/02/06	<1.0	<1.0	<1.0	**23**
TT-SB02-SG -60	03/02/06	<1.0	<1.0	<1.0	**29**
TT-SB02-SG -70	03/02/06	<1.0	<1.0	<1.0	**17**
TT-SB02-SG -80	03/02/06	<1.0	<1.0	<1.0	**11/16**
TT-SB02-SG -90	03/02/06	<1.0	<1.0	<1.0	**49**
TT-SB02-SG -100	03/02/06	<1.0	**11**	**1.1**	**5.1**
TT-SB02-SG -110	03/02/06	<1.0	**20**	**7.7**	**52**
TT-SB02-SG -120	03/02/06	<1.0	**20**	**6.9**	**13**
Triad Trucking Soil Bore 3					
TT-SB03-SG -5	03/03/06	<1.0	<1.0	<1.0	**2.2**
TT-SB03-SG -10	03/03/06	<1.0	<1.0	<1.0	**1.8**
TT-SB03-SG -15	03/03/06	<1.0	<1.0	<1.0	**2.1**
TT-SB03-SG -20	03/03/06	<1.0	<1.0	<1.0	**4.0**
TT-SB03-SG -25	03/03/06	<1.0	<1.0	<1.0	**5.5**
TT-SB03-SG -30	03/03/06	<1.0	<1.0	<1.0	**1.2**
TT-SB03-SG -35	03/03/06	<1.0	<1.0	<1.0	**20**
TT-SB03-SG -40	03/03/06	<1.0	<1.0	<1.0	**41/47**
TT-SB03-SG -45	03/03/06	<1.0	<1.0	<1.0	**28**
TT-SB03-SG -50	03/03/06	<1.0	<1.0	<1.0	**6.6**
TT-SB03-SG -60	03/03/06	<1.0	<1.0	<1.0	**28**
TT-SB03-SG -70	03/03/06	<1.0	<1.0	<1.0	**32**
TT-SB03-SG -80	03/03/06	<1.0	<1.0	<1.0	**17/20**
TT-SB03-SG -90	03/03/06	<1.0	**16**	**10**	**9.4**
TT-SB03-SG -100	03/06/06	**12**	**11**	**7.9**	**2.7**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Triad Trucking Soil Bore 4					
TT-SB04-SG -5	03/06/06	<1.0	<1.0	<1.0	**6.8**
TT-SB04-SG -10	03/06/06	<1.0	<1.0	<1.0	**6.4**
TT-SB04-SG -15	03/06/06	<1.0	<1.0	<1.0	**5.0**
TT-SB04-SG -20	03/06/06	<1.0	<1.0	<1.0	**6.2**
TT-SB04-SG -25	03/06/06	<1.0	<1.0	<1.0	**6.6**
TT-SB04-SG -30	03/06/06	<1.0	<1.0	<1.0	**4.2**
TT-SB04-SG -35	03/06/06	**2.1**	**4.8**	<1.0	**14**
TT-SB04-SG -40	03/06/06	<1.0	<1.0	<1.0	**15/16**
TT-SB04-SG -45	03/06/06	<1.0	<1.0	<1.0	NS
TT-SB04-SG -50	03/06/06	<1.0	<1.0	<1.0	**11**
TT-SB04-SG -60	03/06/06	<1.0	<1.0	<1.0	**25**
TT-SB04-SG -70	03/06/06	<1.0	<1.0	<1.0	**12**
TT-SB04-SG -80	03/06/06	<1.0	<1.0	<1.0	**5.4**
TT-SB04-SG -90	03/06/06	**18**	**12**	**1.1**	**19**
TT-SB04-SG -100	03/06/06	**290**	**55**	**14**	**12**
Redburn Tire Soil Bore 1					
RB-SB01-SG -5	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -10	05/01/06	NS	NS	NS	<1.0
RB-SB01-SG -15	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -20	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -25	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -30	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -35	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -40	05/01/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB01-SG -45	05/01/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -50	05/02/06	NS	NS	NS	NS
RB-SB01-SG -60	05/02/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -70	05/02/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -80	05/02/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB01-SG -90	05/02/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -100	05/02/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -110	05/02/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -120	05/02/06	<1.0	<1.0	<1.0	<1.0
RB-SB01-SG -130	05/02/06	<1.0	<1.0	<1.0	<1.0

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Redburn Tire Soil Bore 2					
RB-SB02-SG -5	05/03/06	NS	NS	NS	NS
RB-SB02-SG -10	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -15	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -20	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -25	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -30	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -35	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -40	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -45	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -50	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -60	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -70	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -80	05/03/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB02-SG -90	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -100	05/03/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB02-SG -115	05/03/06	<1.0	<1.0	<1.0	<1.0
RB-SB02-SG -120	05/03/06	NS	NS	NS	NS
RB-SB02-SG -125	05/03/06	<1.0	<1.0	<1.0	<1.0
Redburn Tire Soil Bore 3					
RB-SB03-SG -5	05/04/06	NS	NS	NS	NS
RB-SB03-SG -10	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -15	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -20	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -25	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -30	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -35	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -40	05/04/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB03-SG -45	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -50	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -60	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -70	05/04/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -80	05/04/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB03-SG -90	05/05/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -100	05/05/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -110	05/05/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -120	05/05/06	<1.0	<1.0	<1.0	<1.0
RB-SB03-SG -130	05/05/06	<1.0	<1.0	<1.0	<1.0

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
Redburn Tire Soil Bore 4					
RB-SB04-SG -5	05/12/06	NS	NS	NS	NS
RB-SB04-SG -10	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -15	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -20	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -25	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -30	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -35	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -40	05/12/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB04-SG -45	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -50	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -60	05/12/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -70	05/15/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -80	05/15/06	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0	<1.0/<1.0
RB-SB04-SG -90	05/15/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -100	05/15/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -110	05/15/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -120	05/15/06	<1.0	<1.0	<1.0	<1.0
RB-SB04-SG -130	05/15/06	<1.0	<1.0	<1.0	<1.0
DJK, Inc. Soil Bore 1					
WCP-DJK-1@10'	11/02/15	NA	NA	<0.00537	**0.382**
WCP-DJK-1@30'	11/02/15	NA	NA	<0.0134	**0.703**
WCP-DJK-1@50'	11/02/15	NA	NA	<0.0537	**2.680**
WCP-DJK-1@70'	11/02/15	NA	NA	<0.00537	**0.021**
WCP-DJK-1@90'	11/02/15	NA	NA	**0.0207**	**0.916**
DJK-1@110'	11/03/15	NA	NA	<0.00537	**0.0239**
DJK-11@130'	11/03/15	NA	NA	**0.0163**	<0.0136
DJK-1 Dup [3]	11/03/15	NA	NA	<0.00537	**0.0241**

TABLE 3
Mobile Laboratory Soil Gas Analytical Results for Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
		cis-1,2-DCE	trans-1,2-DCE	TCE	PCE
HCZ Custom Homes Soil Bore 1					
HCZ-SB1@10'	12/07/15	NA	NA	**0.0891**	**3.398**
HCZ-SB1@30'	12/07/15	NA	NA	<1.343	**51.80**
HCZ-SB1@50'	12/07/15	NA	NA	<1.343	**64.21**
HCZ-SB1@70'	12/07/15	NA	NA	<1.343	**34.58**
HCZ-SB1@90'	12/07/15	NA	NA	<0.0537	**3.536**
HCZ-SB1@110'	12/08/15	NA	NA	<0.537	**4.448**
HCZ-SB1@130'	12/08/15	NA	NA	<0.0269	**1.001**
HCZ-SB1 Dup [4]	12/08/15	NA	NA	<0.0269	**0.989**

Notes:

Results in bold indicate concentrations above laboratory detection limits.

[1] = Sample BD-1V is a blind duplicate of OP-SB02-SG-125'

[2] = Sample SWM-BD-1V is a blind duplicate of SWM-SB02-SG-50'

[3] = Sample DJK-1 Dup is a blind duplicate of DJK-1@110'

[4] = Sample HCZ-SB1 Dup is a blind duplicate of HCZ-SB1@130'

NA = not available

All soil gas samples were analyzed onsite. VOC analysis for PCE, TCE, cis-1,2-DCE and trans-1,2-DCE was conducted using EPA Method 8021B (modified).

TABLE 4
Groundwater Grab Sample Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compounds 1,1-DCA (µg/L)	1,1-DCE (µg/L)	*cis*-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	Metals Total Cr (mg/L)	Cr VI (mg/L)	Cr III (mg/L)	Other Detected Analytes	
WCP-25												
WCP-HP-025-121' [1]	04/09/01	<0.3/<0.3	**18/19**	1/1	NA	**38/37**	1/1	NA	NA	NA	Acetone Chloroform	19 UJ/16 UJ 0.6/0.5
WCP-HP-025-131' [1]	04/09/01	1	**120**	8	NA	**190**	3	NA	NA	NA	Chloroform Carbon tetrachloride 1,2-DCA	2 0.6 0.6
WCP-HP-025-141' [1]	04/10/01	0.4 J	**47**	1	NA	**61**	1	NA	NA	NA	Chloroform Carbon tetrachloride	0.8 0.6
WCP-26												
WCP-HP-026-121' [1]	04/05/01	<0.3	<0.3	<0.3	NA	1	0.9	NA	NA	NA	Acetone	10 J
WCP-HP-026-131' [1]	04/05/01	<0.3 J	**310 J**	9 J	NA	**780**	10 J	NA	NA	NA	None	
WCP-HP-026-141' [1]	04/05/01	<0.3	**33**	1	NA	**54**	1 J	NA	NA	NA	Acetone Chloroform	3 J 0.6
WCP-59												
WCP-HP-059-121' [1]	04/02/01	<0.3	**14**	<0.3	NA	**20**	0.9	NA	NA	NA	Chloroform Carbon tetrachloride 1,2-DCA	2 0.8 2
WCP-HP-059-131' [1]	04/03/01	<0.3	10	<0.3	NA	**6**	0.8	NA	NA	NA	Chloroform	2
WCP-HP-059-141' [1]	04/03/01	<0.3	<0.3	<0.3	NA	0.4 J	<0.3	NA	NA	NA	Acetone	4

TABLE 4
Groundwater Grab Sample Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compounds						Metals			Other Detected Analytes	
		1,1-DCA (µg/L)	1,1-DCE (µg/L)	*cis*-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	Total Cr (mg/L)	Cr VI (mg/L)	Cr III (mg/L)		
WCP-61												
WCP-HP-061-121' [1]	03/26/01	<0.3	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	NA	Acetone Chloroform	7 UJ 1 J
WCP-HP-061-131' [1]	03/26/01	<0.3	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	NA	Chloroform Bromodichloromethane	9 2
WCP-62												
WCP-HP-062-121' [1]	03/31/01	<0.3	<0.3	<0.3	NA	<0.3	<0.3	NA	NA	NA	Acetone	4
WCP-HP-062-131' [1]	03/31/01	<0.3	<0.3	<0.3	NA	0.5	<0.3	NA	NA	NA	Chloroform	1
WCP-64												
WCP-HP-064-126' [1]	03/28/01	<0.3	4	<0.3	NA	**100**	**20**	NA	NA	NA	Chloroform	0.5
WCP-HP-064-136' [1]	03/28/01	1	**21**	<0.3	NA	**190**	**25**	NA	NA	NA	Acetone Chloroform	4 J 1
Former Osborn Products Company												
OP-SB01-GW-130' [2]	05/17/04	1.2	**93**	7.1	<0.50	**160**	3.2	**0.24**	<0.020	0.24	Chloroform MTBE	1.6 6.2
OP-SB02-GW-130' [2]	05/18/04	<1.0	**79**	0.73	<0.50	**95**	<0.50	**0.56**	<0.020	0.56	2-butanone 2-hexanone	32 7.3
OP-SB03-GW-130.5' [2]	05/20/04	<1.0	1.5	1.6	<0.50	<0.50	<0.50	0.021	<0.020	0.021	Acetone Chloroform	54 0.51
OP-SB04-GW-130.5' [2]	05/21/04	<1.0	0.88	0.68	<0.50	<0.50	<0.50	0.082	<0.020	0.082	Acetone	21

TABLE 4
Groundwater Grab Sample Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compounds						Metals			Other Detected Analytes	
		1,1-DCA (µg/L)	1,1-DCE (µg/L)	*cis*-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	Total Cr (mg/L)	Cr VI (mg/L)	Cr III (mg/L)		
Former Magic Metal Plating Company												
MM-SB01-GW-135' [2]	04/27/04	<1.0	**38**	4.7	<0.50	**140**	**7.4**	**0.53**	<0.020	0.53	Benzene Chloroform Isopropylbenzene MTBE	1.7 0.83 2.9 120
MM-SB02-GW-135' [2]	04/28/04	<1.0	**24**	5.6	<0.50	**73**	**7.9**	**1.2**	<0.020	1.2	Benzene Chloroform MTBE	1.8 0.97 81
MM-SB03-GW-135' [2]	04/30/04	<1.0	**39**	2.2	<0.50	**150**	**13**	**1.3**	<0.020	1.3	Benzene Chloroform 2-butanone MTBE	1.5 1.5 23 220
MM-SB04-GW-135' [2]	05/03/04	1.4	**55**	3.8	<0.50	**190**	**13**	**0.84**	<0.020	0.84	Benzene Chloroform MTBE	0.9 2.2 43
Former Precise Metal Products Company / Paraflex Machine and Tool Company												
PP-SB01-GW-135' [2]	05/06/04	<1.0	0.72	<0.5	<0.50	**11**	2.9	**1.7**	<0.020	1.7	Chloroform Trichlorofluoromethane MTBE	1.9 16 120
PP-SB02-GW-135' [2]	05/10/04	<1.0	2.9	<0.5	<0.50	**38**	2.3	0.028	<0.020	0.028	Chloroform Trichlorofluoromethane	1.5 8.4
PP-SB03-GW-131.5' [2]	05/12/04	<1.0	0.66	<0.5	<0.50	**19**	1.1	**0.68**	<0.020	0.68	Acetone Chloroform 2-butanone Trichlorofluoromethane	28 1.7 14 3.9
PP-SB04-GW-130' [2]	05/13/04	<1.0	1.6	<0.5	<0.50	**27**	3.2	**0.3**	<0.020	0.3	Chloroform 1,2-DCA Trichlorofluoromethane	2.6 1.0 12

TABLE 4
Groundwater Grab Sample Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compounds						Metals			Other Detected Analytes	
		1,1-DCA (µg/L)	1,1-DCE (µg/L)	*cis* -1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	Total Cr (mg/L)	Cr VI (mg/L)	Cr III (mg/L)		
Former Pyramid Industries												
PY-SB01-GW-145' [3]	01/26/06	NA	**19**	0.59	<0.50	**130**	**12**	NA	NA	NA	Benzene * Carbon Disulfide Chloroform MTBE	2.2 0.53 1.4 67
PY-SB02-GW-145' [3]	01/27/06	NA	**71**	2.2	<0.50	**260**	**5.3**	NA	NA	NA	Benzene * Carbon Disulfide Chloroform MTBE	2.4 1.3 1.7 63
PY-SB03-GW-145' [3]	02/03/06	NA	**35**	1.1	<0.50	**130**	2.1	NA	NA	NA	Acetone Carbon Disulfide Chloroform MTBE	26 1.4 1.6 29
PY-SB04-GW-145' [3]	02/08/06	NA	**38**	0.64	<0.50	**110**	2.4	NA	NA	NA	Acetone Benzene * Carbon Disulfide Chloroform MTBE	87 1.3 42 1.0 170
Former Giltspur Exhibits												
GS-SB01-GW-140' [3]	02/15/06	NA	2.2	<0.50	<0.50	**41**	**5.3**	NA	NA	NA	Acetone Chloroform 1,2-Dichloroethane 4-Methyl-2-pentanone Trichlorofluoromethane	56 4.9 1.7 12 17
GS-SB02-GW-145' [3]	02/17/06	NA	3.1	<0.50	<0.50	**54**	4.4	NA	NA	NA	Chloroform 1,2-Dichloroethane Toluene Trichlorofluoromethane	3.7 1.3 3.4 13
GS-SB03-GW-140' [3]	02/21/06	NA	<0.50	<0.50	<0.50	0.50	1.4	NA	NA	NA	Acetone Chloroform Trichlorofluoromethane	24 0.55 6.1
GS-SB04-GW-140' [3]	02/22/06	NA	0.68	<0.50	<0.50	**30**	2.3	NA	NA	NA	Chloroform Trichlorofluoromethane	2.8 8.4
GS-SB05-GW [3]	11/01/07	NA	NA	NA	NA	5.9	36	NA	NA	NA		
GS-SB06-GW [3]	11/01/07	NA	NA	NA	NA	<0.50	<0.50	NA	NA	NA		

TABLE 4
Groundwater Grab Sample Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compounds						Metals			Other Detected Analytes	
		1,1-DCA (µg/L)	1,1-DCE (µg/L)	*cis*-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	Total Cr (mg/L)	Cr VI (mg/L)	Cr III (mg/L)		
Former Triad Trucking Company												
TT-SB01-GW-135' [3]	03/01/06	NA	2.0	<0.50	<0.50	**17**	**6.5**	NA	NA	NA	Benzene Bromodichloromethane Chloroform Ethylbenzene n-Propylbenzene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	0.73 0.74 6.6 16 4.1 22 8.0
TT-SB02-GW-135' [3]	03/02/06	NA	2.5	<0.50	<0.50	**16**	**14**	NA	NA	NA	Benzene Bromodichloromethane Chloroform	1.6 0.58 2.4
Redburn Tire Company												
RB-SB01-GW-140' [3]	05/02/06	NA	<0.50	<0.50	<0.50	<0.50	0.77	NA	NA	NA	Chloroform Trichlorofluoromethane	2.2 12
RB-SB02-GW-140' [3]	05/04/06	NA	<0.50	<0.50	<0.50	0.56	<0.50	NA	NA	NA	Chloroform Trichlorofluoromethane 4-Methyl-2-pentanone	1.9 6.6 6.8
RB-SB03-GW-140' [3]	05/05/06	NA	<0.50	<0.50	<0.50	4.8	<0.50	NA	NA	NA	Chloroform Trichlorofluoromethane 4-Methyl-2-pentanone	1.9 6.6 6.8
RB-SB04-GW-140' [3]	05/16/06	NA	<0.50	<0.50	<0.50	0.7	<0.50	NA	NA	NA	Chloroform Trichlorofluoromethane 4-Methyl-2-pentanone	0.76 3.1 5.9
WCP-213 [3]	06/30/06	<1.0	<0.50	<0.50	<0.50	2.2	**320**	NA	NA	NA	Acetone 4-Isopropyltoluene Trichlorofluoromethane	27 4.7 230

TABLE 4
Groundwater Grab Sample Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compounds 1,1-DCA (µg/L)	1,1-DCE (µg/L)	*cis*-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	Metals Total Cr (mg/L)	Cr VI (mg/L)	Cr III (mg/L)	Other Detected Analytes	
Former Southwest Metal Industries												
WCP-26 [2]	05/25/04	<1.0	**63**	2.6	<0.50	**130**	3.6	**0.33**	0.37	<0.01	Chloroform Trichlorofluoromethane	0.91 2.9
SWM-SB05-GW-145' [3]	10/24/06	NA	NA	8.3	<2.0	**110**	4.8	NA	NA	NA	NA	
SWM-SB06-GW-145' [3]	10/25/06	NA	NA	<2.0	<2.0	**11**	2.1	NA	NA	NA	NA	
SWM-SB07-GW-145' [3]	10/25/06	NA	NA	<10	<10	**280**	**<10**	NA	NA	NA	NA	
SWM-SB08-GW-145' [3]	10/30/06	NA	NA	<20	<20	**500**	**25**	NA	NA	NA	NA	
SWM-SB09-GW-145' [3]	11/01/06	NA	NA	<20	<20	**400**	**31**	NA	NA	NA	NA	
DJK, Inc.												
WCP-DJK-1 @ 139.7'	11/03/15	<0.500	<0.500	<0.500	NA	<0.500	<0.500	NA	NA	NA	None	
ADEQ AWQS		**NE**	**7**	**70**	**100**	**5**	**5**	**0.1**	**0.1**	**NE**		

Notes:

µg/L = micrograms per Liter
mg/L = milligrams per kilogram
1,1-DCA = 1,1-dichloroethane
1,2-DCA = 1,2-dichloroethane
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
TCE = trichloroethene
PCE = tetrachloroethene
Cr = chromium
Cr VI = hexavalent chromium
Cr III = trivalent chromium
J = estimated value
U = Analyte was not detected above the numerical quantitation limit (quantitation limit was raised during the validation process.)
MTBE = methyl tert-butyl ether
< = less than detection limit
ADEQ AWQS = Arizona Department of Environmental Quality Aquifer Water Quality Standard
NA = not analyzed, results not available
NE = none established

Bold results indicate value greater than or equal to the ADEQ AWQS.
Volatile Organic Compounds were analyzed by US EPA Method 8260B
Total chromium analyzed by US EPA Method 6010B
Chromium VI analyzed by US EPA Method 3500-Cr D
Chromium III results determined by calculation (Cr III = Total Cr - Cr VI)
Regulatory Source: Aquifer Water Quality Standard 2009

[1] **= data from Weston Solutions, 2003**
[2] **= data from Locus, 2005**
[3] **= data from Locus, 2008**

TABLE 5
Monitoring Well Network and Construction Details
West Central Phoenix
North Canal Plume WQARF Site

Well Name	Private Property	ADEQ Well Number	ADWR 55-No.[a]	Install Date	Well Depth (ft bgs)	Casing Diameter (inch)	Screened Interval (ft bgs)	Easting [b]	Northing [b]	Measuring Point Elevation (ft amsl)
WCP-13M		64632	55-700995	17-Dec-97	288	4	248-288	632826.950	905885.820	1110.46
WCP-25	X	59407	55-585993	10-Apr-01	146	4	106-146	632372.020	906834.970	1112.44
WCP-26	X	59408	55-585994	5-Apr-01	149	4	109-149	632400.510	906615.960	1111.67
WCP-27	X	64667	55-901261	10-Nov-04	165	4	125-165	632473.440	905990.870	1109.60
WCP-34L		58435	55-573079	28-Sep-99	140	4	100-140	631038.210	908114.890	1118.11
WCP-59	X	59410	55-585992	4-Apr-01	144	4	104-144	632321.810	907018.120	1112.47
WCP-60	X	64668	55-901262	6-Dec-04	165	4	125-165	631011.130	906116.530	1108.53
WCP-61		59411	55-585619	27-Mar-01	146	4	106-146	631957.780	907258.810	1112.68
WCP-62		59412	55-585618	31-Mar-01	148	4	108-148	631805.580	906078.650	1108.96
WCP-63M		64669	55-901263	11-Dec-04	270	4	250-270	632840.270	906174.240	1110.99
WCP-64		59413	55-585616	29-Mar-01	149	4	109-149	632871.400	905846.920	1110.04
WCP-68S	X	59278	55-581248	29-Jul-00	150	4	110-150	629799.440	908031.450	1118.33
WCP-69S		59279	55-582566	7-Sep-00	160	4	110-160	629462.960	909048.210	1123.05
WCP-205		64670	55-901264	15-Dec-04	165	4	120-165	634184.560	905762.550	1112.27
WCP-206		64671	55-901265	9-Dec-04	165	4	120-165	633498.360	906702.960	1113.36
WCP-207		64672	55-901266	21-Dec-04	165	4	120-165	632940.200	905060.030	1108.08
WCP-208S		65138	55-901688	29-Mar-05	165	4	125-165	634228.630	906221.330	1113.73
WCP-208M		65139	55-901688	29-Mar-05	276	4	256-276	634228.630	906221.330	1113.73
WCP-209	X	65140	55-901689	4-Apr-05	165	4	120-165	631195.140	906727.190	1111.01
WCP-210		65141	55-901693	6-Apr-05	165	4	120-165	632840.940	906185.350	1110.47
WCP-211		65142	55-901691	1-Apr-05	165	4	120-165	633757.430	905765.570	1112.19
WCP-MW-212	X	67102	55-903732	28-Apr-06	165	4	120-165	631031.080	907281.540	1113.33
WCP-MW-213		67103	55-903735	30-Jun-06	165	4	120-165	634008.430	906626.840	1114.60
WCP-MW-214	X	67104	55-903958	10-Feb-06	165	4	120-165	632479.490	906355.250	1110.04
WCP-MW-215	X	67105	55-904203	23-Feb-06	150	2	120-150	631223.550	906925.780	1112.54
WCP-MW-216	X	67106	55-904309	27-Feb-06	165	4	120-165	631495.450	906859.700	1111.55
WCP-MW-217	X	67107	55-904517	24-Mar-06	165	4	120-165	634560.170	905489.890	1112.06
WCP-MW-218		67108	55-904646	27-Jun-06	165	4	120-165	633775.240	906629.180	1114.28
WCP-MW-219	X	67109	55-904851	9-May-06	165	4	120-165	631590.700	906358.870	1109.65
WCP-225		67439	55-905709	7-Dec-06	165	4	120-165	630363.600	907210.950	1114.28
WCP-226		67440	55-905708	12-Dec-06	165	4	120-165	634000.570	905065.400	1109.01
WCP-227	DRY	67441	55-905712	3-Nov-06	165	4	120-165	634071.263	906149.269	1109.74
WCP-228		68818	55-906488	28-Mar-07	165	4	120-165	629743.570	907209.990	1114.50
WCP-229		68819	55-906489	3-Apr-07	165	4	120-165	629810.150	906712.810	1112.33
WCP-230		68820	55-906490	26-Mar-07	165	4	120-165	630370.790	907561.640	1116.43
WCP-230M		80745	55-918969	29-Jan-16	280	4	260-280	630378.230	907578.460	1116.70
WCP-231		68821	55-906491	9-Apr-07	165	4	120-165	632852.750	907519.660	1114.56
WCP-232		68822	55-906492	12-Apr-07	165	4	120-165	634993.090	907460.230	1119.20
WCP-233		68823	55-906493	17-Apr-07	165	4	120-165	634985.310	906778.420	1117.21
WCP-234		69238	55-906887	15-Jun-07	165	4	120-165	630365.500	906274.800	1109.96
WCP-241		80510	55-918707	4-Nov-15	165	4	125-165	629768.890	906130.370	1109.50
WCP-242		81296	55-226360	10-Oct-16	190	4	140-185	629703.944	906149.269	1101.97
DJM MW-13	X	67101	55-911190	30-Sep-09	150	4	120-150	632194.710	906041.940	1109.65
TRIAD MW-10	X	65205	55-204922	14-Oct-04	150	4	100-150	632953.720	907126.010	1113.88
TRIAD MW-11	X	65206	55-204923	26-Oct-04	150	4	100-150	633100.780	907196.670	1114.35
TRIAD MW-12	X	65207	55-204924	28-Oct-04	150	4	100-150	633121.650	907029.490	1113.70
TRIAD MW-13	X	67100	55-210075	28-Feb-06	150	4	100-150	633291.610	907327.720	1115.19
TRIAD MW-14		67437	55-210073	10-Mar-06	150	4	100-150	632851.210	906971.350	1112.76
TRIAD MW-15		67438	55-210074	20-Mar-06	150	4	100-150	632852.330	907186.970	1113.18

Notes:

[a] *Arizona Department of Water Resources (ADWR) numbers*

[b] *Eastings and Northings (except WCP-242) based on modified state plane coordinates using the North American Datum of 1983 (NAD 83). Surveyed by Starlink Surveying, Inc. February 17, 2014 through February 26, 2014.*

ft bgs = Feet below ground surface

ft amsl = Feet above mean sea level

NA not available at time of RI, Installed by Geosyntec 2017

TABLE 6
Vertical Profile Groundwater Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Depth (ft)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-27	09/05/07	135	1.1	**47**	7.4	**230**	**7.0**	Benzene Isopropylbenzene Chloroform	2.7 3.0 1.3
	09/05/07	145	1.1	**46**	7.4	**260**	**6.3**	Benzene 1,1,2-Trichloroethanene Chloroform	2.7 0.52 1.2
	09/05/07	150	1.0	**45**	7.1	**240**	**6.9**	Benzene Chloroform Isopropylbenzene	2.6 1.2 3.0
	09/05/07	156	1.0	**43**	7.1	**250**	**7.0**	Benzene Chloroform Isopropylbenzene 1,1,2-Trichloroethanene	2.6 1.2 3.2 0.52
	09/05/07	162	1.1	**46**	7.3	**240**	**7.3**	Benzene Chloroform 1,1,2-Trichloroethane Isopropylbenzene	2.7 1.2 0.54 3.3
WCP-214	09/05/07	135	1.0	**70**	38	**280**	**8.8**	Chloroform	2.6
	09/05/07	145	<1.0	**69**	38	**250**	**8.9**	Chloroform	2.6
	09/05/07	150	1.0	**70**	39	**260**	**8.4**	Chloroform	2.7
	09/05/07	156	1.0	**69**	39	**270**	**7.9**	Chloroform	2.6
	09/05/07	162	1.7	**55**	**210**	**70**	**3.8**	Chloroform	1.1
WCP-226	09/05/07	150	<1.0	<0.50	<0.50	0.70	<0.50	Chloroform	1.1
	09/05/07	156	<1.0	<0.50	<0.50	1.0	<0.50	Chloroform	0.94
	09/05/07	162	<1.0	<0.50	<0.50	1.1	<0.50	Chloroform	1.1
	09/05/07	167	<1.0	<0.50	<0.50	1.0	<0.50	Chloroform	0.94
	09/05/07	173	<1.0	<0.50	<0.50	0.81	<0.50	Chloroform	0.91
WCP-207	09/05/07	145	<1.0	4.2	0.71	**76**	3.1	Bromodichloromethane Chloroform	0.55 1.6
	09/05/07	150	<1.0	4.2	0.76	**78**	3.1	Bromodichloromethane Chloroform	0.63 1.9
	09/05/07	154	<1.0	4.2	0.76	**79**	3.2	Bromodichloromethane Chloroform	0.61 1.8
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 6
Vertical Profile Groundwater Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Depth (ft)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-207 (Cont'd)	09/05/07	158	<1.0	4.0	0.70	**78**	3.1	Bromodichloromethane Chloroform	0.59 1.8
	09/05/07	162	<1.0	4.0	0.71	**78**	2.8	Bromodichloromethane Chloroform	0.59 1.8
WCP-213	09/06/07	135	<1.0	<0.50	<0.50	2.2	**290**	Carbon disulfide Trichlorofluoromethane	3.2 **1200**
	09/06/07	145	<1.0	<0.50	<0.50	**2.0**	**220**	Carbon disulfide Trichlorofluoromethane	1.8 **1300**
	09/06/07	150	<1.0	<0.50	<0.50	**1.9**	**190**	Carbon disulfide Chloroform Trichlorofluoromethane	0.61 0.54 **550**
	09/06/07	156	<1.0	<0.50	<0.50	**1.8**	**200**	Carbon disulfide Chloroform Trichlorofluoromethane	0.60 0.53 **560**
	09/06/07	162	<1.0	<0.50	<0.50	**1.9**	**210**	Carbon disulfide Chloroform Trichlorofluoromethane	0.74 0.52 **570**
WCP-215	09/06/07	135	<1.0	3.6	<0.50	**81**	**5.9**	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	**6.4** 1.3 11
	09/06/07	140	<1.0	3.4	<0.50	**78**	**5.9**	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	**6.1** 1.3 11
	09/06/07	144	<1.0	3.4	<0.50	**79**	**5.7**	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	**6.1** 1.3 11
	09/06/07	148	<1.0	3.3	<0.50	**74**	3.1	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	**6.1** 1.3 11
WCP-225	09/06/07	138	<1.0	**73**	<0.50	**110**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.7 1.8 3.6
	09/06/07	144	<1.0	**72**	<0.50	**110**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.7 1.8 3.7
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 6
Vertical Profile Groundwater Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Depth (ft)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-225 (Cont'd)	09/06/07	150	<1.0	**71**	<0.50	**110**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.7 3.6
	09/06/07	156	<1.0	**71**	<0.50	**110**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.7 3.6
	09/06/07	162	<1.0	**73**	<0.50	**110**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.7 1.8 3.5
WCP-227	09/06/07	135	<1.0	**81**	0.98	**180**	3.8	Chloroform	2.3
	09/06/07	145	<1.0	**79**	0.92	**170**	3.0	Chloroform	2.3
	09/06/07	150	<1.0	**79**	0.88	**160**	3.2	Chloroform	2.3
	09/06/07	156	<1.0	**77**	0.89	**170**	3.3	Chloroform	2.3
	09/06/07	162	<1.0	**77**	0.87	**160**	3.3	Chloroform	2.3
WCP-230	09/06/07	138	<1.0	**73**	<0.50	**100**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.9 1.5 4.3
	09/06/07	144	<1.0	**71**	<0.50	**99**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.8 1.5 4.2
	09/06/07	150	<1.0	**71**	<0.50	**99**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.8 1.4 4.4
	09/06/07	156	<1.0	**70**	<0.50	**97**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.7 1.4 4.3
	09/06/07	162	<1.0	**68**	<0.50	**97**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.7 1.5 4.3
	3/6/2015 [1]	132.5	<0.500	**59.5**	<0.500	**118**	<0.500	1,2-Dichloroethane 2-Butanone Acetone Chloroform Trichlorofluoromethane	2.16 1,990 1,030 1.85 2.46
	3/6/2015 [1]	140	<5.00	**55.0**	<5.00	**111**	<5.00	2-Butanone Acetone	523 287
	3/6/2015 [1]	147.5	<5.00	**55.1**	<5.00	**114**	<5.00	2-Butanone Acetone	1,740 908
	3/6/2015 [1]	156	<5.00	**75.6**	<5.00	**134**	<5.00	2-Butanone Acetone	1,920 1,010
	3/6/2015 [1]	163.5	<5.00	**71.1**	<5.00	**122**	<5.00	2-Butanone Acetone	1,890 1,030
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 6
Vertical Profile Groundwater Analytical Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Depth (ft)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
TRIAD-15	09/06/07	132	<1.0	**55**	<0.50	**86**	1.1	Chloroform	**11**
	09/06/07	138	<1.0	**54**	<0.50	**85**	0.99	Chloroform	**12**
	09/06/07	142	<1.0	**53**	<0.50	**87**	1.1	Chloroform	**11**
	09/06/07	148	<1.0	**51**	<0.50	**86**	1.0	Chloroform	**11**
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

Notes:

VOCs = volatile organic compounds | *µg/L = micrograms per liter* | *ft amsl = feet above mean sea level*
1,1- DCA = 1,1-dichloroethane | *TCE = trichloroethene* | *cis-1,2-DCE = cis-1,2-dichloroethene*
1,1-DCE = 1,1-dichloroethene | *PCE = tetrachloroethene* | *NE = none established*
NM = not measured | *NS = not sampled*
J = estimated value | *< = less than the detection limit*
U = Analyte was not detected above the numerical quantitation limit. (Quantitation limit was raised during validation process.)
**5 = The Aquifer Water Quality Standard (AWQS) for Benzene and 1,2-Dichloroethane is 5 µg/L.*
For all other analytes detected, an AWQS has not been established.

***Bold** results indicate value greater than or equal to the ADEQ Aquifer Water Quality Standard. Two results indicate sample/duplicate sample results.*
All samples collected by permeable diffusion samplers
ADEQ = Arizona Department of Environmental Quality
Regulatory Source: Aquifer Water Quality Standard 2009
Data Source: Locus 2008
[1] 2015 samples collected by Hydro Geo Chem, Inc. All other samples collected by Locus Technologies.

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-13M	03/23/06	7.80	1,485	25.4	NS	NS
	06/08/06	7.73	1,435	25.9	NS	NS
	09/22/06	7.48	1,660	26.2	5.35	423.0
	12/18/06	7.53	1,450	27.2	4.26	325.0
	03/19/07	7.56	1,430	28.0	4.59	318.0
	05/22/07	NS	NS	NS	NS	NS
	12/14/07	NS	NS	NS	NS	NS
	03/17/08	NS	NS	NS	NS	NS
	05/23/08	NS	NS	NS	NS	NS
	07/30/13	7.41	1,261	29.7	0.79	123.3
	02/27/14	7.43	3,072	25.2	0.97	68.0
	02/02/15	7.43	1,874	25.3	1.12	155.5
	11/19/15	7.27	1,920	25.7	1.15	215.3
WCP-25	03/23/04	6.84	1,190	29.0	3.41	238.2
	06/23/04	7.10	2,440	28.0	3.51	112.0
	09/17/04	7.25	1,410	30.0	3.90	112.4
	01/14/05	7.45	1,598	28.6	3.24	210.8
	03/30/05	7.32	1,803	29.2	3.98	25.1
	06/09/05	7.63	1,356	30.5	2.16	118.7
	09/28/05	7.18	823	32.6	3.77	547.0
	12/13/05	7.53	1,600	31.5	4.14	469.0
	03/24/06	7.64	1,710	23.9	3.64	411.8
	06/08/06	7.58	1,523	29.6	NS	NS
	09/20/06	6.68	534	28.3	3.89	395.0
	12/13/06	7.17	1,660	28.0	3.51	356.0
	03/15/07	7.27	1,465	30.4	3.11	270.0
	05/22/07	7.45	1,760	28.9	3.71	389.0
	12/11/07	7.83	120	28.8	2.91	544.0
	03/13/08	8.17	180	26.3	2.95	543.0
	05/20/08	NS	1,680	28.9	2.79	481.0
	07/26/13	7.29	1,380	31.2	0.34	100.5
	02/28/14	7.22	3,299	25.9	1.00	48.7
	01/30/15	7.41	3,525	24.3	1.82	200.4
	11/13/15	7.20	2,060	26.2	0.79	228.5
WCP-26	03/24/04	7.15	1,220	29.2	2.43	188.2
	06/24/04	7.14	2,020	29.0	1.54	136.4
	09/17/04	7.40	1,452	28.0	1.01	133.8
	01/13/05	7.84	1,690	26.4	0.87	96.0
	03/29/05	7.35	1,782	27.7	4.73	445.8
	06/09/05	7.63	1,383	29.6	1.08	118.9
	09/28/05	7.36	1,046	30.4	5.14	532.0
	12/14/05	7.55	1,650	32.1	4.62	426.0
	03/24/06	7.51	1,585	29.9	4.26	318.0
	06/12/06	NS	NS	NS	NS	NS
	09/20/06	6.91	480	28.6	5.25	384.0
	12/13/06	7.20	1,720	27.7	5.10	403.0
	03/13/07	7.34	1,800	29.7	5.32	387.0
	05/21/07	7.48	1,820	29.4	4.74	511.0
	12/11/07	NS	NS	NS	NS	NS
	03/13/08	8.34	320	25.3	4.60	537.0
	05/20/08	7.75	1,600	27.6	4.38	563.0
	07/23/13	7.26	1,485	28.9	0.88	153.4
	03/03/14	7.25	2,030	26.2	1.51	117.8
	02/03/15	7.37	2,170	26.1	0.96	173.4
	11/17/15	7.08	2,318	25.6	2.77	255.3

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-27	01/14/05	7.74	1,986	27.6	3.28	191.4
	03/29/05	7.46	1,981	27.6	0.57	459.7
	06/09/05	7.71	1,311	27.6	2.16	118.7
	09/28/05	7.60	718	30.2	0.13	384.0
	12/08/05	NS	NS	NS	NS	NS
	03/23/06	7.76	1,809	28.0	1.48	298.6
	06/12/06	7.63	1,653	30.2	NS	NS
	09/20/06	7.29	1,950	26.1	0.08	160.0
	12/14/06	7.30	1,870	26.6	0.01	2.2
	03/14/07	7.51	1,900	27.0	0.04	206.0
	05/21/07	7.66	1,940	26.8	0.6	135.0
	12/13/07	7.72	300	22.8	0.16	481.0
	03/13/08	8.18	1,510	26.1	0.11	414.0
	05/22/08	7.63	1,800	27.0	0.32	319.0
	07/25/13	7.26	1,548	26.2	0.69	110.4
	02/19/14	7.19	1,759	23.9	1.10	113.2
	01/28/15	7.53	1,521	24.0	4.43	195.5
	11/16/15	7.31	1,495	23.2	3.25	259.9
WCP-34S	03/14/07	7.46	2,210	28.8	5.34	326.0
	05/16/07	7.58	2,080	28.8	5.38	470.0
	12/05/07	8.00	2,060	31.0	7.48	491.0
	03/07/08	8.17	990	32.3	4.12	492.0
	05/16/08	7.83	2,100	30.0	7.23	527.0
WCP-59	04/01/04	6.86	1,362	29.1	2.41	328.1
	06/23/04	6.94	2,030	28.7	2.08	281.0
	09/17/04	6.70	1,450	29.6	2.86	218.1
	01/14/05	7.83	1,368	28.4	2.04	118.6
	03/29/05	7.40	1,509	28.8	6.00	122.5
	06/07/05	7.57	1,158	29.9	3.24	91.7
	09/27/05	7.43	1,362	30.0	0.96	388.0
	12/13/05	7.57	1,398	31.1	1.09	167.0
	03/27/06	7.48	1,438	29.3	2.50	246.0
	06/05/06	7.51	1,438	30.2	NS	NS
	09/22/06	7.19	1,419	28.4	0.11	200.0
	12/12/06	7.23	1,425	28.9	0.46	224.0
	03/07/07	7.33	1,418	27.9	0.47	172.0
	05/16/07	7.53	1,060	27.8	0.17	286.0
	12/06/07	7.89	1,345	28.9	0.84	386.0
	03/11/08	8.12	760	30.1	0.42	499.0
	05/19/08	7.92	1,342	29.0	1.09	357.0
	08/01/13	7.27	1,319	33.2	0.36	80.2
	03/04/14	7.35	2,137	25.3	0.01	59.9
	02/06/15	7.44	1,762	26.4	3.86	167.6
	11/20/15	7.27	1,722	24.7	1.96	220.3

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-60	01/13/05	7.86	1,556	26.2	1.02	92.3
	03/29/05	7.40	1,733	26.0	5.81	296.2
	06/07/05	7.45	1,345	29.3	3.92	187.4
	09/26/05	7.49	1,158	29.9	4.13	382.0
	12/08/05	7.52	1,155	25.7	6.27	525.0
	03/21/06	7.50	1,282	28.8	4.58	418.0
	06/08/06	7.52	1,215	29.2	NS	NS
	09/19/06	7.13	1,730	26.8	5.62	296.0
	12/13/06	7.19	1,650	26.2	5.89	379.0
	03/12/07	7.35	1,660	26.4	5.97	387.0
	05/21/07	7.48	1,205	25.9	6.08	474.0
	12/11/07	7.58	515	28.9	5.97	566.0
	03/12/08	8.02	750	25.6	4.80	519.0
	05/20/08	7.51	1,130	27.6	5.49	512.0
	08/01/13	7.33	948	28.9	0.46	120.0
	02/25/14	7.31	2,427	24.2	1.46	102.5
	02/04/15	7.60	1,348	24.5	1.04	196.0
	11/20/15	7.45	1,382	23.9	5.62	217.5
WCP-61	03/23/04	6.97	1,442	29.2	3.10	321.7
	06/23/04	7.10	2,130	28.7	1.42	131.8
	09/16/04	7.49	1,525	31.2	2.94	102.3
	01/13/05	7.89	1,707	28.4	3.18	121.3
	03/28/05	7.39	1,872	29.3	--	371.1
	06/07/05	7.56	1,389	30.4	1.97	302.3
	09/26/05	7.51	1,243	29.8	2.38	362.0
	12/08/05	7.53	1,219	28.7	5.51	442.0
	03/21/06	7.61	1,380	29.1	3.48	397.2
	06/05/06	7.50	1,430	29.9	NS	NS
	09/19/06	7.15	1,870	28.6	4.98	279.0
	12/11/06	7.20	1,820	28.2	5.12	282.0
	03/08/07	7.27	1,530	28.4	5.12	374.0
	05/15/07	7.46	1,760	28.7	5.51	382.0
	12/03/07	NS	NS	NS	NS	NS
	03/07/08	8.56	330	30.3	4.64	480.0
	05/15/08	7.69	1,640	29.8	5.38	417.0
	07/23/13	7.27	1,603	29.1	0.58	161.9
	02/19/14	7.18	2,107	27.0	1.05	103.9
	02/11/15	7.36	4,259	27.5	0.92	198.2
	11/20/15	7.32	2,398	27.1	4.81	223.2
WCP-62	03/23/04	6.82	1,600	29.1	2.31	151.3
	06/23/04	7.12	2,350	27.1	2.43	154.7
	09/17/04	7.62	1,393	27.4	2.11	110.6
	01/13/05	7.91	1,603	26.9	1.23	134.6
	03/28/05	7.51	1,682	26.5	6.04	404.7
	06/07/05	7.67	1,349	27.1	2.39	248.7
	09/26/05	7.59	1,039	28.8	3.21	316.0
	12/08/05	7.65	1,600	25.3	6.57	503.0
	03/21/06	7.60	1,520	28.6	4.18	437.6
	06/07/06	7.61	1,410	29.1	NS	NS
	09/19/06	7.31	1,760	27.1	5.91	283.0
	12/11/06	7.32	1,760	28.2	5.48	271.0
	03/12/07	7.46	1,790	26.5	6.28	339.0
	05/16/07	7.67	1,066	25.6	6.13	496.0
	12/05/07	7.95	1,680	26.2	5.58	477.0
	03/11/08	8.19	1,030	26.2	5.17	521.0
	05/15/08	7.85	1,690	27.8	5.93	437.0
	07/22/13	7.52	1,325	26.7	1.21	135.3
	02/18/14	7.31	3,156	24.4	0.94	119.0
	02/04/15	7.56	1,771	24.3	0.65	202.8
	11/18/15	7.38	1,697	23.1	4.38	242.2

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-63M	01/12/05	7.90	1,421	25.9	2.67	86.4
	03/31/05	7.40	1,494	27.2	4.10	378.2
	06/13/05	7.58	1,082	28.6	3.86	223.1
	09/29/05	7.49	1,164	28.8	4.68	326.0
	12/19/05	7.52	1,510	27.2	5.66	472.0
	03/23/06	7.63	1,481	28.0	NS	NS
	06/08/06	7.49	1,230	29.0	NS	NS
	09/22/06	7.35	1,600	26.4	4.13	427.0
	12/18/06	7.38	1,630	27.4	4.30	428.0
	03/19/07	7.42	1,910	28.0	4.43	453.0
	05/16/07	NS	NS	NS	NS	NS
	12/05/07	NS	NS	NS	NS	NS
	03/11/08	NS	NS	NS	NS	NS
	05/23/08	NS	NS	NS	NS	NS
	07/30/13	7.29	1,208	29.5	0.86	108.2
	02/27/14	7.41	3,057	26.7	0.63	25.3
	02/10/15	7.50	2,674	26.8	1.20	176.9
	11/19/15	7.31	1,910	26.9	0.17	203.0
WCP-64	03/24/04	7.10	1,716	29.2	1.64	251.4
	06/24/04	6.93	2,030	29.0	1.20	260.8
	09/17/04	7.61	1,530	27.4	1.11	325.0
	01/14/05	7.79	1,807	27.3	1.38	287.0
	03/29/05	7.53	1,877	26.4	3.17	380.5
	06/09/05	7.78	1,443	28.2	3.02	232.6
	09/26/05	7.61	1,258	28.7	2.42	364.0
	12/13/06	7.66	1,790	25.7	3.26	471.0
	03/23/06	7.57	1,531	28.6	2.67	297.3
	06/09/06	7.58	1,530	28.8	NS	NS
	09/20/06	7.28	1,920	28.0	3.19	334.0
	12/15/06	7.30	1,880	25.8	3.10	381.0
	03/14/07	7.47	2,020	26.5	3.16	325.0
	05/21/07	7.63	1,350	26.3	3.27	367.0
	12/14/07	6.93	1,178	25.7	4.25	602.0
	03/14/08	8.30	360	24.8	4.04	532.0
	05/23/08	NS	1,950	25.2	4.21	466.0
	07/22/13	7.25	1,709	26.7	1.40	155.9
	02/27/14	7.36	3,877	25.2	1.33	39.7
	02/11/15	7.47	4,274	25.4	1.26	189.5
	11/23/15	NM	NM	NM	NM	NM
WCP-68S	12/06/07	8.19	1,600	26.0	1.25	484.0
	03/11/08	8.30	540	30.9	1.12	529.0
	05/16/08	7.87	1,480	30.3	1.40	417.0
	07/23/13	7.41	1,507	31.3	0.29	137.8
	02/17/14	7.56	3,450	27.6	1.02	126.5
	01/26/15	7.65	1,911	26.7	2.30	197.0
	11/11/15	7.61	2,329	26.5	2.80	271.4
WCP-69S	03/14/07	7.66	1,230	30.4	2.29	333.0
	05/16/07	7.53	1,580	29.1	1.66	390.0
	12/05/07	8.14	1,433	29.7	1.62	469.0
	03/07/08	8.40	760	30.6	1.15	488.0
	05/16/08	7.91	1,450	30.0	1.84	438.0
	07/24/13	7.45	1,449	34.1	0.37	131.7
	02/17/14	7.53	3,146	27.1	1.10	128.6
	02/03/15	7.45	1,829	26.6	0.71	218.5
	11/10/15	7.20	1,544	26.6	1.16	260.3

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (°C)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-205	01/14/05	6.60	1,728	26.8	2.13	102.4
	03/30/05	7.24	1,966	28.4	6.41	402.2
	06/08/05	7.57	1,523	28.6	4.16	348.9
	09/27/05	7.19	1,048	30.1	5.64	506.0
	12/12/05	7.83	1,810	27.6	5.42	508.0
	03/22/06	7.37	1,822	27.3	5.21	481.3
	06/05/06	7.74	160	30.2	NS	NS
	09/18/06	7.13	1,196	29.3	7.11	355.0
	12/12/06	7.09	1,910	27.7	6.50	427.0
	03/07/07	7.14	1,980	29.2	7.41	378.0
	05/17/07	7.34	1,920	27.8	7.11	416.0
	12/04/07	7.63	1,890	27.1	6.56	521.0
	03/06/08	7.87	1,400	28.6	6.13	484.0
	05/14/08	7.93	1,740	29.3	6.08	465.0
	08/02/13	7.10	1,869	36.0	0.77	159.8
	02/26/14	7.09	2,371	27.6	1.30	106.0
	01/27/15	7.13	2,503	26.2	4.65	171.1
	11/18/15	7.12	2,562	26.3	4.90	238.9
WCP-206	01/13/05	7.74	1,691	29.0	1.01	243.1
	03/30/05	7.25	1,833	28.7	5.58	486.5
	06/09/05	7.50	1,386	30.4	3.38	318.5
	09/27/05	7.29	1,640	32.0	4.85	521.0
	12/13/05	7.44	961	31.5	5.30	505.0
	03/22/06	7.45	1,634	28.6	5.82	527.3
	06/08/06	7.40	1,230	28.8	NS	NS
	09/21/06	7.07	1,770	28.7	6.08	380.0
	12/13/06	7.11	1,680	28.1	6.27	397.0
	03/13/07	7.26	1,790	29.1	5.73	377.0
	05/21/07	7.40	1,820	27.9	5.57	539.0
	12/11/07	7.55	670	29.1	4.76	544.0
	03/12/08	7.92	1,140	29.9	4.20	526.0
	05/19/08	7.93	1,750	29.7	4.80	478.0
	07/31/13	7.20	1,555	33.3	0.76	92.2
	02/19/14	7.08	2,057	27.9	0.97	109.8
	01/27/15	7.34	2,293	26.4	2.38	209.3
	11/11/15	7.22	2,563	25.8	4.19	262.8
WCP-207	01/14/05	8.21	1,045	26.8	1.31	186.4
	03/30/05	7.74	1,100	26.9	4.43	437.3
	06/08/05	7.95	855	26.8	3.88	324.9
	09/27/05	7.66	592	28.6	3.91	495.0
	12/08/05	7.89	996	26.1	4.18	395.0
	03/21/06	7.81	1,053	28.1	3.82	316.5
	06/09/06	7.78	1,100	28.9	NS	NS
	09/21/06	7.45	1,148	26.4	5.58	328.0
	12/13/07	7.51	1,125	24.3	4.50	273.0
	03/14/07	7.68	1,150	27.6	4.16	238.0
	05/22/07	7.88	1,121	24.4	4.03	298.0
	12/11/07	8.37	300	25.3	3.51	520.0
	03/14/08	8.79	20	27.2	3.66	454.0
	05/21/08	7.86	1,149	28.3	3.48	427.0
	07/19/13	7.64	946	27.5	0.68	133.4
	02/18/14	7.54	2,819	25.3	1.03	111.8
	02/12/15	7.88	2,858	24.2	2.08	179.1
	11/23/15	7.62	1,490	25.8	2.56	233.6

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-208S	04/07/05	7.28	1,938	28.3	4.49	335.9
	06/09/05	7.49	1,468	29.0	3.25	227..5
	09/29/05	7.39	1,192	29.3	2.67	341.0
	12/12/05	7.35	1,860	31.5	5.78	391.0
	03/22/06	7.29	1,752	29.3	4.46	324.6
	06/05/06	7.51	1,650	29.6	NS	NS
	09/18/06	6.96	2,040	29.6	6.66	232.0
	12/12/06	7.03	1,910	28.9	5.60	299.0
	03/07/07	7.10	2,060	29.3	5.57	343.0
	05/17/07	7.29	2,020	29.0	6.15	347.0
	12/04/07	7.68	1,560	29.7	5.18	488.0
	03/07/08	8.06	730	29.6	5.26	522.0
	05/14/08	7.88	1,184	31.6	5.24	431.0
	07/30/13	7.15	1,772	31.6	1.05	114.5
	02/27/14	7.20	4,323	27.5	1.25	55.3
	02/02/15	7.29	2,610	27.3	2.74	55.3
	11/19/15	7.18	2,677	27.7	4.87	18.3
WCP-208M	04/07/05	7.54	1,470	27.3	3.71	238.9
	06/09/05	7.51	1,392	28.8	2.87	192.6
	09/29/05	7.38	1,015	29.4	1.23	392.0
	12/19/05	7.48	1,520	28.0	6.08	456.0
	03/23/06	7.30	1,472	27.5	NS	NS
	06/08/06	7.50	1,480	29.8	NS	NS
	09/22/06	7.39	1,650	27.7	4.78	431.0
	12/18/06	7.35	1,660	28.0	4.73	416.0
	03/19/07	NS	NS	NS	NS	NS
	05/17/07	NS	NS	NS	NS	NS
	12/14/07	NS	NS	NS	NS	NS
	03/17/08	NS	NS	NS	NS	NS
	05/23/08	NS	NS	NS	NS	NS
	07/30/13	7.21	1,254	29.8	0.83	18.0
	02/27/14	7.27	3,155	27.5	0.28	-28.8
	02/02/15	7.55	1,933	27.6	0.57	-189.0
	11/19/15	7.40	1,938	27.8	0.07	-320.8
WCP-209	03/31/05	7.17	2,151	30.4	4.39	357.9
	06/08/05	7.52	1,126	31.2	3.22	285.9
	09/29/05	7.32	1,019	29.9	3.94	363.0
	12/13/05	7.53	1,092	31.9	5.72	521.0
	03/22/06	7.57	1,462	28.6	4.87	381.0
	06/12/06	7.59	1,145	30.1	NS	NS
	09/19/06	7.09	1,500	29.1	5.42	321.0
	12/14/06	NS	NS	NS	NS	NS
	03/14/07	7.31	1,490	28.6	5.72	363.0
	05/16/07	7.40	1,435	27.3	5.68	518.0
	12/10/07	7.74	1,520	28.9	5.35	553.0
	03/10/08	7.91	340	28.1	4.60	515.0
	05/19/08	7.94	1,540	NS	5.13	521.0
	08/01/13	7.13	1,325	31.4	1.02	150.3
	02/27/14	7.30	3,230	25.3	1.44	34.4
	02/10/15	7.36	2,886	26.3	0.78	191.9
	11/19/15	7.27	2,014	25.7	4.52	148.0

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^{o}C)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-210	03/31/05	7.17	2,151	30.4	4.39	357.9
	06/09/05	7.52	1,518	29.2	3.81	276.5
	09/29/05	7.48	1,238	29.1	3.62	387.0
	12/13/05	7.41	1,650	31.2	2.76	474.0
	03/24/06	7.41	1,878	27.9	3.13	413.8
	06/09/06	7.40	1,526	30.1	NS	NS
	09/20/06	6.96	368	28.3	1.66	377.0
	12/14/06	7.04	1,930	27.4	2.18	309.0
	03/14/07	7.18	1,930	30.5	2.25	251.0
	05/22/07	7.35	1,980	28.8	2.06	322.0
	12/13/07	7.54	400	26.1	1.60	452.0
	03/13/08	8.33	540	28.4	1.51	457.0
	05/22/08	7.98	2,050	28.7	1.71	419.0
	07/18/13	7.07	2,433	30.0	1.02	89.0
	02/27/14	7.16	4,543	25.8	1.21	55.0
	02/10/15	7.26	4,051	26.9	3.80	184.5
	11/19/15	7.19	2,759	26.9	3.47	235.2
WCP-211	03/31/05	7.17	2,151	30.4	4.39	357.9
	06/08/05	7.88	1,338	28.7	3.68	218.6
	09/27/05	7.51	681	29.8	1.37	476.0
	12/12/05	7.53	955	28.8	3.37	352.0
	03/22/06	7.47	1,362	28.5	3.02	380.6
	06/05/06	7.61	1,580	30.8	NS	NS
	09/18/06	7.10	1,439	28.6	3.88	256.0
	12/12/06	7.18	1,105	27.7	3.04	286.0
	03/07/07	7.24	1,481	28.8	2.74	288.0
	05/17/07	7.40	989	27.8	3.57	275.0
	12/04/07	7.66	1,215	27.0	3.48	490.0
	03/06/08	7.86	580	NS	1.51	540.0
	05/14/08	7.99	1,468	27.3	0.98	464.0
	08/02/13	7.03	1,897	31.4	1.09	149.3
	02/26/14	7.08	2,441	26.3	1.13	106.7
	02/11/15	7.25	4,476	26.2	1.13	213.4
	11/18/15	7.16	2,475	26.1	5.17	243.0
WCP-212	06/07/06	6.97	1,830	29.0	NS	NS
	09/19/06	6.98	1,890	31.0	6.04	305.0
	12/12/06	7.00	1,810	29.6	6.66	371.0
	03/14/07	7.12	1,980	27.5	6.84	3.7
	05/21/07	7.28	1,910	26.3	6.10	446.0
	12/07/07	7.54	1,900	29.1	6.77	539.0
	03/11/08	8.16	320	28.6	5.27	513.0
	05/19/08	7.01	2,205	29.1	6.17	643.0
	07/31/13	7.15	1,590	31.7	0.53	109.7
	02/25/14	7.02	4,151	25.9	1.07	110.8
	02/03/15	7.24	2,266	26.5	1.08	200.7
	11/20/15	7.20	2,400	27.3	4.62	219.0
WCP-213	06/30/06	NS	NS	NS	NS	NS
	09/18/06	6.96	2,050	29.9	7.31	330.0
	12/12/06	7.00	1,950	28.8	4.60	358.0
	03/07/07	7.09	2,030	28.4	4.68	221.0
	05/17/07	7.26	2,000	28.3	4.38	257.0
	12/04/07	7.55	1,960	28.8	2.38	426.0
	03/12/08	8.32	430	29.5	2.53	480.0
	05/14/08	7.85	1,980	29.1	3.98	378.0
	07/26/13	7.11	1,733	30.1	0.67	121.3
	02/26/14	7.02	2,328	27.2	1.14	108.8
	01/27/15	7.12	2,527	27.1	4.27	201.9
	11/11/15	7.11	2,771	26.1	5.68	253.2

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^{o}C)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-214	03/23/06	7.64	1,412	27.9	1.53	180.3
	06/08/06	7.61	1,245	28.9	NS	NS
	09/20/06	7.85	1,850	27.6	0.21	150.0
	12/14/06	7.22	1,860	27.7	0.16	84.0
	03/14/07	7.29	1,520	29.5	0.37	248.0
	05/22/07	7.45	2,010	28.5	0.26	110.0
	12/13/07	7.91	380	26.1	0.40	428.0
	03/13/08	8.55	260	25.7	6.23	470.0
	05/14/08	NS	NS	NS	NS	NS
	07/29/13	7.23	1,766	29.7	1.10	129.6
	02/25/14	7.12	4,342	25.3	1.11	112.3
	02/05/15	7.46	2,644	24.8	1.91	215.3
	11/19/15	7.17	2,401	24.9	1.26	229.4
WCP-215	03/23/06	7.41	1,793	29.7	4.60	293.0
	06/07/06	7.48	1,653	29.9	NS	NS
	09/19/06	7.06	1,970	29.6	5.73	352.0
	12/13/06	7.07	1,950	29.7	5.18	381.0
	03/13/07	7.18	1,960	29.7	5.61	347.0
	05/21/07	7.35	1,920	29.6	5.06	478.0
	12/07/07	7.64	2,010	28.5	5.43	471.0
	03/13/08	NS	NS	NS	NS	NS
	05/20/08	7.84	1,900	30.1	5.34	505.0
	07/25/13	7.18	1,483	29.9	0.94	130.8
	02/21/14	7.08	3,394	25.4	1.54	131.1
	02/03/15	7.36	2,019	26.4	1.81	180.4
	11/17/15	7.12	2,088	25.9	4.57	256.8
WCP-216	03/23/06	7.66	1,554	29.7	2.84	197.6
	06/07/06	7.73	1,435	30.0	NS	NS
	09/19/06	7.19	1,610	27.9	5.63	280.0
	12/11/06	7.27	1,530	27.5	5.54	390.0
	03/13/07	7.38	1,540	27.9	6.10	339.0
	05/16/07	7.56	1,490	27.7	5.34	341.0
	12/06/07	7.89	1,404	29.2	5.43	450.0
	03/10/08	7.58	240	29.3	4.76	582.0
	05/15/08	7.93	1,420	29.9	5.67	483.0
	07/25/13	7.42	1,276	27.9	0.73	125.5
	02/21/14	7.29	2,794	25.9	1.21	110.4
	02/03/15	7.52	1,604	25.6	2.40	169.5
	11/17/15	7.28	1,976	26.4	4.47	247.5
WCP-217	04/04/06	7.37	1,453	28.3	3.56	227.6
	06/13/06	7.21	1,384	29.1	NS	NS
	09/18/06	7.33	673	26.3	4.49	345.0
	12/11/06	7.31	940	27.5	4.28	297.0
	03/07/07	7.49	1,288	25.0	6.01	408.0
	05/17/07	7.68	790	24.2	5.21	441.0
	12/04/07	7.98	948	25.3	3.36	452.0
	03/05/08	7.98	1,340	25.2	5.64	489.0
	05/13/08	7.51	1,330	27.8	5.84	438.0
	07/26/13	7.47	1,214	37.6	0.25	102.2
	02/28/14	7.43	2,518	25.0	1.38	30.9
	01/27/15	7.50	1,206	23.1	4.42	201.6
	11/17/15	7.31	1,308	22.3	4.85	265.9
WCP-218	06/30/06	NS	NS	NS	NS	NS
	09/18/06	7.36	1,490	29.8	7.19	353.0
	12/12/06	7.08	1,960	28.6	7.30	416.0
	03/07/07	7.11	2,060	28.7	6.23	281.0
	05/17/07	7.29	1,970	28.0	5.67	285.0
	12/04/07	7.63	1,550	29.1	5.40	445.0
	03/06/08	8.30	350	28.1	5.21	510.0
	05/19/08	7.82	1,680	29.7	5.21	483.0
	07/26/13	7.14	1,622	28.5	0.61	156.5
	02/25/14	7.05	4,280	26.5	1.10	105.9
	02/11/15	7.24	4,402	26.3	3.29	202.2
	11/11/15	7.10	2,610	25.2	5.51	249.7

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-219	06/08/06	7.34	1,453	24.7	NS	NS
	09/19/06	7.30	1,550	26.2	6.81	377.0
	12/11/06	7.38	1,530	25.0	6.63	421.0
	03/12/07	7.47	1,463	27.1	6.80	340.0
	05/16/07	7.70	692	26.0	6.26	501.0
	12/05/07	8.01	1,419	27.7	6.86	502.0
	03/11/08	8.21	250	26.2	5.77	524.0
	05/15/08	7.53	1,517	28.6	6.24	388.0
	02/26/14	7.39	1,562	25.3	1.56	113.9
	02/04/15	7.59	1,575	23.3	2.41	205.3
	11/18/15	7.37	1,560	20.8	4.77	239.4
WCP-225	12/18/06	7.06	1,890	28.5	5.11	405.0
	03/15/07	7.24	1,950	31.7	5.21	364.0
	05/21/07	7.37	1,970	30.1	4.55	387.0
	12/12/07	7.72	1,980	29.7	4.02	386.0
	03/12/08	7.88	970	29.3	4.08	518.0
	05/16/08	7.91	1,218	28.9	4.17	539.0
	07/29/13	7.22	1,729	31.5	0.70	115.5
	03/04/14	7.15	2,755	27.2	1.82	86.8
	02/05/15	7.39	2,525	27.8	0.79	182.2
	11/17/15	7.15	2,361	26.1	4.30	259.4
WCP-226	12/18/06	7.43	1,090	25.6	5.24	400.0
	03/14/07	7.54	1,085	25.4	6.02	356.0
	05/22/07	7.63	1,070	25.0	4.26	247.0
	12/06/07	7.93	776	28.7	3.82	451.0
	03/06/08	7.60	430	25.8	4.05	555.0
	05/14/08	8.24	852	28.6	3.84	398.0
	07/19/13	7.43	902	31.3	0.51	119.1
	02/18/14	7.20	2,758	26.5	1.89	78.0
	02/12/15	7.61	2,619	24.3	4.09	160.5
	11/10/15	7.30	1,471	24.4	5.58	258.4
WCP-227	11/14/06	7.46	1,488	28.1	NS	NS
	12/13/06	7.18	1,890	27.9	3.98	395.0
	03/15/07	7.39	1,780	28.3	4.78	320.0
	05/21/07	7.47	1,790	28.0	3.84	341.0
	12/13/07	7.81	1,830	26.3	4.39	458.0
	03/13/08	8.02	1,410	26.3	4.06	484.0
	05/22/08	7.83	1,870	29.2	3.89	423.0
WCP-228	05/15/07	7.96	346	29.6	6.14	517.0
	12/03/07	NS	NS	NS	NS	NS
	03/07/08	7.83	1,840	30.1	5.32	501.0
	05/13/08	NS	NS	29.0	5.91	538.0
	07/18/13	7.34	2,046	33.2	0.94	123.6
	03/03/14	7.27	1,986	26.3	2.24	117.1
	02/11/15	7.31	3,782	28.6	0.83	193.3
	11/23/15	7.18	1,990	26.8	5.10	284.1
WCP-229	05/15/07	7.56	1,394	28.7	6.75	472.0
	12/03/07	NS	NS	NS	NS	NS
	03/07/08	8.44	420	28.9	5.19	513.0
	05/13/08	7.59	1,110	28.8	6.82	438.0
	07/23/13	7.29	1,065	28.9	0.42	138.1
	02/25/14	7.20	2,809	25.7	1.23	102.8
	02/10/15	7.46	2,313	26.1	1.40	132.9
	11/20/15	7.34	1,661	26.3	5.03	213.9
WCP-230	05/15/07	NS	NS	NS	NS	NS
	12/07/07	7.69	1,460	29.6	3.54	481.0
	03/11/08	7.87	1,410	31.0	3.19	502.0
	05/16/08	NS	1,535	29.1	3.18	434.0
	07/22/13	7.11	1,899	30.0	0.36	166.2
	03/03/14	7.16	2,229	27.0	1.89	107.8
	02/05/15	7.27	2,531	28.4	0.91	172.9
	11/23/15	7.12	2,336	26.8	4.22	278.2

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (°C)	Dissolved Oxygen (mg/L)	ORP (mV)
WCP-230M	02/05/16	7.51	1,847	28.6	3.54	117.1
WCP-231	05/22/07	7.36	2,200	27.4	8.82	391.0
	12/06/07	7.70	2,000	27.2	7.08	505.0
	03/10/08	7.96	1,000	26.8	5.55	500.0
	05/16/08	7.95	2,080	28.1	6.09	419.0
	07/29/13	7.08	2,024	29.0	1.21	158.6
	03/04/14	7.11	3,332	25.6	2.33	103.5
	01/28/15	7.18	2,710	26.2	4.38	192.7
	11/18/15	7.06	2,945	26.0	4.66	242.3
WCP-232	05/15/07	7.37	2,190	28.5	7.87	484.0
	12/03/07	NS	NS	NS	NS	NS
	03/05/08	NS	NS	NS	NS	NS
	05/13/08	7.53	2,230	28.9	7.15	497.0
	07/19/13	7.17	1,678	30.0	1.98	118.7
	02/18/14	7.11	4,800	27.3	1.36	136.7
	02/05/15	7.42	2,813	27.1	1.80	202.3
	11/11/15	7.25	2,911	27.0	5.55	261.6
WCP-233	05/15/07	7.31	1,820	28.7	6.08	488.0
	12/03/07	NS	NS	NS	NS	NS
	03/05/08	7.71	2,040	29.1	6.23	511.0
	05/13/08	7.32	1,960	28.5	6.27	490.0
	07/19/13	7.17	947	29.2	0.53	79.3
	02/18/14	7.18	2,575	25.6	1.52	142.0
	01/30/15	7.52	2,278	23.6	4.99	197.8
	11/11/15	7.31	1,455	26.2	4.88	266.0
WCP-234	12/11/07	7.94	670	25.5	4.37	508.0
	03/12/08	8.27	420	25.6	3.88	509.0
	05/16/08	7.90	1,105	27.0	4.13	519.0
	08/02/13	7.30	955	29.0	0.96	124.5
	03/03/14	7.36	1,380	25.0	2.51	141.4
	02/04/15	7.57	1,591	25.0	1.44	192.3
	11/16/15	7.24	1,572	23.5	4.91	261.3
WCP-241	11/23/15	7.35	1,357	26.1	2.77	276.7
DJM-9	06/08/06	7.58	1,106	29.8	NS	NS
	09/21/06	7.39	1,610	26.6	5.36	393.0
	12/11/06	7.42	1,580	25.6	5.00	393.0
	03/12/07	7.54	1,620	27.1	4.52	368.0
	05/16/07	7.69	1,620	26.0	3.91	456.0
	12/10/07	8.33	12	24.7	1.80	486.0
	03/10/08	8.18	1,030	26.7	2.15	499.0
	05/15/08	NS	NS	27.2	4.09	483.0
DJM-13	08/01/13	7.35	1,455	29.6	1.30	118.1
	02/19/14	7.35	1,814	24.3	1.52	117.8
	11/16/15	7.26	1,741	23.9	2.54	259.9
TRIAD-10	03/31/05	7.17	2,151	30.4	4.39	357.9
	12/15/06	7.02	1,360	29.3	5.48	412.0
	07/24/13	7.07	1,728	28.5	1.09	164.7
	02/20/14	7.16	2,154	24.9	1.21	141.3
	01/29/15	7.38	4,536	25.6	5.08	194.1
	11/12/15	7.12	2,910	25.4	4.83	224.9
TRIAD-11	03/31/05	7.11	2,405	29.6	3.02	93.0
	06/09/05	7.31	1,768	29.1	3.27	102.4
	07/24/13	6.95	2,022	28.9	0.58	130.7
	02/20/14	6.89	2,688	26.8	0.01	123.2
	01/29/15	7.20	5,385	26.1	3.33	205.2
	11/12/15	7.10	3,170	26.0	3.18	240.7

TABLE 7
Groundwater Field Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date	pH	EC (µS)	Temperature (^oC)	Dissolved Oxygen (mg/L)	ORP (mV)
TRIAD-12	03/31/05	7.20	2,128	29.6	2.50	187.0
	09/28/05	7.14	1,060	30.3	1.26	533.0
	12/13/05	7.34	1,940	30.9	2.39	499.0
	03/22/06	7.26	1,793	28.2	2.18	483.2
	06/09/06	NS	NS	NS	NS	NS
	09/21/06	7.04	2,130	28.8	1.30	NS
	12/15/06	7.00	1,590	28.5	1.54	336.0
	03/15/07	7.18	2,090	28.6	3.02	312.0
	05/22/07	7.29	2,230	30.1	0.32	446.0
	12/12/07	7.49	46	27.5	0.00	260.0
	03/14/08	7.76	1,750	27.4	0.81	430.0
	05/22/08	NS	2,060	31.0	0.46	402.0
	07/24/13	7.03	1,903	30.1	0.42	-7.2
	02/20/14	6.96	2,441	26.3	1.36	111.0
	01/29/15	7.35	4,891	25.4	2.18	199.3
	11/12/15	7.35	2,975	26.4	0.17	-209.5
TRIAD-13	03/22/06	7.81	2,022	29.3	2.18	388.2
	06/09/06	7.00	1,325	27.3	NS	NS
	09/21/06	6.89	2,160	28.2	4.96	361.0
	12/14/06	6.91	2,120	27.6	6.03	346.0
	03/15/07	7.06	2,280	29.4	4.58	379.0
	05/22/07	7.27	1,063	28.0	4.62	422.0
	12/12/07	7.59	1,370	28.9	4.10	560.0
	03/14/08	7.86	910	29.8	3.84	529.0
	05/21/08	7.91	2,180	31.8	3.92	463.0
	07/24/13	7.04	1,887	30.6	0.52	131.9
	02/20/14	6.93	2,441	26.9	0.01	110.8
	01/29/15	7.25	4,715	25.8	3.57	196.3
	11/12/15	7.16	2,840	26.5	3.89	223.7
TRIAD-14	09/22/06	7.14	2,190	28.1	5.46	356.0
	12/15/06	7.14	2,090	29.1	5.36	415.0
	03/15/07	7.28	2,080	29.6	5.42	384.0
	05/22/07	7.46	2,090	29.1	5.54	400.0
	12/12/07	7.79	2,040	27.7	4.43	555.0
	03/14/08	8.78	380	26.8	4.75	495.0
	05/21/08	7.88	1,930	31.2	5.19	466.0
	08/02/13	7.15	1,726	30.6	0.96	110.8
	03/04/14	7.20	2,937	26.6	1.88	82.4
	01/29/15	7.43	4,185	24.3	3.52	209.3
	11/13/15	7.05	2,652	26.9	5.72	222.3
TRIAD-15	09/22/06	7.16	1,620	28.2	6.89	361.0
	12/15/06	7.23	1,185	29.1	7.03	419.0
	03/15/07	7.26	1,860	29.1	7.65	358.0
	05/22/07	7.53	1,840	28.6	5.87	417.0
	12/12/07	7.83	1,760	29.3	6.55	541.0
	03/14/08	8.40	620	26.4	6.12	508.0
	05/21/08	7.64	1,770	30.7	5.81	479.0
	07/31/13	7.27	1,493	28.5	0.51	80.3
	03/04/14	7.20	2,758	26.5	1.89	78.0
	01/29/15	7.49	4,204	25.7	1.18	188.6
	11/12/15	7.31	2,705	26.2	4.73	215.5

Notes:

EC = Electrical Conductivity — *NM = Not Measured on this Date*

^oC = Degrees Centigrade — *µS = microSiemens*

mg/L = milligrams per Liter — *mV = milliVolts*

NS = Not Sampled on this Date — *ORP = Oxidation-Reduction Potential (measured)*

TABLE 8
Soil Analytical Results for SVE and Angle Borings - Osborn Products
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification	Date Sampled	Volatile Organic Compounds (mg/kg)							
		1,1-DCA	1,1-DCE	*cis*-1,2-DCE	*trans*-1,2-DCE	TCE	PCE	Other Detected Analytes	
SVE-1-30'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVE-1-35'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	0.12	1,2,4-Trimethylbenzene	0.27
								Total Xylenes	0.21
SVE-1-40'	01/20/07	<0.050	<0.10	<0.050	<0.050	0.24	0.23	1,2-Dichlorobenzene	0.21
								1,3-Dichlorobenzene	0.32
								1,4-Dichlorobenzene	0.23
								Ethylbenzene	3.2
								4-Isopropyltoluene	1.2
								Toluene	5.0
								1,2,4-Trimethylbenzene	1.2
								1,3,5-Trimethylbenzene	0.40
								Total Xylenes	21
SVE-1-45'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	Total Xylenes	0.17
SVE-1-50'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVE-1-55'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVE-1-60'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVE-1-65'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-1-30'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-1-35'	01/20/07	<0.050	<0.10	<0.050	<0.050	<0.050	0.049	None	
SVO-1-40'	01/21/07	<0.050	<0.10	<0.050	<0.050	0.081	0.31	N-Butylbenzene	0.55
								1,2-Dichlorobenzene	0.050
								1,3-Dichlorobenzene	0.070
								1,4-Dichlorobenzene	0.057
								Ethylbenzene	2.4
								4-Isopropyltoluene	1.3
								Naphthalene	0.32
								n-Propylbenzene	0.41
								Toluene	1.7
								1,2,4-Trimethylbenzene	3.5
								1,3,5-Trimethylbenzene	1.0
								Total Xylenes	17
SVO-1-45'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-1-50'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-1-55'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-1-60'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-1-65'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
SVO-2-30'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	

TABLE 8
Soil Analytical Results for SVE and Angle Borings - Osborn Products
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification	Date Sampled	Volatile Organic Compounds (mg/kg)						
		1,1-DCA	1,1-DCE	*cis* -1,2-DCE	*trans* -1,2-DCE	TCE	PCE	Other Detected Analytes
SVO-2-35'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None
SVO-2-40'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None
SVO-2-45'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None
SVO-2-50'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None
SVO-2-55'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None
SVO-2-60'	01/21/07	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None
SVO-2-65'	01/21/07	<0.050	<0.010	<0.050	<0.050	<0.050	<0.050	None
WCP-OP-AB1-10'	05/12/07	<0.039	<0.077	<0.039	<0.039	<0.039	<0.039	None
WCP-OP-AB1-30'	05/12/07	<0.039	<0.077	<0.039	<0.039	<0.039	<0.039	None
WCP-OP-AB1-45'	05/15/07	<0.039	<0.077	<0.039	<0.039	<0.039	<0.039	None
WCP-OP-AB1-30'	05/15/07	<0.039	<0.077	<0.039	<0.039	<0.039	<0.039	None
WCP-OP-AB1-30'	05/15/07	<0.039	<0.077	<0.039	<0.039	<0.039	<0.039	None
WCP-OP-AB2-30'	05/19/07	<0.038	<0.076	<0.038	<0.038	<0.038	<0.038	None
WCP-OP-AB2-42.5'	05/19/07	<0.038	<0.076	<0.038	<0.038	<0.038	<0.038	None
WCP-OP-AB2-50'	05/19/07	<0.038	<0.076	<0.038	<0.038	<0.038	<0.038	None
ADEQ Residential/Non-Residential SRL		**510/1,700**	**120/410**	**43/150**	**69/230**	**3.0/65**	**0.51/13**	
ADEQ Minimum GPL		**NE**	**0.85**	**5.30**	**9.20**	**0.76**	**0.80**	

Notes:

1,1-DCA	=	*1,1-dichloroethane*
1,1-DCE	=	*1,1-dichloroethene*
cis-1,2-DCE	=	*cis-1,2-dichloroethene*
trans-1,2-DCE	=	*trans-1,2-dichloroethene*
TCE	=	*trichloroethene*
PCE	=	*tetrachloroethene*
ADEQ	=	*Arizona Department of Environmental Quality*
SRL	=	*Soil Remediation Level*
GPL	=	*Groundwater Protection Level*
<	=	*less than detection limit*
NE	=	*Not Established*

VOCs analyzed by US EPA Method 8260B

Regulatory Sources: Residential/Non-Residential SRLs 2007, Groundwater Protection Levels 2014.

Data Source: Locus 2008.

TABLE 9
Soil Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Sample Type	Target Analytes by EPA Method 8260B (mg/kg)							
			1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-25										
WCP-MW-025-016' [1]	04/09/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.022	None	
WCP-MW-025-041' [1]	04/09/01	soil	<0.015/<0.014	<0.015/<0.014	<0.018/<0.017	NA	<0.023/<0.022	<0.025/<0.023	None	
WCP-MW-025-046' [1]	04/09/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-025-051' [1]	04/09/01	soil	<0.014	<0.015	<0.018	NA	<0.023	<0.024	None	
WCP-MW-025-056' [1]	04/09/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-025-071' [1]	04/09/01	soil	<0.015	<0.016	<0.019	NA	<0.024	<0.026	None	
WCP-MW-025-081' [1]	04/09/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-025-096' [1]	04/09/01	soil	<0.016	<0.017	<0.021	NA	<0.026	<0.028	None	
WCP-MW-025-106' [1]	04/09/01	soil	<0.014	<0.014	<0.018	NA	<0.022	<0.024	None	
WCP-MW-025-126' [1]	04/09/01	soil	<0.016	<0.017	<0.020	NA	<0.026	<0.028	None	
WCP-26										
WCP-MW-026-021' [1]	04/04/01	soil	<0.014	<0.014 J	<0.017	NA	<0.022	<0.023	Acetone	310 UJ
WCP-MW-026-026' [1]	04/04/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-026-051' [1]	04/04/01	soil	<0.013	<0.014	<0.016	NA	<0.021	<0.022	Acetone Toluene	370 UJ 160
WCP-MW-026-066' [1]	04/04/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-026-081' [1]	04/04/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-026-096' [1]	04/04/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.022	None	
WCP-MW-026-101' [1]	04/04/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-026-116' [1]	04/05/01	soil	<0.013/<0.016	<14/<17	<0.017/<0.020	NA	<0.021/<0.026	<0.023/<0.028	Acetone Toluene	310 UJ/<180 UJ
WCP-MW-026-121' [1]	04/05/01	soil	<0.016/<0.016	<17/<16	<0.020/<0.020	NA	<0.026/<0.025	<0.028/<0.027	2-Hexanone	150/<60
WCP-27										
WCP-27-S-130' [2]	11/17/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-59										
WCP-MW-059-021' [1]	04/02/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.022	None	
WCP-MW-059-046' [1]	04/02/01	soil	<0.015/<0.014	<0.015/<0.014	<0.018/<0.017	NA	<0.023/<0.022	<0.025/<0.023	None	
WCP-MW-059-066' [1]	04/02/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-059-086' [1]	04/02/01	soil	<0.014	<0.015	<0.018	NA	<0.023	<0.024	None	
WCP-MW-059-091' [1]	04/02/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-059-096' [1]	04/02/01	soil	<0.015	<0.015	<0.019	NA	<0.024	'<0.025	None	
WCP-MW-059-111' [1]	04/02/01	soil	<0.014	<0.015	<0.018	NA	<0.023	<0.024	None	
WCP-MW-059-136' [1]	04/03/01	soil	<0.017	<0.018	<0.021	NA	'<0.027	<0.029	None	
WCP-60										
WCP-60-S-20' [2]	12/01/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050		

TABLE 9
Soil Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Sample Type	Target Analytes by EPA Method 8260B (mg/kg)							
			1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-61										
WCP-MW-061-006' [1]	03/26/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-061-026' [1]	03/26/01	soil	<0.015	<0.015	<0.018	NA	<0.023	'<0.025	None	
WCP-MW-061-041' [1]	03/26/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-061-081' [1]	03/26/01	soil	<0.013	<0.014	<0.017	NA	<0.021	<0.023	None	
WCP-MW-061-111' [1]	03/26/01	soil	<0.014	<0.015	<0.018	NA	<0.023	'<0.025	None	
WCP-MW-061-116' [1]	03/26/01	soil	<0.018/<0.018	<0.018/<0.018	<0.022/<0.022	NA	<0.028/<0.028	<0.030/<0.030	None	
WCP-MW-061-121' [1]	03/26/01	soil	<0.013	<0.013	<0.016	NA	<0.021	<0.022	None	
WCP-MW-061-135'* [1]	03/27/01	soil	<0.015	<0.016	<0.019	NA	<0.024	<0.026	None	
WCP-62										
WCP-MW-062-031' [1]	03/31/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-062-051' [1]	03/31/01	soil	<0.013	<0.013	<0.016	NA	<0.021	<0.022	None	
WCP-MW-062-076' [1]	03/31/01	soil	<0.017	<0.018	<0.022	NA	<0.028	<0.030	None	
WCP-MW-062-086' [1]	03/31/01	soil	<0.017	<0.018	<0.022	NA	<0.028	<0.029	None	
WCP-MW-062-096' [1]	03/31/01	soil	<0.017	<0.018	<0.022	NA	'<0.027	<0.029	None	
WCP-MW-062-121' [1]	03/31/01	soil	<0.016	<0.017	<0.021	NA	<0.026	<0.028	None	
WCP-64										
WCP-MW-064-016' [1]	03/28/01	soil	<0.014	<0.015	<0.018	NA	<0.023	'<0.025	None	
WCP-MW-064-046' [1]	03/28/01	soil	<0.012	<0.013	<0.015	NA	<0.020	<0.021	None	
WCP-MW-064-056' [1]	03/28/01	soil	<0.013	<0.014	<0.016	NA	<0.021	<0.022	None	
WCP-MW-064-071' [1]	03/28/01	soil	<0.014	<0.014	<0.017	NA	<0.022	<0.023	None	
WCP-MW-064-101' [1]	03/28/01	soil	<0.014	<0.015	<0.018	NA	<0.023	<0.024	None	
WCP-MW-064-111' [1]	03/28/01	soil	<0.014	<0.015	<0.018	NA	<0.023	'<0.025	None	
WCP-MW-064-121' [1]	03/28/01	soil	<0.016	<0.016	<0.020	NA	<0.025	<0.027	None	
WCP-MW-064-151' [1]	03/29/01	soil	<0.016	<0.016	<0.020	NA	'<0.025	'<0.027	None	
WCP-207										
WCP-207-S-65' [2]	12/16/04	soil	<0.048	<0.096	<0.048	<0.048	<0.048	<0.048	None	
WCP-207-S-80' [2]	12/16/04	soil	<0.048	<0.096	<0.048	<0.048	<0.048	<0.048	None	
WCP-207-S-90' [2]	12/16/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
WCP-207-S-100' [2]	12/17/04	soil	<0.046	<0.092	<0.046	<0.046	<0.046	<0.046	None	
WCP-210										
WCP-210-S-80' [2]	05/04/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
WCP-210-S-110' [2]	05/07/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
WCP-211										
WCP-211-S-25' [2]	04/28/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
WCP-211-S-40' [2]	04/29/04	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	None	
WCP-211-S-40' [3]	03/28/05	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	methylene chloride	1.1
WCP-211-S-25' [3]	03/28/05	soil	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	methylene chloride	0.98

TABLE 9
Soil Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample Identification and Depth	Date Sampled	Sample Type	Target Analytes by EPA Method 8260B (mg/kg)							
			1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-213										
WCP-213-S-5' [4]	06/27/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-213-S-30' [4]	06/27/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-213-S-35' [4]	06/27/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-213-S-90' [4]	06/27/06	soil	NA	<0.10	<0.050	<0.050	<0.050	0.13		
WCP-213-S-100' [4]	06/27/06	soil	NA	<0.10	<0.050	<0.050	<0.050	0.27		
WCP-218										
WCP-218-S-5' [4]	06/20/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-218-S-70' [4]	06/20/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-225										
WCP-225-40' [4]	12/04/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-225-130' [4]	12/04/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-234										
WCP-234-55' [4]	12/07/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-234-70' [4]	12/07/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-234-85' [4]	12/07/06	soil	NA	<0.10	<0.050	<0.050	<0.050	<0.050		
WCP-241										
WCP-241 @ 10'	11/04/15	soil	<0.0448	<0.0896	<0.0448	<0.0448	<0.0448	<0.0448	Chromium	23.5
WCP-241 @ 30'	11/04/15	soil	<0.0415	<0.0831	<0.0415	<0.0415	<0.0415	<0.0415	Chromium	22.6
WCP-241 @ 50'	11/04/15	soil	<0.0474	<0.0949	<0.0474	<0.0474	<0.0474	<0.0474	Chromium	27.1
WCP-241 @ 70'	11/04/15	soil	<0.0380	<0.0760	<0.0380	<0.0380	<0.0380	<0.0380	Chromium	58.7
WCP-241 @ 90'	11/04/15	soil	<0.0358	<0.0715	<0.0358	<0.0358	<0.0358	<0.0358	Chromium	32.1
WCP-241 @ 110'	11/04/15	soil	<0.0365	<0.0731	<0.0365	<0.0365	<0.0365	<0.0365	Chromium	59.3
WCP-241 @ 130'	11/05/15	soil	<0.0395	<0.0790	<0.0395	<0.0395	<0.0395	<0.0395	Chromium	68.1
ADEQ Residential/Non-Residential SRL			**510/1,700**	**120/410**	**43/150**	**69/230**	**3.0/65**	**0.51/13**		
ADEQ Minimum GPL			**NE**	**0.85**	**5.30**	**9.20**	**0.76**	**0.80**		

Notes:

1,1- DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
TCE = Trichloroethene
J = Estimated value

mg/Kg = micrograms per kilogram
PCE = Tetrachloroethene
NE = None established
NA = Not analyzed

< = less than detection limit
SRL = Soil Remediation Level
MTBE = methyl tert-butyl ether
GPL = Groundwater Protection Level

trans-1,2-DCE = trans-1,2-dichlorethane
cis-1,2-DCE = cis-1,2-dichloroethene
ADEQ = Arizona Department of Environmental Quality

U = Analyte was not detected above the numerical quantitation limit (quantitation limit was raised during the validation process.)
[1] = Data Source: Weston Solutions, 2003
[2] = data from Locus Technologies, 2005
[3] = data from RI FY05 folder, spreadsheet "Transwest EDD soil table."
[4] = data from Locus Technologies, 2008
Bold results indicate value greater than or equal to the SRL or GPL.
Volatile Organic Compounds analyzed by US EPA Method 8260B
Regulatory Sources: Residential/Non-Residential SRLs 2007, Groundwater Protection Levels 2014.

TABLE 10
Mobile Laboratory Soil Gas Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID		Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
			cis -1,2-DCE	trans-1,2-DCE	TCE	PCE
WCP-27						
WCP-27-SG-	5	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	10	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	15	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	20	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	25	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	30	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	35	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	40	11/15/04	<1.0	<1.0	<1.0	**1.5**
WCP-27-SG-	45	11/15/04	<1.0	<1.0	<1.0	**1.8**
WCP-27-SG-	50	11/15/04	<1.0	<1.0	<1.0	**2.0**
WCP-27-SG-	55	11/15/04	<1.0	<1.0	<1.0	**1.7**
WCP-27-SG-	60	11/15/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	65	11/15/04	<1.0	<1.0	<1.0	**1.8**
WCP-27-SG-	70	11/15/04	<1.0	<1.0	<1.0	**1.2**
WCP-27-SG-	75	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	80	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	85	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	90	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	95	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	100	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	105	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	110	11/16/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	115	11/17/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	120	11/17/04	<1.0	<1.0	<1.0	<1.0
WCP-27-SG-	125	11/17/04	<1.0	**2.5**	**1.3**	<1.0
WCP-27-SG-	130	11/17/04	**56**	**380**	**32**	<10
WCP-60						
WCP-60-SG-	5	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	10	12/01/04	<1.0	<1.0	<1.0	**2.5**
WCP-60-SG-	15	12/01/04	<1.0	<1.0	<1.0	**2.8**
WCP-60-SG-	20	12/01/04	<1.0	<1.0	<1.0	**2.8**
WCP-60-SG-	25	12/01/04	<1.0	<1.0	<1.0	**1.5**
WCP-60-SG-	30	12/01/04	<1.0	<1.0	<1.0	**1.2**
WCP-60-SG-	35	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	40	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	45	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	50	12/01/04	<1.0	<1.0	<1.0	**1.1**
WCP-60-SG-	55	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	60	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	65	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	70	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	75	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	80	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	85	12/01/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	90	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	95	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	100	12/02/04	<1.0	<1.0	<1.0	<1.0

TABLE 10
Mobile Laboratory Soil Gas Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID		Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
			cis -1,2-DCE	trans-1,2-DCE	TCE	PCE
WCP-60-SG-	105	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	110	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	115	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	120	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	125	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-60-SG-	130	12/02/04	<1.0	<1.0	<1.0	<1.0
WCP-206						
WCP-206-SG-	5	12/06/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	10	12/06/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	15	12/06/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	20	12/06/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	25	12/06/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	30	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	35	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	40	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	45	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	50	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	55	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	60	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	65	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	70	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	75	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	80	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	85	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	90	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	95	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	100	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	105	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	110	12/07/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	115	12/08/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	120	12/08/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	125	12/08/04	<1.0	<1.0	<1.0	<1.0
WCP-206-SG-	130	12/08/04	<1.0	<1.0	<1.0	<10
WCP-207						
WCP-207-SG-	5	12/16/04	<1.0	<1.0	<1.0	<1.0
WCP-207-SG-	10	12/16/04	<1.0	<1.0	<1.0	<1.0
WCP-207-SG-	15	12/16/04	<1.0	<1.0	<1.0	<1.0
WCP-207-SG-	20	12/16/04	<1.0	<1.0	<1.0	<1.0
WCP-207-SG-	25	12/16/04	<1.0	<1.0	**1.3**	<1.0
WCP-207-SG-	30	12/16/04	<1.0	<1.0	<1.0	<1.0
WCP-207-SG-	35	12/16/04	<1.0	<1.0	**1.7**	<1.0
WCP-207-SG-	40	12/16/04	<1.0	<1.0	**1.7**	<1.0
WCP-207-SG-	45	12/16/04	<1.0	<1.0	**2.2**	<1.0
WCP-207-SG-	50	12/16/04	<1.0	<1.0	**3.0**	<1.0
WCP-207-SG-	55	12/16/04	<1.0	<1.0	**2.8**	<1.0
WCP-207-SG-	60	12/16/04	<1.0	<1.0	**6.5**	<1.0
WCP-207-SG-	65	12/16/04	<1.0	<1.0	**10**	<1.0
WCP-207-SG-	70	12/16/04	<1.0	<1.0	**2.5**	<1.0

TABLE 10
Mobile Laboratory Soil Gas Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID		Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
			cis -1,2-DCE	trans-1,2-DCE	TCE	PCE
WCP-207-SG-	75	12/16/04	**1.4**	<1.0	**16**	<1.0
WCP-207-SG-	80	12/16/04	**2.0**	<1.0	**23**	<1.0
WCP-207-SG-	85	12/16/04	**2.2**	<1.0	**22**	<1.0
WCP-207-SG-	90	12/16/04	**3.7**	<1.0	**39**	<1.0
WCP-207-SG-	95	12/17/04	**3.4**	<1.0	**37**	<1.0
WCP-207-SG-	100	12/17/04	**3.6**	<1.0	**41**	<1.0
WCP-207-SG-	105	12/17/04	**1.8**	<1.0	**24**	<1.0
WCP-207-SG-	110	12/17/04	**1.2**	<1.0	**18**	<1.0
WCP-207-SG-	115	12/17/04	**1.4**	<1.0	**30**	<1.0
WCP-207-SG-	120	12/17/04	**1.7**	<1.0	**38**	<1.0
WCP-207-SG-	125	12/17/04	**1.0**	<1.0	**29**	<1.0
WCP-207-SG-	D1 [1]	12/17/04	**3.0**	<1.0	**35**	<1.0
WCP-208						
WCP-208-SG-	10	03/17/05	<1.0	<1.0	<1.0	<1.0
WCP-208-SG-	20	03/17/05	<1.0	<1.0	<1.0	<1.0
WCP-208-SG-	30	03/17/05	<1.0	<1.0	<1.0	<1.0
WCP-208-SG-	40	03/17/05	<1.0	<1.0	<1.0	<1.0
WCP-208-SG-	60	03/21/05	<1.0	<1.0	<1.0	**1.2**
WCP-213						
WCP-213-SG-	5	06/27/06	<5.0	<5.0	<5.0	**120**
WCP-213-SG-	10	06/27/06	<5.0	<5.0	<5.0	**71**
WCP-213-SG-	15	06/27/06	<5.0	<5.0	<5.0	**58**
WCP-213-SG-	20	06/27/06	<5.0	<5.0	<5.0	**29**
WCP-213-SG-	25	06/27/06	<5.0	<5.0	<5.0	**78**
WCP-213-SG-	30	06/27/06	<5.0	<5.0	<5.0	**390**
WCP-213-SG-	35	06/27/06	<5.0	<5.0	<5.0	**720**
WCP-213-SG-	40	06/27/06	<5.0	<5.0	<5.0	**240**
WCP-213-SG-	45	06/27/06	<5.0	<5.0	<5.0	**140**
WCP-213-SG-	50	06/27/06	<5.0	<5.0	<5.0	**170**
WCP-213-SG-	60	06/27/06	<5.0	<5.0	<5.0	**530**
WCP-213-SG-	70	06/27/06	<5.0	<5.0	<5.0	**570/710**
WCP-213-SG-	80	06/27/06	<5.0	<5.0	<5.0	**16**
WCP-213-SG-	90	06/27/06	<5.0	<5.0	<5.0	**1,200**
WCP-213-SG-	100	06/27/06	<5.0	<5.0	<5.0	**2,900**
WCP-213-SG-	110	06/27/06	<5.0	<5.0	<5.0	**1,800**
WCP-213-SG-	120	06/27/06	<5.0	<5.0	<5.0	**1,700**
WCP-213-SG-	130	06/27/06	<5.0	<5.0	<5.0	**560**

TABLE 10
Mobile Laboratory Soil Gas Analytical Results for Monitoring Well Borings
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID		Date Sampled	Volatile Organic Compound Concentration (mg/m^3)			
			cis -1,2-DCE	trans-1,2-DCE	TCE	PCE
WCP-218						
WCP-218-SG-	5	06/20/06	<1.0	<1.0	<1.0	**3.0**
WCP-218-SG-	10	06/20/06	<1.0	<1.0	<1.0	**1.2**
WCP-218-SG-	15	06/20/06	<1.0	<1.0	<1.0	**16**
WCP-218-SG-	20	06/20/06	<1.0	<1.0	<1.0	**16**
WCP-218-SG-	25	06/20/06	<1.0	<1.0	<1.0	**14**
WCP-218-SG-	30	06/20/06	<1.0	<1.0	<1.0	**12**
WCP-218-SG-	35	06/20/06	<1.0	<1.0	<1.0	**3.5**
WCP-218-SG-	40	06/20/06	<1.0	<1.0	<1.0	**11**
WCP-218-SG-	45	06/20/06	<1.0	<1.0	<1.0	**8.1**
WCP-218-SG-	50	06/20/06	<1.0	<1.0	<1.0	**11**
WCP-218-SG-	60	06/20/06	<1.0	<1.0	<1.0	**9.1**
WCP-218-SG-	70	06/20/06	<1.0	<1.0	<1.0	**24**
WCP-218-SG-	80	06/20/06	<1.0	<1.0	<1.0	**21**
WCP-218-SG-	90	06/20/06	<1.0	<1.0	<1.0	**4.1**
WCP-218-SG-	100	06/20/06	<1.0	<1.0	<1.0	**1.9**
WCP-218-SG-	110	06/20/06	<1.0	<1.0	<1.0	<1.0
WCP-218-SG-	120	06/20/06	<1.0	<1.0	<1.0	<1.0
WCP-218-SG-	130	06/20/06	<1.0	<1.0	<1.0	<1.0
WCP-241						
WCP-241@10'		11/04/15	NS	NS	**0.00891**	**0.0205**
WCP-241@30'		11/04/15	NS	NS	**0.221**	**0.135**
WCP-241@50'		11/04/15	NS	NS	**0.0787**	**0.0468**
WCP-241@70'		11/04/15	NS	NS	**0.256**	**0.0509**
WCP-241@90'		11/04/15	NS	NS	**0.00956**	<0.0136
WCP-241@110'		11/04/15	NS	NS	<0.00537	<0.0136
WCP-241@130'		11/05/15	NS	NS	<0.00537	<0.0136
WCP-241@Dup2 [2]		11/05/15	NS	NS	<0.00537	<0.0136

mg/m^3* = *milligrams per cubic meter
cis-1,2-DCE* = *cis-1,2-dichloroethene
trans-1,2-DCE* = *trans-1,2-dichloroethene
TCE* = *Trichloroethene
PCE* = *Tetrachloroethene
Results in bold indicate concentrations above laboratory detection limits.

[1] = Sample WCP-207-SG-D1 is a blind duplicate of WCP-207-SG-125'
[2] = Sample WCP-241@Dup2 is a blind duplicate of WCP-241@130'

All soil gas samples were analyzed on site. VOC analysis for PCE, TCE, cis-1,2-DCE, and trans-1,2-DCE was conducted using EPA Method 8021B (modified).

TABLE 11
Soil Vapor Analytical Results for Existing Monitoring Wells
ADEQ West Central Phoenix North Canal Plume WQARF Site

Monitoring Well Identification	Date Sampled	Volatile Organic Compound Concentrations (mg/m^3)		
		Tetrachloroethene	Trichlorofluoromethane (F-11)	Trichlorotrifluoroethane (F-113)
WCP-205	12/29/2014	**6.75**	**34.5**	**2.11**
WCP-208S	12/29/2014	**77.3**	**29.7**	<1.92
WCP-213	12/29/2014	**2,560**	**1,000**	<38.3

Notes: ***mg/m^3 = milligrams per cubic meter***
VOCs analyzed by EPA Method TO-15
Bold values exceed the reporting limit.
See laboratory report for other compounds included in EPA Method TO-15 analysis, but not detected above the laboratory reporting limit.

TABLE 12
2016 Soil Gas Investigation
ADEQ West Central Phoenix North Canal Plume WQARF Site

Sample ID	Date Sampled	Volatile Organic Compound Concentration (mg/m^3)																						
		1,1,1-Trichloroethane	1,1-DCA	1,1-DCE	2,2,4-Trimethylpentane	MEK	Acetone	Benzene	Chloroform	*cis*-1,2-DCE	Cyclohexane	Ethanol	Ethylbenzene	Heptane	Hexane	m & p Xylene	Nonane	o-Xylene	Propene	PCE	Toluene	*trans*-1,2-DCE	TCE	Trichlorofluoromethane
4001 W Indian School Road (Former Facilities)																								
NCP-1-10	10/31/2016	<0.00546	<0.00405	**0.399**	**0.0182**	<0.0295	**0.0717**	**0.00766**	**0.0148**	<0.00396	**0.0054**	**0.0387**	<0.00434	**0.0112**	**0.0109**	<0.00868	<0.0105	<0.00434	<0.00344	**0.0721**	**0.0332**	<0.00396	**0.165**	**0.0180**
NCP-2-10	10/31/2016	<0.00546	<0.00405	**0.347**	<0.00466	<0.0295	**0.0875**	**0.00612**	**0.0119**	<0.00396	<0.00344	**0.0317**	<0.00434	**0.00853**	<0.00704	<0.00868	<0.0105	<0.00434	**0.0994**	**0.0660**	**0.0157**	<0.00396	**0.223**	**0.0209**
3648-3700 N 36th Avenue (Former Pyramid Industries Facility)																								
NCP-3-10	10/31/2016	<0.0137	<0.0101	<0.00993	<0.0117	<0.0738	**0.0766**	<0.00798	<0.0122	<0.00990	<0.00860	<0.0470	**0.0156**	<0.0103	<0.0176	**0.0792**	<0.0262	**0.0349**	<0.00860	**1.121**	<0.00943	<0.00990	<0.0134	<0.0141
NCP-4-10	10/31/2016	<0.0137	<0.0101	<0.00993	<0.0117	<0.0738	**0.0746**	<0.00798	<0.0122	<0.00990	<0.00860	<0.0470	**0.0473**	<0.0103	<0.0176	**0.213**	**0.0272**	**0.0927**	**0.0237**	**0.858**	<0.00943	<0.00990	**0.0150**	<0.0141
3422 W Clarendon Avenue (HCZ Custom Homes, Inc.)																								
NCP-5-10	10/31/2016	<2.730	<2.025	<1.985	<2.330	<14.750	<11.900	<1.595	<2.440	<1.980	<1.720	<9.400	<2.170	<2.050	<3.520	<4.340	<5.240	<2.170	<1.720	**251.500**	<1.885	<1.980	<2.685	**11.350**
NCP-6-10	10/31/2016	<2.730	<2.025	<1.985	<2.330	<14.750	<11.900	<1.595	<2.440	<1.980	<1.720	<9.400	<2.170	<2.050	<3.520	<4.340	<5.240	<2.170	<1.720	**223.100**	<1.885	<1.980	<2.685	<2.810
NCP-7-10	10/31/2016	<2.730	<2.025	<1.985	<2.330	<14.750	<11.900	<1.595	<2.440	<1.980	<1.720	<9.400	<2.170	<2.050	<3.520	<4.340	<5.240	<2.170	<1.720	**306.500**	<1.885	<1.980	<2.685	**6.969**
NCP-8-10	10/31/2016	<0.546	<0.405	<0.397	<0.466	<2.950	<2.380	<0.319	<0.488	<0.396	<0.344	<1.880	<0.434	<0.410	<0.704	<0.868	<1.048	<0.434	<0.344	**27.190**	<0.377	<0.396	<0.537	<0.562
NCP-9-10	10/31/2016	<13.650	<10.125	<9.925	<11.650	<73.750	<59.500	<7.975	<12.200	<9.900	<8.600	<47.000	<10.850	<10.250	<17.600	<21.700	<26.200	<10.850	<8.600	**1254.000**	<9.425	<9.900	<13.425	<14.050
3946 W Clarendon Avenue (Stevens Engineering Company, Inc.)																								
NCP-10-10	11/1/2016	<0.00546	**0.0128**	**0.125**	<0.00466	<0.0295	**0.0490**	<0.00319	**0.0148**	<0.00396	<0.00344	**0.106**	<0.00434	<0.00410	<0.00704	<0.00868	<0.0105	<0.00434	<0.00344	**0.422**	**0.00701**	<0.00396	**0.116**	**0.00708**
NCP-11-10	11/1/2016	<0.00546	**0.00421**	**0.0306**	<0.00466	<0.0295	**0.0670**	<0.00319	**0.00508**	<0.00396	<0.00344	**0.125**	<0.00434	<0.00410	<0.00704	<0.00868	<0.0105	<0.00434	<0.00344	**0.0164**	<0.00377	<0.00396	**0.0449**	**0.00686**
3820 N 38th Avenue (Govway Building)																								
NCP-12-10	11/1/2016	<0.00546	<0.00405	<0.00397	<0.00466	<0.0295	**0.129**	<0.00319	<0.00488	<0.00396	<0.00344	**0.346**	<0.00434	<0.00410	<0.00704	<0.00868	<0.0105	<0.00434	<0.00344	**0.0199**	**0.0174**	<0.00396	<0.00537	<0.00562
NCP-13-10	11/1/2016	**0.198**	<0.00405	**0.0524**	<0.0466	<0.295	<0.238	<0.0319	<0.0488	<0.0396	<0.0344	**0.273**	<0.0434	<0.0410	<0.0704	<0.0868	<0.105	<0.0434	<0.0344	<0.136	**1.340**	<0.0396	<0.0537	**0.112**
3702 W Clarendon Avenue (Former Osborn Products Facility)																								
NCP-14-10	11/1/2016	<0.0273	<0.0203	**0.211**	<0.0233	<0.148	<0.119	<0.0160	**0.0566**	<0.0198	<0.0172	<0.0940	<0.0217	<0.0205	<0.0352	<0.0434	<0.0524	<0.0217	<0.0172	**0.407**	<0.0189	<0.0198	**1.221**	<0.0281
NCP-15-10	11/1/2016	<0.0546	<0.0405	<0.0397	<0.0466	<0.295	<0.238	<0.0319	<0.0488	<0.0396	<0.0344	**0.255**	<0.0434	<0.0410	<0.0704	<0.0868	<0.105	<0.0434	<0.0344	**1.833**	<0.0377	<0.0396	**0.275**	<0.0562
3628 W Clarendon Avenue (Former Southwest Metals Facility)																								
NCP-16-10	11/1/2016	<0.00546	<0.00405	<0.00397	<0.00466	<0.0295	**0.0603**	<0.00319	<0.00488	<0.00396	<0.00344	**0.0454**	<0.00434	<0.00410	<0.00704	<0.00868	<0.0105	<0.00434	**0.0255**	**0.281**	<0.00377	<0.00396	**0.0108**	**0.00674**
NCP-17-10	11/1/2016	<0.0137	<0.0101	**0.0141**	<0.0117	<0.0738	<0.0595	<0.00798	<0.0122	<0.00990	<0.00860	<0.0470	<0.0109	<0.0103	<0.0176	<0.0217	<0.0262	<0.0109	<0.00860	**0.526**	**0.0106**	<0.00990	**0.0760**	**0.0191**
3883 N 36th Avenue (Former Triad Trucking Company)																								
NCP-18-10	11/2/2016	<0.546	<0.405	<0.397	<0.466	<2.950	<2.380	<0.319	<0.488	<0.396	<0.344	<1.880	<0.434	<0.410	<0.704	<0.868	<1.048	<0.434	<0.344	**65.290**	<0.377	<0.396	<0.537	<0.562
NCP-19-10	11/2/2016	<0.0137	<0.0101	<0.00993	<0.0117	<0.0738	<0.0595	<0.00798	<0.0122	<0.00990	<0.00860	**0.963**	<0.0109	<0.0103	<0.0176	<0.0217	<0.0262	<0.0109	<0.00860	**0.0342**	**0.0115**	<0.00990	<0.0134	<0.0141

mg/m^3 = milligrams per cubic meter
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
TCE = Trichloroethene
PCE = Tetrachloroethene
Results in bold indicate concentrations above laboratory detection limits.

VOC analysis for PCE, TCE, cis-1,2-DCE
and trans-1,2-DCE was conducted using EPA Method TO-15.

TABLE 13
Locus Technologies Aquifer Test Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

	Test Well			
CHARACTERISTIC	**WCP-227**	**WCP-214**	**OB-1**	**OB-2**
PUMP TEST TRANSMISSIVITY (ft^2/day) (a)	52	291	73	130
RECOVERY TEST TRANSMISSIVITY (ft^2/day) (b)	113	562	128	181
PUMP TEST HYDRAULIC CONDUCTIVITY (feet/day)	1.6	8.7	2.2	4.0
RECOVERY TEST HYDRAULIC CONDUCTIVITY (feet/day) (b)	3.5	17	3.9	5.5

Note:
ft^2 /day = square feet per day
ref. Locus, 2008b
(a) Locus reports using Neuman Method for unconfined aquifer
(b) Locus reports using Theis/Jacob Method for unconfined aquifer

TABLE 14
Slug Test Input Parameters
ADEQ West Central Phoenix North Canal Plume WQARF Site

Test Well	Site Location	Borehole Diameter (inch)	Casing Diameter (inch)	Depth to Top of Screen (feet bgs)	Depth to Base of Screen (feet bgs)	Saturated Thickness (feet)
WCP-205	East Plume Area	10	4	120	165	11.6
WCP-208S	East Plume Area	14	4	125	165	21.3
WCP-213	East Plume Area	10	4	120	165	27.4
WCP-210	Central Plume Area	10	4	120	165	23.9
TRIAD MW-14	Central Plume Area	10	4	100	150	15.1
WCP-212	West Plume Area	10	4	120	165	25.3
WCP-230	West Plume Area	10	4	120	165	24.7
WCP-234	West Plume Area	10	4	120	165	20.4

Notes:

Borehole diameters are from driller's logs in ADWR imaged records. There is a discrepancy between some of these numbers and the construction logs in Appendix B.

bgs = below ground surface

Saturated thickness is based on water levels during October 2015 slug tests.

TABLE 15
Slug Test Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

				Automatically Logged Data			Hand-Collected Data		
				KGS		Bouwer-Rice	KGS		Bouwer-Rice
Test Well	Site Location	Saturated Thickness (ft)	Trest Duration (min)	K (ft/d)	Ss (1/ft)	K (ft/d)	K (ft/d)	Ss (1/ft)	K (ft/d)
WCP-205	East Plume Area	11.6	25	0.78	1.2E-11	1.18	1.10	5.4E-06	1.48
WCP-208S	East Plume Area	21.3	31	0.92	9.6E-06	2.40	0.81	6.4E-07	2.19
WCP-213 #1	East Plume Area	27.4	46	NA	NA	NA	1.00	3.7E-12	1.73
WCP-213 #2	East Plume Area	27.4	15	NA	NA	NA	0.53	3.7E-12	1.05
WCP-210	Central Plume Area	23.9	16	0.84	5.5E-05	1.28	0.81	4.2E-12	1.47
TRIAD MW-14	Central Plume Area	15.1	15	5.37	6.6E-12	7.9	3.82	6.6E-12	10.4
WCP-212	West Plume Area	25.3	11	1.22	4.0E-12	2.02	1.22	4.0E-12	2.22
WCP-230	West Plume Area	24.7	55	0.28	7.0E-04	0.74	0.43	4.0E-12	0.70
WCP-234	West Plume Area	20.4	65	0.05	9.0E-04	0.16	0.11	4.2E-06	0.17

Notes:
Bouwer-Rice = Unconfined Bouwer-Rice solution method in Aqtesolv™
ft/d = foot per day
ft = feet
K = hydraulic conductivity
KGS = Unconfined KGS solution method in Aqtesolv™
Ss= specific storage
NA= Not Applicable
Two slug tests were performed for WCP-213. Only hand collected data were collected due to transducer problems.

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-13M	03/23/06	965.32	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	06/08/06	964.19	<1.0	<0.50	<0.50	<0.50	1.2	None	
	09/30/06	962.38	<1.0	<0.50	<0.50	<0.50	0.53	None	
	12/18/06	962.92	<1.0	<0.50	<0.50	<0.50	0.52	None	
	03/19/07	960.67	<1.0	<0.50	<0.50	<0.50	0.58	None	
	05/23/07	958.39	<1.0	<0.50	<0.50	<0.50	1.1	None	
	09/18/07	958.29	<1.0	<0.50	<0.50	<0.50	0.61	None	
	12/14/07	958.29	<1.0	<0.50	<0.50	<0.50	0.61	None	
	03/17/08	961.59	<1.0	<0.50	<0.50	<0.50	0.54	None	
	05/23/08	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/04/08	959.97	<1.0	<0.50	<0.50	0.53	<0.50	None	
WCP-25	5/4/01[3]	993.58	0.4 J	**49 J**	2	**66**	1	Acetone Chloroform Carbon tetrachloride MTBE	2 1 0.4 J 0.4 J
	6/4/01[3]	994.58	0.5 J	**49**	3 J	**61**	1 J	Acetone Chloroform Carbon tetrachloride	3 UJ 0.9 J 0.3 J
	7/6/01[3]	993.82	0.5 J	**49 J**	4 J	**67 J**	1 J	Chloroform	1 J
	10/4/01[3]	992.45	0.5 J	**37 J**	3 J	**64 J**	2 J	Chloroform	1 J
	1/9/02[3]	991.31	0.4 J	**39**	3	**63**	1	Chloroform MTBE	0.9 0.8
	4/10/02[3]	990.36	0.39 J	**36**	2.4	**61**	2	Chloroform MTBE	0.85 1.6
	9/19/02[3]	988.17	0.4 J	**47**	2.2	**64**	1.8	Chloroform MTBE	0.92 4.9
	12/12/02[3]	989.23	1.1	**68**	9.6	**110**	4.1	Chloroform	1.5
	3/12/03[3]	NS	NS	NS	NS	NS	NS	NS	
	6/3/03[3]	986.33	<0.2/0.6	**44/56**	3.5/4.0	**78/100**	2.2/2.5	Chloroform MTBE	0.82/1 3.1/3.4
	03/23/04	983.61	<1.0	**33/39**	2.7/3.1	**36/43**	0.50/<0.5	Chloroform MTBE	1.3/1.3 12/11
	06/23/04	982.79	<1.0/<1.0	**27/39**	3.1/3.9	**47/55**	1.6/1.7	Chloroform	2.5/1.3
	09/17/04	982.05	<1.0/<1.0	**37/37**	2.8/2.8	**42/47**	0.86/1.0	Chloroform MTBE	1.5/1.5 11/13
	01/14/05	981.39	<1.0/<1.0	**30/33**	4.5/3.0	**49/46**	2.1/1.8	Chloroform MTBE	1.3/1.5 25/27
	03/30/05	981.24	<1.0/<1.0	**34/34**	4.0/3.8	**52/49**	1.8/1.7	Chloroform MTBE	1.7/1.7 12/12
	06/09/05	981.13	<1.0/<1.0	**40/40**	2.6/2.5	**55/54**	1.2/1.3	Chloroform	1.3/1.3
	09/28/05	981.47	<1.0/<1.0	**29/29**	3.7/3.6	**47/46**	1.9/1.9	Chloroform	1.7/1.7
	12/13/05	980.84	<1.0/<1.0	**32/31**	2.5/2.5	**44/45**	1.2/1.3	Chloroform	1.8/1.7
	03/24/06	981.12	<1.0/<1.0	**54/55**	3.0/3.2	**65/68**	1.6/1.9	Chloroform	2.4/2.5
	06/08/06	980.90	<1.0/<1.0	**28/28**	1.9/1.7	**42/41**	1.2/1.2	Chloroform	1.7/1.8
	09/20/06	980.71	<1.0/<1.0	**30/29**	1.9/1.8	**43/42**	1.4/1.2	Chloroform	2.1/2.2
	12/13/06	980.60	<1.0/<1.0	**33/33**	2.3/2.3	**48/47**	1.5/1.3	Chloroform	2.2/2.3
	03/15/07	980.52	<1.0/<1.0	**30/35**	3.3/3.4	**56/63**	1.6/1.7	Chloroform	2.1/2.3
	05/22/07	980.51	<1.0/<1.0	**37/39**	3.3/3.5	**58/60**	1.8/1.7	Chloroform	2.2/2.4
	09/13/07	980.16	<1.0/<1.0	**37/38**	3.2/3.3	**61/62**	1.6/1.8	Chloroform	2.2/2.3
	12/11/07	979.70	<1.0/<1.0	**29/31**	2.8/2.8	**46/54**	1.5/2.4	Chloroform	2.3/2.0
	03/13/08	979.78	<1.0	27	3.1	**47**	1.6	Chloroform trans-1,2-Dichoroethene	2.5 27
	05/20/08	980.00	<1.0/<1.0	36/36	2.8/2.7	**47/47**	1.4/1.4	Chloroform	2.9/2.9
	09/15/08	979.88	<1.0	37	2.9	**54**	1.6	Chloroform	3.3
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-26	5/4/01[3]	992.15	0.6/0.6	**64**/**62**	2/2	**100**/**92**	1/2	Acetone Chloroform	<2/5 0.7/0.8
	6/4/01[3]	993.03	0.7 J	**75 J**	2 J	**96 J**	3 J	Chloroform 1,2-Dichlorothane	0.8 J 0.3 J
	7/6/01[3]	992.38	0.6 J/0.6 J	**65 J**/**63**	2 J/3 J	**91 J**/**87**	3 J/3 J	Chloroform	0.8 J/0.8 J
	10/4/01[3]	991.05	0.6 J	**56 J**	2 J	**82 J**	**5 J**	Chloroform	0.9
	1/9/02[3]	989.96	0.5 J	**59**	2	**83**	4	Chloroform	0.7
	4/10/02[3]	989.01	0.46 J/0.48 J	**62**/**70**	1.5/1.6	**82**/**88**	4.5/4.6	Chloroform	0.63/0.65
	9/19/02[3]	986.68	0.5 J	**76**	1.3	**110**	4.7	Chloroform 1,2-Dichlorothane	0.7 0.33 J1
	12/12/02[3]	987.67	0.8	**75**	2.2	**160**	**9.4**	Chloroform	1.4
	3/12/03[3]	985.65	0.92/0.96	**120**/**100**	2.9/3	**270**/**240**	**8.8**/**8.8**	Chloroform 1,2-Dichlorothane	1.2/1.2 0.26 J1/0.29 J1
	6/3/03[3]	984.88	<1.0	**140**	5.7	**290**	**8.4**	None	
	03/24/04	982.12	<1.0	**51**	2.6	**85**	1.6	Chloroform	0.94
	06/24/04	981.34	<1.0	**60**	2.6	**100**	4.2	Chloroform	1.1
	09/17/04	980.56	<1.0	**46**	2.5	**74**	3.0	Chloroform MTBE	0.96 2.3
	01/13/05	979.83	<1.0	**45**	3.5	**86**	4.4	Chloroform MTBE	1.2 5.5
	03/29/05	979.74	<1.0	**55**	3.4	**83**	4.3	Chloroform MTBE	1.1 8.2
	06/09/05	979.62	<1.0	**58**	2.6	**92**	2.1	MTBE	9.9
	09/28/05	979.51	<1.0	**41**	2.5	**58**	2.4	Chloroform MTBE	1.1 8.4
	12/14/05	979.39	<1.0	**36**	2.1	**52**	2.5	Chloroform	1.0
	03/24/06	979.73	<1.0	**60**	2.6	**88**	2.0	Chloroform	1.5
	06/08/06	NM	NS	NS	NS	NS	NS	NS	
	09/20/06	979.42	<1.0	**35**	1.5	**53**	2.2	Chloroform	1.4
	12/13/06	979.19	<1.0	**35**	1.5	**55**	2.7	Chloroform	1.5
	03/13/07	979.12	<1.0	**32**	1.4	**55**	3.5	Chloroform	1.9
	05/21/07	979.13	<1.0	**30**	1.4	**49**	3.4	Chloroform	1.9
	09/13/07	978.81	<1.0	**23**	1.2	**35**	0.86	Chloroform	1.6
	12/11/07	978.33	<1.0/<1.0	**28**/**31**	2.8/2.8	**55**/**54**	2.8/2.4	Chloroform	1.9/2.0
	03/13/08	978.39	<1.0/<1.0	**25**/**26**	1.9/2.1	**37**/**39**	<1.0/1.1	Chloroform	1.6/1.7
	05/20/08	978.56	<1.0	**35**	5.0	**50**	1.5	Chloroform	1.9
	09/15/08	978.45	<1.0	**40**	3.4	**62**	3.1	Chloroform	2.4
WCP-27	01/14/05	975.57	1.2	**49**	6.5	**140**	**8.7**	Benzene * Isopropylbenzene Chloroform MTBE	2.3 3.1 1.7 180
	03/29/05	975.68	1.2	**44**	6.8	**130**	**9.3**	Benzene * Isopropylbenzene Chloroform MTBE	2.3 3.0 1.2 210
	06/09/05	975.59	<1.0	**53**	5.0	**130**	**7.3**	Acetone Benzene * 2-Butanone (MEK) MTBE	41 2.3 13 110
	09/28/05	975.67	1.1	**47**	6.3	**130**	**8.0**	Benzene * 2-Butanone Chloroform Isopropylbenzene MTBE	2.7 5.3 1.8 3.1 270
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-27 (Cont'd)	12/13/05	NM	NS	**NS**	NS	NS	NS	NS	
	03/23/06	976.08	1.3	**61**	7.4	**160**	**8.5**	Benzene * Chloroform 1,1,2-Trichloroethane Isopropylbenzene MTBE	3.6 1.2 0.87 2.6 310
	06/12/06	975.94	1.1	**50**	6.9	**160**	**9.7**	Benzene * Chloroform Isopropylbenzene MTBE	3.7 1.2 3.9 230
	09/20/06	975.58	1	**49**	6.4	**140**	**7**	Benzene * Chloroform MTBE	2.6 1.1 250
	12/14/06	975.38	1.1	**51**	12	**130**	**6.9**	Benzene * Chloroform Isopropylbenzene MTBE	2.7 1.2 2.6 240
	03/14/07	975.31	1.1	**56**	9.6	**150**	**7.2**	Benzene * Chloroform MTBE 1,1,2-Trichloroethane	2.5 1.6 190 0.58
	05/21/07	975.19	1.2	**48**	11	**150**	**6.4**	Benzene * Chloroform MTBE Isopropylbenzene	2.5 1.4 250 2.8
	09/14/07	974.57	1	**42**	7.4	**130**	**6.6**	Benzene * Chloroform MTBE Isopropylbenzene	2.4 1.2 330 3.2
	12/13/07	974.21	<1.0	**41**	10	**130**	**5.3**	Benzene * Chloroform MTBE Isopropylbenzene	2.2 1.1 420 2.8
	03/13/08	974.39	<1.0	**39**	12	**96**	4.6	Benzene * Chloroform MTBE Isopropylbenzene	2.0 1.5 420 2.8
	05/22/08	974.56	<1.0	**23**	5.6	**110**	1.9	Benzene * Chloroform MTBE	1.8 1.0 350
	09/12/08	NS	<1.0	**36**	6.4	**120**	4.9	Benzene * Chloroform MTBE Isopropylbenzene	2.2 1.0 430 4.0
WCP-34S	03/14/07	985.76	<1.0	<0.50	<0.50	0.94	<0.50	Trichlorofluoromethane	3.2
	05/16/07	985.76	<1.0	<0.50	<0.50	0.75	<0.50	None	
	09/10/07	985.61	<1.0	<0.50	<0.50	0.84	<0.50	Trichlorofluoromethane	3.2
	12/05/07	983.13	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/07/08	984.62	<1.0	<0.50	<0.50	0.50	<0.50	Trichlorofluoromethane	2.7
	05/16/08	984.02	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/10/08	984.55	<1.0	<0.50	<0.50	<0.50	<0.50	None	
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-59	5/4/01[3]	994.63	<0.3	**29**	<0.3	**21**	1	Chloroform Carbon tetrachloride 1,2-Dichlorothane	2 1 0.8
	6/4/01[3]	995.60	<0.2	**25**	<0.2	**17**	0.9	Chloroform Carbon tetrachloride 1,2-Dichlorothane	2 1 0.6
	7/6/01[3]	995.48	<0.2	**24 J**	<0.2	**15 J**	0.8 J	Bromodichloromethane Carbon Tetrachloride Chloroform MTBE	0.3 J 0.9 J 2 J 21
	10/4/01[3]	993.40	<0.2	**21 J**	<0.2	**12 J**	0.9 J	Chloroform MTBE	3 J 4 J
	1/9/02[3]	992.31	<0.2	**16**	<0.2	**10**	0.7	Chloroform MTBE	3 6
	4/10/02[3]	991.40	<0.2	**19**	<0.2	**12**	0.92	Chloroform MTBE	2.9 9.9
	9/19/02[3]	989.34	<0.2	**13**	<0.2	**6.5**	1.3	Chloroform Bromodichloromethane MTBE	3.7 0.32 J 24
	12/12/02[3]	989.56	<0.2	**24**	<0.2	**16**	0.83	Chloroform MTBE	2.9 230
	3/12/03[3]	988.17	<0.2	**12**	<0.2	**7.7**	0.62	Chloroform MTBE	3.5 36
	6/3/03[3]	987.38	<0.2	**14**	<0.2	**6.7**	0.58	Chloroform MTBE	4.7 47
	04/01/04	984.83	<0.20	**15**	<0.20	**6.5**	0.53	Chloroform MTBE	5.3 47
	06/23/04	984.13	<1.0	5.0	<0.20	2.7	<0.50	Chloroform MTBE	7.5 50
	09/17/04	983.38	<1.0	1.9	<0.50	1.1	<0.50	Bromodichloromethane Chloroform MTBE	0.50 9.1 34
	01/13/05	982.57	<1.0	3.6	<0.50	4.2	<0.50	Bromodichloromethane Chloroform MTBE	0.61 10 24
	03/29/05	982.57	<1.0	9.3	<0.50	**8.9**	<0.50	Chloroform MTBE	8.4 21
	06/07/05	982.46	<1.0	4.7	<0.50	4.4	<0.50	Chloroform MTBE	6.9 17
	09/27/05	983.16	<1.0	4.6	<0.50	**5.0**	<0.50	Chloroform MTBE	8.6 10
	12/13/05	983.10	<1.0	2.5	<0.50	2.5	<0.50	Chloroform	7.4
	03/27/06	983.28	<1.0	3.8	<0.50	1.6	<0.50	Chloroform	8.0
	06/05/06	982.10	<1.0	2.0	<0.50	1.6	<0.50	Chloroform	7.4
	09/30/06	981.91	<1.0	2.3	<0.50	3.4	<0.50	Chloroform	9.9
	12/12/06	981.76	<1.0	5.8	<0.50	**7.6**	0.56	Chloroform	8.8
	03/07/07	981.76	<1.0	4.4	<0.50	**7.0**	0.56	Benzene Chloroform MTBE	7.1 1.1 2.3
	05/16/07	981.69	<1.0	1.6	<0.50	**4.0**	<0.50	Benzene Chloroform	21 12
	09/10/07	981.46	<1.0	3.6	<0.50	**6.0**	<0.50	Benzene Chloroform	19 11
	12/06/07	981.05	<1.0	4.1	<0.50	**7.3**	<0.50	Benzene Chloroform	4.4 13
	03/11/08	981.01	<1.0	**9.5**	<0.50	**13**	0.59	Benzene Chloroform Carbon tetrachoride	4.9 18 2.6
	05/19/08	981.28	<1.0	1.3	<0.50	3.2	<0.50	Benzene Chloroform	14 17
	09/09/08	NS	<1.0	5.3	<0.50	**8.2**	<0.50	Benzene Chloroform	1.2 18
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	**1,1-DCE**	**cis-1,2-DCE**	**TCE**	**PCE**	**Other Detected Analytes**	
WCP-60	01/13/05	974.40	<1.0	1.0	<0.50	**18**	2.7	Chloroform	2.4
	03/29/05	974.33	<1.0	0.8	<0.50	**26**	3.1	Chloroform Trichlorofluoromethane	2.6 11
	06/07/05	974.43	<1.0	1.0	<0.50	**28**	2.0	Acetone Chloroform Trichlorofluoromethane	22 2.0 10.7
	09/26/05	974.08	<1.0	3.3	<0.50	**35**	2.8	Chloroform Trichlorofluoromethane	2.4 11
	12/08/05	973.97	<1.0	3.1	<0.50	**35**	2.8	Chloroform Trichlorofluoromethane	2.0 9.6
	03/21/06	974.81	<1.0	4.3	<0.50	**34**	2.2	Chloroform Trichlorofluoromethane	2.3 11
	06/08/06	974.42	<1.0	3.2	<0.50	**30**	2.1	Chloroform Trichlorofluoromethane	1.8 8.8
	09/19/06	973.96	<1.0	3	<0.50	**24**	1.7	Chloroform Trichlorofluoromethane	1.7 8.2
	12/13/06	973.76	<1.0	3.2	<0.50	**23**	1.7	Chloroform Trichlorofluoromethane	1.7 8.7
	03/12/07	973.73	<1.0	3.6	<0.50	**26**	1.9	Chloroform Trichlorofluoromethane	2.0 9.0
	05/21/07	973.50	<1.0	3.2	<0.50	**25**	2.3	Chloroform Trichlorofluoromethane	1.8 7.7
	09/11/07	974.07	<1.0	0.5	<0.50	**5.3**	0.98	Chloroform	0.51
	12/11/07	974.10	<1.0	0.5	<0.50	2	0.52	None	
	03/12/08	973.53	<1.0/<1.0	<0.50/<0.5	<0.50/<0.50	1.6/1.7	0.50/<0.5	None	
	05/20/08	973.35	<1.0	<0.50	<0.50	1.7	0.57	None	
	09/08/08	NS	<1.0	0.79	<0.50	**6.6**	0.96	Chloroform Trichlorofluoromethane	0.97 2.6
WCP-61	5/4/01[3]	994.43	<0.3	<0.3	<0.3	<0.3	<0.3	Chloroform Bromodichloromethane Dibromochloromethane	8 2 J 0.3 J
	6/4/01[3]	995.44	<0.2	<0.2	<0.2	<0.2	<0.2	Acetone Chloroform Bromodichloromethane Dibromochloromethane	6 U 9 2 0.5
	7/6/01[3]	994.73	<0.2	<0.2	<0.2	<0.2	<0.2	Acetone Chloroform Bromodichloromethane Bromomethane	4 NJ 8 J 2 0.5 U
	10/4/01[3]	993.37	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	8 2
	1/9/02[3]	992.26	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	8 2
	4/10/02[3]	991.43	<0.2	<0.2	<0.2	<0.2	3.9	Bromodichloromethane Methylene Chloride Chloroform Toluene	1.8 1.3 8.9 0.45 J
	9/19/02[3]	989.48	<0.2	0.36 J	<0.2	<0.2	1.6	Acetone Chloroform Bromodichloromethane	6.6 6.8 1.3
	12/12/02[3]	989.09	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform	6.9
	3/12/03[3]	988.28	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	4.9 0.83
	6/3/03[3]	987.77	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	4.9 0.81
	03/23/04	985.42	<1.0	<0.50	<0.50	0.84	<0.50	Chloroform Trichlorofluoromethane	2.4 8.9
	06/23/04	984.84	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	2.2 1.1
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-61 (cont'd)	09/16/04	984.33	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	2.4 14
	01/13/05	983.68	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.5 15
	03/28/05	983.48	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.7 21
	06/07/05	983.41	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane	1.2 13 44
	09/26/05	983.28	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.6 27
	12/08/05	983.11	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.2 23
	03/21/06	983.18	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane	1.6 30 69
	06/05/06	982.91	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.3 24
	09/19/06	982.78	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.1 24
	12/11/06	982.65	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.1 31
	03/08/07	982.68	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	0.95 19
	05/15/07	982.81	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	1.1 31
	09/07/07	982.59	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	0.74 30
	12/03/07	982.30	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	0.71 37
	03/07/08	982.21	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	0.70 36
	05/15/08	982.39	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	0.80 39
	09/08/08	982.33	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform Trichlorofluoromethane	0.83 36
WCP-62	5/4/01[3]	989.09	0.3 J	<0.2	<0.2	0.4 J	<0.2	Chloroform 1,2-Dichloroethane Bromodichloromethane	0.9 0.3 J 0.3 J
	6/4/01[3]	990.01	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform	0.8
	7/6/01[3]	989.34	<0.2	<0.2	<0.2	0.3 J	<0.2	Chloroform	0.9 J
	10/4/01[3]	988.00	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform 1,2-Dichloroethane	0.8 0.6
	1/9/02[3]	987.01	<0.2	<0.2	<0.2	0.5 J	<0.2	Chloroform Bromodichloromethane	1 0.2 J
	4/10/02[3]	986.99	<0.2	<0.2	<0.2	0.4 J	1.2	Methylene Chloride Chloroform Bromodichloromethane	1.2 1.4 0.36 J
	9/19/02[3]	983.82	<0.2	<0.2	<0.2	0.25 J	<0.2	Chloroform Bromodichloromethane	1.7 0.49 J
	12/12/02[3]	983.32	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	1.4 0.4 J
	3/12/03[3]	982.49	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	1.9 0.45 J
	6/3/03[3]	981.73	<0.2	<0.2	<0.2	<0.2	<0.2	Chloroform Bromodichloromethane	3.3 0.84
	03/23/04	979.12	<1.0	<0.50	<0.50	<0.50	<0.50	Trichlorofluoromethane Chloroform Bromodichloroethane	2.3 5.8 1.6
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
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ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-62 (cont'd)	06/23/04	978.32	<1.0	<0.50	<0.50	1.4	<0.50	Chloroform Bromodichloromethane	5.7 1.6
	09/17/04	977.58	<1.0	<0.50	<0.50	1.8	<0.50	Trichlorofluoromethane Chloroform Bromodichloromethane	3.4 4.4 1.2
	01/13/05	976.78	<1.0	<0.50	<0.50	2.2	<0.50	Trichlorofluoromethane Chloroform Bromodichloromethane	4.4 3.5 0.98
	03/28/05	976.42	<1.0	<0.50	<0.50	2.4	<0.50	Trichlorofluoromethane Chloroform Bromodichloromethane	5.2 2.7 0.64
	06/07/05	976.29	<1.0	<0.50	<0.50	1.9	<0.50	Acetone Chloroform Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane	410 1.8 3.7 5.9
	09/26/05	976.34	<1.0	<0.50	<0.50	2.5	<0.50	Trichlorofluoromethane Chloroform Bromodichloromethane	5.8 2.8 0.69
	12/08/05	976.33	<1.0	<0.50	<0.50	2.2	<0.50	Trichlorofluoromethane Chloroform Bromodichloromethane	4.8 2.6 0.64
	03/21/06	976.44	<1.0	<0.50	<0.50	2.4	<0.50	Chloroform Bromodichloromethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane	2.4 0.69 4.9 5.9
	06/07/06	976.26	<1.0	<0.50	<0.50	1.9	<0.50	Chloroform Bromodichloromethane Trichlorofluoromethane	1.8 0.58 3.1
	09/19/06	976.21	<1.0	<0.50	<0.50	1.9	<0.50	Chloroform Bromodichloromethane Trichlorofluoromethane	1.8 0.54 3.4
	12/11/06	975.98	<1.0	<0.50	<0.50	2.6	<0.50	Chloroform Bromodichloromethane Trichlorofluoromethane	2.0 0.60 4.5
	03/12/07	971.82	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	2.5/2.4	<0.50/<0.5	Chloroform Bromodichloromethane Trichlorofluoromethane	2.2/2.1 0.70/0.64 4.4/4.2
	05/16/07	975.89	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	2.8/2.9	<0.50/<0.5	Chloroform Bromodichloromethane Trichlorofluoromethane	2.1/2.2 0.72/0.74 4.3/4.5
	09/11/07	975.66	<1.0	<0.50	<0.50	3.1	<0.50	Chloroform Bromodichloromethane Trichlorofluoromethane	1.7 0.50 3.4
	12/05/07	975.14	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	3.8/3.7	<0.50/<0.5	Chloroform Trichlorofluoromethane	1.5/1.2 3.0/2.9
	03/11/08	975.00	<1.0	<0.50	<0.50	3.4	<0.50	Chloroform Trichlorofluoromethane	1.6 3.0
	05/15/08	975.18	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	3/2.8	<0.50/<0.5	Chloroform Trichlorofluoromethane	1.3/1.2 2.2/2.1
	09/09/08	975.16	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	3.3/3.3	<0.50/<0.5	Chloroform Trichlorofluoromethane	1.6/1.6 2.1
ADEQ Aquifer Water Quality Standard			NE	7	70	5	5	* 5	

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Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-63M	01/12/05	958.54	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/31/05	961.11	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	06/13/05	961.12	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/29/05	961.37	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/19/05	963.65	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/23/06	965.67	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	06/08/06	964.15	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/30/06	962.38	<1.0	<0.05	<0.50	<0.50	<0.50	None	
	12/18/06	962.90	<1.0	<0.05	<0.50	<0.50	<0.50	None	
	03/19/07	960.61	<1.0	<0.05	<0.50	<0.50	<0.50	Carbon disulfide	0.50
	05/24/07	958.36	<1.0	<0.05	<0.50	<0.50	<0.50	None	
	09/18/07	958.47	<1.0	<0.05	<0.50	<0.50	<0.50	Chloroform Bromodichloromethane	0.81 0.50
	12/14/07	959.20	<1.0	<0.05	<0.50	<0.50	<0.50	None	
	03/17/08	961.60	<1.0	<0.05	<0.50	<0.50	<0.50	None	
	05/23/08	961.91	<1.0	<0.05	<0.50	<0.50	<0.50	None	
	09/04/08	959.97	<1.0	<0.05	<0.05	<0.05	<0.05	None	
WCP-64	5/4/01[3]	987.86	1	**16 J**	<0.3	**130**	**16**	Chloroform MTBE	1 67
	6/4/01[3]	988.85	0.9/1	**14/16**	<0.2/<0.2	**130/140**	**17/17**	Chloroform MTBE	0.9/1 44/52
	7/6/01[3]	986.80	0.9 J	**15**	<0.2	**170**	**22**	Chloroform MTBE	1 J 51
	10/4/01[3]	986.42	0.7/0.8 J	**14/14 J**	<0.2/<0.2	**100/120 J**	**19/17 J**	Chloroform MTBE	1/0.9 J 46/53 J
	1/9/02[3]	985.65	0.7/0.7	**11/11**	<0.2/<0.2	**100/100**	**15/16**	Chloroform MTBE	0.8/0.9 62/59
	4/10/02[3]	984.99	0.76	**14**	<0.2	**110**	**19**	Chloroform MTBE	0.9 64
	9/19/02[3]	982.12	0.85/0.93	**13/15**	<0.2/<0.2	**140/150**	**21/22**	Chloroform MTBE	1.1/1.1 28/32
	12/12/02[3]	981.69	0.86	**14**	<0.2	**110**	**18**	Chloroform MTBE	1.1 14
	3/12/03[3]	980.78	0.71	**14**	<0.2	**130**	**20**	Chloroform MTBE	0.9 0.76
	06/03/03	980.20	0.97 J	**19**	<0.42	**130**	**21**	Chloroform	1.3
	03/24/04	976.65	<1.0	**18**	<0.50	**96**	**13**	Chloroform	1.1
	06/24/04	975.77	<1.0	**19**	<0.50	**99**	**20**	Chloroform	1.1
	09/17/04	974.84	<1.0	**20**	<0.50	**100**	**23**	Chloroform	1.1
	01/14/05	974.10	<1.0	**13**	<0.50	**95**	**28**	Chloroform	1.1
	03/29/05	974.43	<1.0	**21**	<0.50	**96**	**28**	Chloroform	1.2
	06/09/05	974.62	<1.0	**17**	<0.50	**90**	**20**	None	
	09/26/05	974.73	<1.0	**26**	<0.50	**94**	**28**	Chloroform	1.4
	12/13/05	974.72	<1.0	**20**	<0.50	**85**	**28**	Chloroform	1.3
	03/24/06	975.34	<1.0	**27**	<0.50	**120**	**37**	Chloroform	1.5
	06/09/06	975.12	<1.0	**17**	<0.50	**88**	**23**	Chloroform	1.3
	09/20/06	974.71	<1.0	**13**	<0.50	**68**	**20**	Chloroform	1.1
	12/14/06	974.47	<1.0	**15**	<0.50	**71**	**21**	Chloroform	1.2
	03/14/07	974.45	<1.0	**15**	<0.50	**82**	**22**	Chloroform	1.5
	05/21/07	974.05	<1.0	**15**	<0.50	**76**	**22**	Chloroform	1.4
	09/14/07	973.57	<1.0	**11**	<0.50	**57**	**17**	Chloroform	1.2
	12/14/07	973.01	<1.0	**13**	<0.50	**78**	**26**	Chloroform	1.4
	03/14/08	973.26	<1.0	**13**	<0.50	**68**	**23**	Chloroform Bromodichloromethane	1.5 0.70
	05/23/08	973.50	<1.0	**14**	<0.50	**71**	**23**	Chloroform	1.5
	09/15/08	973.57	<1.0	**16**	<0.50	**84**	**26**	Chloroform	2.0
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-68S	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2007	<0.05	<0.50	<0.50	<0.50	<0.50	<0.50	None	
	12/6/2007	982.7	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	3/11/2008	980.84	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	5/16/2008	980.64	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	9/10/2008	980.77	<1.0	<0.50	<0.50	<0.50	<0.50	None	
WCP-69S	03/14/07	981.90	<1.0	<0.50	<0.50	3.3	<0.50	Chloroform	0,92
	05/16/07	981.00	<1.0	<0.50	<0.50	4.1	<0.50	Chloroform	1.2
	09/10/07	985.68	<1.0	<0.50	<0.50	**5.6**	0.65	Chloroform	0.94
	12/05/07	978.32	<1.0	<0.50	<0.50	3.4	<0.50	Chloroform	1.0
	03/07/08	979.83	<1.0	<0.50	<0.50	3.6	0.62	Chloroform	1.0
	05/16/08	979.67	<1.0	<0.50	<0.50	3.1	<0.50	Chloroform	1.1
	09/10/08	979.85	<1.0	<0.50	<0.50	4.8	0.55	Chloroform	1.2
WCP-205	01/14/05	968.28	<1.0	<0.50	<0.50	3.3	**30**	Chloroform Trichlorofluoromethane	0.50 53
	03/30/05	969.48	<1.0	<0.50	<0.50	3.5	**42**	Trichlorofluoromethane	130
	06/08/05	969.97	<1.0	<0.50	<0.50	2.4	**32**	Dichlorodifluoromethane Trichlorofluoromethane	2.3 100
	09/27/05	970.26	<1.0	<0.50	<0.50	2.8	**46**	Trichlorofluoromethane	220
	12/12/05	970.69	<1.0	<0.50	<0.50	<0.50	**90**	Chloroform Trichlorofluoromethane	0.67 23
	03/22/06	972.00	<1.0	<0.50	<0.50	2.9	**70**	Trichlorofluoromethane	220
	06/05/06	971.98	<1.0	<0.50	<0.50	2.6	**75**	Trichlorofluoromethane	250
	09/18/06	971.12	<1.0	<0.50	<0.50	<0.50	**68**	Benzene Trichlorofluoromethane	1.3 190
	12/12/06	970.68	<1.0	<0.50	<0.50	2.4	**82**	Trichlorofluoromethane	240
	03/07/07	970.73	<1.0	<0.50	<0.50	2.2	**80**	Trichlorofluoromethane	200
	05/17/07	969.55	<1.0	<0.50	<0.50	2.5	**100**	Trichlorofluoromethane	220
	09/07/07	968.61	<1.0	<0.50	<0.50	2.3	**130**	Trichlorofluoromethane	210
	12/04/07	968.06	<1.0	<0.50	<0.50	2.7	**95**	Trichlorofluoromethane	240
	03/06/08	968.94	<1.0	<0.50	<0.50	2.2	**120**	Trichlorofluoromethane	230
	05/14/08	969.24	<1.0	<0.50	<0.50	2	**130**	Trichlorofluoromethane	240
	09/11/08	968.68	<1.0	<0.50	<0.50	2.1	**130**	Trichlorofluoromethane	360
WCP-206	01/13/05	983.59	<1.0	5.0	<0.50	**27**	**11**	Chloroform	1.6
	03/30/05	983.56	<1.0	**7.2**	<0.50	**30**	**9.8**	Chloroform	1.7
	06/09/05	983.58	<1.0	6.6	<0.50	**27**	**7.2**	Acetone Chloroform	140 1.2
	09/27/05	983.47	<1.0	5.5	<0.50	**26**	**8.1**	Acetone Chloroform	32 1.5
	12/13/05	983.39	<1.0	6.0	<0.50	**28**	**9.4**	Chloroform	1.5
	03/22/06	983.85	<1.0	**7.2**	<0.50	**29**	**9.1**	Acetone Chloroform	32 1.5
	06/08/06	983.58	<1.0	5.3	<0.50	**23**	**8.6**	Chloroform	1.5
	09/21/06	938.42	<1.0	4.7	<0.50	**22**	**7**	Chloroform	1.5
	12/13/06	983.12	<1.0	5.7	<0.50	**26**	**8.4**	Chloroform	1.5
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-206 (cont'd)	03/13/07	983.09	<1.0	5.8	<0.50	**28**	**9.9**	Bromodichloromethane Chloroform	0.51 1.8
	05/21/07	982.88	<1.0	5.8	<0.50	**26**	**9.9**	Bromodichloromethane Chloroform	0.50 1.8
	09/12/07	982.38	<1.0	5.2	<0.50	**28**	**10**	Chloroform	1.7
	12/11/07	981.89	<1.0	5.1	<0.50	**31**	**10**	Chloroform	1.8
	03/12/08	981.98	<1.0	5.2	<0.50	**28**	**11**	Chloroform	2
	05/19/08	982.24	<1.0	5.6	<0.50	**26**	**8.7**	Chloroform	1.8
	09/10/08	981.99	<1.0	5.4	<0.50	**29**	**11**	Chloroform	2.2
WCP-207	01/14/05	964.63	<1.0	3.1	0.63	**34**	1.8	Trichlorofluoromethane Chloroform Bromodichloromethane	2.3 1.2 0.65
	03/30/05	966.01	<1.0	3.7	0.82	**40**	1.4	Bromodichloromethane	0.60
	06/08/05	966.53	<1.0	4.9	1.1	**69**	1.2	Acetone Chloroform	40 1.4
	09/27/05	965.82	<1.0	5.6	2.2	**94**	1.9	Chloroform Bromodichloromethane	2.1 1.1
	12/08/05	966.12	<1.0	4.9	1.7	**130**	2.1	Chloroform Bromodichloromethane	2.4 1.1
	03/21/06	967.55	<1.0	5.4	1.7	**120**	2.4	1,1,2-Trichlorotrifluoroethane Chloroform Bromodichloromethane	10 3.7 1.5
	06/09/06	967.50	<1.0	4.1	1.4	**98**	2.5	Chloroform Bromodichloromethane Dibromochloromethane	4.1 1.5 0.60
	09/21/06	966.34	<1.0	3.8	1.4	**72**	1.9	Chloroform Bromodichloromethane	3.8 1.3
	12/13/06	966.18	<1.0	5.1	1.5	**100**	3.3	Chloroform Bromodichloromethane	3.1 0.97
	03/14/07	966.50	<1.0	4.8	1.4	**100**	4.4	Chloroform Bromodichloromethane	2.4 0.82
	05/22/07	965.59	<1.0	4.7	1.1	**100**	**5.5**	Chloroform Bromodichloromethane	2.3 0.75
	09/17/07	966.14	<1.0	3.9	0.87	**76**	**6.1**	Chloroform Bromodichloromethane	1.5 0.52
	12/11/07	963.48	<1.0	4.0	0.94	**76**	**7.1**	Chloroform Bromodichloromethane	1.4 0.53
	03/14/08	964.29	<1.0	5.2	1.2	**83**	**7.4**	Chloroform Bromodichloromethane	1.2 0.80
	05/21/08	--	<1.0	5.6	1.4	**100**	**6.5**	Chloroform	0.98
	09/11/08	964.00		5.8	1.4	**99**	**8.0**	Chloroform	1.2
	12/18/2008[4]	964.02	<0.5	6.0	NA	**88**	**7.7**	None	
	9/23/2010[4]	967.25	<0.5/<0.5	5.8	NA	**81**	**9.4/8.8**	Chloroform	0.72/0.66
	9/15/2011[4]	968.56	NA	3.3	1.2	NA	NA	None	
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-208S	04/07/05	979.56	<1.0	<0.50	<0.50	<0.50	**79**	Chloroform Trichlorofluoromethane	3.1 28
	06/09/05	979.65	<1.0	<0.50	<0.50	<0.50	**79**	Trichlorofluoromethane	18
	09/29/05	979.11	<1.0	<0.50	<0.50	0.50	**48**	Chloroform Trichlorofluoromethane	0.80 19
	12/12/05	979.20	<1.0	<0.50	<0.50	2.1	**30**	Trichlorofluoromethane	86
	03/22/06	980.15	<1.0	<0.50	<0.50	0.62	**79**	Chloroform Trichlorofluoromethane	0.56 28
	06/05/06	980.20	<1.0/<1.0	<0.50/<0.5	<0.50/<0.50	<0.50/0.57	**94/94**	Chloroform Trichlorofluoromethane	<0.50/0.50 28/23
	09/18/06	979.84	<1.0<1.0	<0.50	<0.50	2.4/0.52	**180/120**	Trichlorofluoromethane	26/24
	12/12/06	979.05	<1.0<1.0	<0.50/<0.5	<0.50/<0.50	0.63/1.7	**120/190**	Trichlorofluoromethane	31/740
	03/07/07	979.23	<1.0<1.0	<0.50/<0.5	<0.50/<0.50	0.69/0.69	**140/140**	Trichlorofluoromethane	33/24
	05/17/07	978.62	<1.0<1.0	<0.50/<0.5	<0.50/<0.50	0.7/0.7	**130/130**	Trichlorofluoromethane	33/30
	09/07/07	978.19	<1.0	<0.50	<0.50	0.58	**150**	Trichlorofluoromethane	23
	12/04/07	977.56	<1.0/<1.0	<0.50/<0.5	<0.50/<0.50	0.86/086	**130/140**	Chloroform Trichlorofluoromethane	0.52 34/33
	03/07/08	977.69	<1.0	<0.50/<0.5	<0.50	0.7	**160**	Trichlorofluoromethane	29
	05/14/08	978.03	<1.0/<1.0	<0.50	<0.50/<0.50	0.67/0.56	**140/130**	Trichlorofluoromethane	31/28
	09/11/08	977.81	<1.0/<1.0	<0.50/<0.5	<0.50/<0.50	0.65/0.67	**140/140**	Chloroform Trichlorofluoromethane	0.52 /0.53 35/32
WCP-208M	04/07/05	962.96	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.89
	06/13/05	962.98	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/29/05	963.10	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/19/05	966.24	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/23/06	968.72	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.52
	06/08/06	967.61	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/30/06	965.94	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/18/06	966.35	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/19/07	964.13	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	05/23/07	961.92	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/18/07	962.04	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/14/07	--	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/17/08	964.36	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	05/23/08	964.63	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/04/08	963.50	<1.0	<0.50	<0.50	<0.50	<0.50	Carbon disulfide	0.5
WCP-209	04/08/05	977.94	<1.0	0.54	<0.50	**9.0**	1.2	Benzene* Chloroform Trichlorofluoromethane	0.74 1.9 47
	06/08/05	977.75	<1.0	0.72	<0.50	**10**	0.95	Chloroform Trichlorofluoromethane	1.6 33
	09/29/05	977.74	<1.0	1.7	<0.50	**25**	2.0	Chloroform Trichlorofluoromethane	1.6 6.8
	12/13/05	977.60	<1.0/<1.0	0.65/0.64	<0.50/<0.50	**12/11**	1.6/1.4	Chloroform Trichlorofluoromethane	2.1/2.1 36/35
	03/22/06	977.83	<1.0	0.92	<1.0	**13**	1.4	Chloroform Bromodichloromethane Trichlorofluoromethane	2.4 1.52 34
	06/12/06	977.56	<1.0/<1.0	0.66/0.69	<0.50/<0.50	**13/15**	1.8/2.0	Chloroform Bromodichloromethane Trichlorofluoromethane	2.9/2.8 0.91/0.72 44/45
	09/19/06	977.28	<1.0/<1.0	0.68/0.71	<0.50/<0.50	**12/11**	1.5	Chloroform Bromodichloromethane Trichlorofluoromethane	3.3/3.4 1.01/1.0 32/34
	12/11/06	977.04	<1.0/<1.0	0.82/0.79	<0.50/<0.50	**14/14**	1.7/1.7	Chloroform Bromodichloromethane Trichlorofluoromethane	2.5/2.4 0.50 39/39
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-209 (cont'd)	03/14/07	977.04	<1.0/<1.0	0.92/0.91	<0.50/<0.50	**17/17**	1.91.9	Chloroform Bromodichloromethane Trichlorofluoromethane	3.4/3.4 0.88/0.91 45/44
	05/16/07	976.80	<1.0/<1.0	0.93/0.88	<0.50/<0.50	**17/15**	2.2/1.8	Chloroform Bromodichloromethane Trichlorofluoromethane	3.3/3.6 0.75/0.90 39/36
	09/11/07	976.55	<1.0	0.71	<0.50	**15**	1.9	Chloroform Bromodichloromethane Trichlorofluoromethane	2.6 0.62 30
	12/10/07	976.18	<1.0	0.73	<0.50	**15**	1.8	Dibromochloromethane Chloroform Bromodichloromethane Trichlorofluoromethane	0.55 3.3 0.94 34
	03/10/08	976.13	<1.0	0.77	<0.50	**15**	2.1	Chloroform Bromodichloromethane Trichlorofluoromethane	3.1 0.71 35
	05/19/08	976.27	<1.0/<1.0	0.8/0.77	<0.50/<0.50	**13/13**	1.6/1.7	Chloroform Bromodichloromethane Trichlorofluoromethane	2.4/2.5 0.52/0.53 38/38
	09/11/08	--	<1.0/<1.0	0.8/0.85	<0.50	**15/16**	2.2/2.2	Chloroform Bromodichloromethane Trichlorofluoromethane	3.1/3.0 0.60/0.58 53/54
WCP-210	04/08/05	977.64	<1.0	**24**	<0.50	**97**	**17**	Benzene* Chloroform MTBE	1.1 2.1 20
	06/09/05	977.67	<1.0	**22**	<0.50	**87**	**11**	Benzene* Chloroform	0.92 1.5
	09/29/05	978.08	<1.0	**17**	<0.50	**68**	**17**	Chloroform MTBE	2.0 5.2
	12/13/05	977.61	<1.0	**15**	<0.50	**55**	**10**	Chloroform	1.8
	03/24/06	978.09	<1.0	**29**	<0.50	**88**	14	Benzene* Chloroform	0.60 2.8
	06/09/06	977.90	<1.0	**17**	<0.50	**92**	13	Chloroform Trans-1,3-Dichloropropene	2.1 0.59
	09/20/06	977.56	<1.0	**16**	<0.50	**82**	14	Chloroform	2.0
	12/14/06	977.39	<1.0	**18**	<0.50	**89**	17	Chloroform	2.1
	03/14/07	977.33	<1.0	**17**	<0.50	**100**	18	Chloroform	2.3
	05/22/07	977.05	<1.0	**16**	<0.50	**86**	17	Chloroform	2.2
	09/14/07	976.62	<1.0/<1.0	**14/15**	<0.50/<0.50	**88/84**	16/15	Chloroform	2.3/2.3
	12/13/07	976.07	<1.0	**15**	<0.50	**77**	14	Chloroform	2.3
	03/13/08	976.20	<1.0/<1.0	**16/16**	<0.50/<0.50	**95/180**	14/14	Chloroform	2.1
	05/22/08	976.46	<1.0	**10**	<0.50	**73**	9.8	Chloroform	2.3
	09/12/08	976.13	<1.0	**19**	<0.50	**100**	19	Chloroform	3.1
WCP-211	04/08/05	973.21	<1.0	0.75	<0.50	**18**	3.1	Chloroform Bromodichloromethane	2.2 0.56
	06/08/05	973.52	<1.0	<0.50	<0.50	**9.7**	1.4	None	
	09/27/05	973.21	<1.0	0.50	<0.50	**10**	1.3	Acetone 2-Butanone	45 6.0
	12/12/05	973.20	<1.0	0.50	<0.50	**10**	1.2	None	
	03/22/06	974.67	<1.0	0.73	<0.50	**13**	1.6	None	
	06/12/06	974.62	<1.0	0.73	<0.50	**12**	1.4	None	
	09/18/06	974.06	<1.0	<0.50	<0.50	**13**	2	None	
	12/12/06	973.29	<1.0	0.52	<0.50	**14**	2.2	None	
	03/07/07	973.27	<1.0	0.56	<0.50	**16**	2.1	None	
	05/17/07	972.63	<1.0	0.52	<0.50	**15**	2.2	None	
	09/07/07	972.22	<1.0	0.52	<0.50	**11**	1.7	None	
	12/04/07	971.52	<1.0	0.52	<0.50	**15**	2.2	None	
	03/06/08	972.03	<1.0	0.51	<0.50	**15**	2.5	None	
	05/14/08	972.48	<1.0	0.69	<0.50	**18**	2.9	None	
	09/11/08	971.80	<1.0	<0.50	<0.50	**14**	2.1		
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-212	06/07/06	981.02	<1.0	**9.0**	<0.50	**36**	1.7	Toluene Trichlorofluoromethane	7.9 26
	09/19/06	980.80	<1.0	**8.3**	<0.50	**37**	1.9	Chloroform Bromodichloromethane Trichlorofluoromethane	3.4 1.2 25
	12/12/06	980.68	<1.0	**9.9**	<0.50	**39**	2.1	Chloroform Bromodichloromethane Toluene Trichlorofluoromethane	3.6 1.1 4.1 35
	03/14/07	980.50	<1.0	**8.4**	<0.50	**40**	2	Chloroform Bromodichloromethane Toluene Trichlorofluoromethane	3.9 1.3 3.5 30
	05/21/07	980.46	<1.0	**7.4**	<0.50	**29**	1.8	Chloroform Bromodichloromethane Toluene Trichlorofluoromethane	3.5 0.99 4.1 24
	09/12/07	980.46	<1.0	**7.3**	<0.50	**37**	2.1	Chloroform Bromodichloromethane Trichlorofluoromethane	3.1 0.86 30
	12/10/07	979.90	<1.0	**6.4**	<0.50	**35**	2	Chloroform Bromodichloromethane Trichlorofluoromethane	2.7 0.73 29
	03/11/08	979.82	<1.0/<1.0	**7/7.5**	<0.50/<0.50	**32/34**	2/2.1	Chloroform Bromodichloromethane Trichlorofluoromethane	3.3/3.4 0.85/0.81 34/36
	05/19/08	979.96	<1.0	**7.6**	<0.50	**34**	1.8	Chloroform Bromodichloromethane Trichlorofluoromethane	2.9 0.68 35
	09/09/08	979.74	<1.0	**8.2**	<0.50	**42**	2.6	Chloroform Bromodichloromethane Trichlorofluoromethane	3.7 0.89 50
WCP-213	06/30/06	NM	<1.0	<0.50	<0.50	2.2	**320**	Acetone 4-Isopropyltoluene Trichlorofluoromethane	27 4.7 230
	09/18/06	984.72	<1.0	<0.50	<0.50	1.6	**250**	Trichlorofluoromethane	750
	12/12/06	984.55	<1.0	<0.50	<0.50	1.6	**190**	Chloroform Trichlorofluoromethane	0.51 690
	03/07/07	984.61	<1.0	<0.50	<0.50	2.1	**260**	Chloroform Trichlorofluoromethane	0.59 640
	05/17/07	984.18	<1.0	<0.50	<0.50	2.3	**520**	Chloroform Trichlorofluoromethane	0.61 760
	09/14/07	983.45	<1.0	<0.50	<0.50	1.6	**240**	Carbon disulfide Trichlorofluoromethane	0.71 780
	12/04/07	983.06	<1.0	<0.50	<0.50	1.8	**200**	Trichlorofluoromethane	550
	03/11/08	983.10	<1.0	<0.50	<0.50	2.1	**310**	Chloroform Trichlorofluoromethane	0.57 750
	05/14/08	983.42	<1.0	<0.50	<0.50	1.8	**400**	Chloroform Trichlorofluoromethane	0.55 440
	09/11/08	NM	<1.0	<0.50	<0.50	1.9	**420**	Chloroform Trichlorofluoromethane	0.69 1100
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-214	03/23/06	978.30	1.2	**110**	1.5	**210**	3.5	Chloroform MTBE	2.6 6.6
	06/08/06	978.13	<1.0	**85**	1.2	**250**	**12**	Chloroform MTBE	2.4 4.5
	09/20/06	978.13	4.4	**24**	<050	**140**	**18**	Chloroform	1.1
	12/14/06	977.46	1.7	**59**	0.79	**160**	**20**	Chloroform MTBE	2.1 4.5
	03/14/07	977.73	1.3	**>50**	51	**180**	**19**	Chloroform MTBE	2.8 9.4
	05/22/07	977.29	1.1	**67**	37	**160**	**14**	Chloroform MTBE	2.5 4.4
	09/14/07	976.70	<1.0/<1.0	**48/49**	19/19	**140/140**	**13/12**	Chloroform MTBE	2.1/2.2 3.4/3.5
	12/13/07	976.74	<1.0	**26/26**	31/32	**93/95**	**18/18**	Chloroform MTBE	1.2/1.3 2.5/2.6
	03/13/08	976.71	<1.0	**54**	41	**150**	**9.8**	Chloroform MTBE	2.5 2.9
	05/22/08	NM	NS	NS	NS	NS	NS	NS	
	09/15/08	976.52	<1.0	**57**	**88**	**130**	**25**	Chloroform MTBE	3.1 2.6
WCP-215	03/23/06	979.77	<1.0	4.3	<0.50	**61**	3.2	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	5.8 1.7 14
	06/07/06	979.50	<1.0	2.6	<0.50	**49**	2.7	Chloroform Trichlorofluoromethane	4.1 7.3
	09/19/06	979.37	<1.0	2.8	<0.50	**58**	3.1	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	4.9 1.1 9.4
	12/13/06	979.12	<1.0	2.8	<0.50	**50**	3.1	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	5.2 1.1 10
	03/13/07	979.10	<1.0	3.2	<0.50	**63**	3.8	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	4.4 1.3 11
	05/21/07	979.02	<1.0	3.2	<0.50	**62**	3.8	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	5.6 1.3 10
	09/12/07	978.61	<1.0	2.5	<0.50	**55**	4.1	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	5.0 1.2 7.9
	12/10/07	978.42	<1.0	2.9	<0.50	**61**	3.9	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	5.3 1.2 9.6
	03/12/08	978.26	<1.0	3.6	<0.50	**61**	5.2	Chloroform Trichlorofluoromethane	6.5 12
	05/20/08	NM	<1.0	3.9	<0.50	**60**	4.2	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	6.4 1.1 12
	09/12/08	978.24	<1.0	3.9	<0.50	**54**	4.2	Chloroform Trichlorofluoromethane	6.1 11
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-216	03/23/06	979.92	<1.0	0.92	<0.50	1.3	2.4	Chloroform 2-Butanone Trichlorofluoromethane	0.055 0.058 8.1
	06/07/06	979.65	<1.0	0.64	<0.50	1.5	3.0	Toluene Trichlorofluoromethane	7.2 6.3
	09/19/06	979.74	<1.0	0.6	<0.50	1.7	2.3	Toluene Trichlorofluoromethane	9.3 6.1
	12/11/06	979.42	<1.0	0.79	<0.50	2.0	3.0	Toluene Trichlorofluoromethane	6.7 8.3
	03/13/07	979.32	<1.0	0.91	<0.50	2.5	3.2	Toluene Trichlorofluoromethane	6.5 9.1
	05/16/07	979.43	<1.0	0.78	<0.50	2.7	3.3	Toluene Chloroform Trichlorofluoromethane	3.6 0.52 9.3
	09/11/07	979.15	<1.0	0.78	<0.50	1.9	2.4	Trichlorofluoromethane	8.9
	12/06/07	978.72	<1.0	0.51	<0.50	1.9	2.5	Trichlorofluoromethane	11
	03/10/08	978.74	<1.0	0.50	<0.50	1.4	2.7	Trichlorofluoromethane	13
	05/15/08	978.86	<1.0	0.50	<0.50	1.1	1.9	Trichlorofluoromethane	15
	09/08/08	978.75	<1.0	0.68	<0.50	1.7	3.3	Chloroform Trichlorofluoromethane	0.60 28
WCP-217	04/04/06	--	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	06/13/06	969.66	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/18/06	979.74	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/11/06	968.35	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/07/07	968.30	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	05/17/07	967.01	<1.0	<0.50	<0.50	<0.50	1.2	None	
	09/04/07	965.79	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/04/07	965.09	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/05/08	966.37	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	05/13/08	966.73	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/08/08	966.28	<1.0	<0.50	<0.50	<0.50	<0.50	None	
WCP-218	06/30/06	NM	<1.0	<0.50	<0.50	4.8	3.3	Chloroform	0.74
	09/18/06	984.66	<1.0	<0.50	<0.50	2.8	1.6	Chloroform	0.53
	12/12/06	984.15	<1.0	<0.50	<0.50	3.0	1.9	Chloroform	0.53
	03/07/07	984.15	<1.0	<0.50	<0.50	3.5	2.2	Chloroform Trichlorofluoromethane	0.64 3.4
	05/17/07	983.80	<1.0	<0.50	<0.50	3.5	2.5	Chloroform Trichlorofluoromethane	0.60 3.6
	09/07/07	983.27	<1.0	<0.50	<0.50	3.2	2.9	Chloroform Trichlorofluoromethane	0.52 3.6
	12/04/07	982.72	<1.0	<0.50	<0.50	4.0	3.2	Chloroform Trichlorofluoromethane	0.75 5.9
	03/06/08	982.75	<1.0	<0.50	<0.50	3.6	3.5	Chloroform Trichlorofluoromethane	0.63 5.7
	05/19/08	983.07	<1.0	<0.50	<0.50	3.2	3.3	Chloroform Trichlorofluoromethane	0.62 3.0
	09/10/08	NM	<1.0	<0.50	<0.50	2.9	3.5	Chloroform	0.64
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-219	06/07/06	977.45	<1.0	<0.50	<0.50	<0.50	0.85	Chloroform Bromodichloromethane Trichlorofluoromethane	2.3 0.58 11
	09/19/06	977.32	<1.0	<0.50	<0.50	<0.50	0.65	Chloroform Bromodichloromethane Trichlorofluoromethane	2.3 0.50 12
	12/11/06	977.17	<1.0	<0.50	<0.50	<0.50	0.85	Chloroform Bromodichloromethane Trichlorofluoromethane	2.3 0.51 13
	03/12/07	977.08	<1.0	<0.50	<0.50	<0.50	0.86	Chloroform Trichlorofluoromethane	2.0 11
	05/16/07	977.16	<1.0	<0.50	<0.50	<0.50	0.85	Chloroform Trichlorofluoromethane	1.6 8.7
	09/10/07	976.90	<1.0	<0.50	<0.50	0.52	1.3	Chloroform Trichlorofluoromethane	1.5 9.4
	12/05/07	976.44	<1.0	<0.50	<0.50	0.55	1.1	Chloroform Trichlorofluoromethane	1.3 8.2
	03/11/08	976.31	<1.0	<0.50	<0.50	0.7	1.5	Chloroform Trichlorofluoromethane	1.8 12
	05/15/08	976.52	<1.0	<0.50	<0.50	0.6	1.1	Chloroform Trichlorofluoromethane	1.5 9.2
	09/10/08	976.45	<1.0	<0.50	<0.50	0.68	1.4	Chloroform Trichlorofluoromethane	1.5 13
WCP-225	12/18/06	978.67	<1.0	**74**	<0.50	**120**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	2.0 2.5 3.6
	03/15/07	978.54	<1.0	**63**	<0.50	**75**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.9 3.2
	05/21/07	978.49	<1.0	**72**	<0.50	**84**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.7 3.5
	09/13/07	978.14	<1.0	**59**	<0.50	**76**	0.51	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.5 1.7 2.7
	12/12/07	977.88	<1.0	**72**	<0.50	**97**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.8 3.7
	03/12/08	977.76	1.1	**65**	<0.50	**110**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.8 1.8 3.1
	05/16/08	977.89	1.3	**73**	<0.50	**88**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.7 1.6 3.2
	09/12/08	977.71	1.4	**72**	<0.50	**94**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.9 1.8 3.5
WCP-226	12/18/06	967.09	<1.0	4.0	<0.50	**9.0**	<0.50	Chloroform	1.3
	03/14/07	967.26	<1.0	4.0	<0.50	0.69	<0.50	Chloroform	1.1
	05/22/07	967.12	<1.0	4.0	<0.50	0.72	<0.50	Chloroform	1.0
	09/07/07	965.74	<1.0	4.0	<0.50	0.84	<0.50	Chloroform	0.8
	12/06/07	964.75	<1.0	<0.50	<0.50	0.79	<0.50	Chloroform	0.9
	03/06/08	965.18	<1.0	<0.50	<0.50	0.64	<0.50	Chloroform	1.0
	05/14/08	965.88	<1.0	<0.50	<0.50	0.83	<0.50	Chloroform	1.1
	09/10/08	965.46	<1.0	<0.50	<0.50	1.4	<0.50	Chloroform	0.62
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-227	11/14/06	--	<1.0	**83**	0.94	**140**	3.1	Chloroform MTBE	2.0 3.3
	12/13/06	978.33	<1.0	**63**	0.70	**120**	**2.2**	Chloroform MTBE	1.7 2.8
	03/15/07	978.24	<1.0	**79**	0.97	**170**	**6.2**	Chloroform MTBE	2.4 2.1
	05/21/07	978.17	<1.0	**73**	2	**140**	**6.8**	Chloroform	2.4
	09/17/07	977.62	<1.0	**61**	0.77	**130**	**2.3**	Chloroform	2.6
	12/13/07	977.34	<1.0	**66**	1.4	**150**	**3.2**	Chloroform	1.9
	03/13/08	977.35	<1.0	**64**	14	**180**	**5.2**	Chloroform	2.3
	05/22/08	977.61	<1.0	**48**	8.3	**120**	**2.6**	Chloroform	1.7
	09/12/08	NM	<1.0	**63**	20	**130**	**5.5**	Chloroform	2.0
WCP-228	05/15/07	977.45	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.68
	09/04/07	977.05	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.67
	12/03/07	976.54	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.63
	03/07/08	976.35	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.66
	05/13/08	976.41	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.61
	09/08/08	976.19	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.76
WCP-229	05/15/07	975.41	<1.0	<0.50	<0.50	0.55	<0.50	None	
	09/04/07	975.05	<1.0	<0.50	<0.50	0.67	<0.50	Chloroform	0.5
	12/03/07	974.50	<1.0	<0.50	<0.50	0.77	<0.50	None	
	03/07/08	974.23	<1.0	<0.50	<0.50	0.79	1.3	None	
	05/13/08	974.27	<1.0	<0.50	<0.50	0.79	<0.50	None	
	09/08/08	974.04	<1.0	<0.50	<0.50	0.99	0.52	Chloroform	0.51
WCP-230	05/15/07	981.35	<1.0	**41**	<0.50	**44**	<0.50	Chloroform Trichlorofluoromethane	1.8 2.9
	09/12/07	980.80	<1.0	**50**	3.7	**59**	4.5	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.3 2.7
	12/10/07	980.68	<1.0	**53**	7	**71**	0.54	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.6 1.4 3.3
	03/11/08	980.78	<1.0	**73**	14	**73**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	2.2 1.7 4.8
	05/16/08	980.80	<1.0	**62**	6.1	**62**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	1.9 1.5 3.5
	09/12/08	980.62	<1.0	**56**	7.0	**71**	<0.50	Chloroform 1,2-Dichloroethane Trichlorofluoromethane	2.0 1.6 3.2
WCP-231	05/22/07	987.88	<1.0	**6.9**	<0.50	2	<0.50	Chloroform 1,2-Dichloroethane	2.4 2.5
	09/10/07	987.57	<1.0	**3.4**	<0.50	0.94	<0.50	Chloroform Dichloroethane	2.5 2.1
	12/06/07	987.20	<1.0	**3.8**	<0.50	1.1	<0.50	Chloroform Dichloroethane	2.7 1.9
	03/10/08	987.25	<1.0	**4.3**	<0.50	1	<0.50	Chloroform 1,2-Dichloroethane	3.0 1.9
	05/16/08	987.54	<1.0	**4.3**	<0.50	0.98	<0.50	Chloroform 1,2-Dichloroethane	3.2 1.9
	09/09/08	987.24	<1.0	**3.8**	<0.50	0.96	<0.50	Chloroform 1,2-Dichloroethane	4.0 2.1
WCP-232	05/15/07	997.86	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	3.0
	09/04/07	997.39	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	2.6
	12/03/07	996.96	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	2.6
	03/05/08	996.78	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	2.4
	05/13/08	996.91	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	2.6
	09/08/08	996.27	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	3.4
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-233	05/15/07	991.71	<1.0	<0.50	<0.50	<0.50	<0.50		
	09/04/07	990.87	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.67
	12/03/07	990.26	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.67
	05/05/08	990.39	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.75
	05/13/08	990.49	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.74
	09/08/08	988.85	<1.0	<0.50	<0.50	<0.50	<0.50	Chloroform	0.85
WCP-234	09/12/07	972.89	<1.0	15	<0.50	33	<0.50	Chloroform 1,2-Dichloroethane	0.64 2.1
	12/11/07	972.60	<1.0	16	<0.50	38	<0.50	Chloroform 1,2-Dichloroethane	0.68 2.4
	03/12/08	972.47	<1.0	15	6.5	28	<0.50	1,2-Dichloroethane	2.1
	05/16/08	972.48	<1.0	17	2.9	27	<0.50	Chloroform 1,2-Dichloroethane	0.73 2.2
	09/09/08	972.14	<1.0	20	5.4	35	<0.50	Chloroform 1,2-Dichloroethane	0.98 2.9
WCP-235	09/10/08	964.50	<1.0	<0.50	<0.50	1.8	<0.50	None	
DJM-6	5/4/01[3]	988.74	<0.3	<0.3	<0.3	2	<0.3	Acetone Benzene * Chloroform	16 0.2 J 0.4 J
	6/4/01[3]	990.16	<0.2	<0.2	<0.2	<0.2	<0.2	None	
	7/6/01[3]	989.51	<0.2	0.4 J	<0.2	**6**	0.4 J	Acetone Benzene * Chloroform Ethylbenzene Xylenes	17 J 0.3 J 1 0.8 4
	10/4/01[3]	987.99	<0.2	<0.2	<0.2	**5 J**	<0.2	Acetone Chloroform	6 J 0.8 J
	1/9/02[3]	987.02	<0.2	0.4 J	<0.2	**6**	0.5	Benzene * Chloroform	0.2 J 1
	4/10/02[3]	986.19	<0.2	0.92	<0.2	**7.5**	1.1	Chloroform MTBE	1.6 1.8
	9/19/02[3]	983.74	<0.2	0.53	<0.2	**6.3**	0.58	Chloroform	1.3
	12/12/02[3]	983.46	<0.2	2.7/2.8	<0.2/<0.2	**8.4**/10	0.53/0.55	Acetone Chloroform Carbon Tetrachloride 1,2-Dichloroethane Bromodichloromethane MTBE	2.8/3.7 3.3/3.4 0.44 J/0.46 J 0.44 J/0.46 J 0.33 J/0.33 J 6.4/6.3
	3/12/03[3]	982.44	<0.2	1.7	<0.2	**7.6**	0.68	Chloroform	2.1
	6/3/03[3]	981.69	<0.2	1.5	<0.2	**5**	0.49 J	Acetone Chloroform	25 2.4
	03/23/04	978.81	<1.0	<0.50	<0.50	2.2	<0.50	Acetone Benzene * 2-Butanone MTBE	79 2.3 7.8 3.1
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
DJM-9	06/08/06	978.30	<1.0	0.99	<0.50	**5.0**	0.62	Benzene * Bromodichloromethane Chloroform	0.84 0.93 6.4
	09/21/06	976.08	<1.0	0.76	<050	3.6	<0.50	Benzene * Bromodichloromethane Chloroform	4.0 0.76 4.8
	12/11/06	976.79	<1.0	1.0	<050	4.3	<0.50	Benzene * Bromodichloromethane Chloroform	3.1 0.74 5.5
	03/12/07	976.69	<1.0	0.87	<050	4.0	<050	Benzene * Bromodichloromethane Chloroform	1.5 0.79 5.4
	05/16/07	976.66	<1.0	0.98	<050	4.7	0.53	Benzene * Bromodichloromethane Chloroform Xylenes	13 0.89 5.8 7.7
	09/11/07	976.36	<1.0	0.61	<050	4.1	0.5	Benzene * Bromodichloromethane Chloroform Xylenes	52 0.53 3.5 9.9
	12/10/07	975.90	<1.0	0.54	<050	3.4	<050	Benzene * Chloroform Xylenes	60 3.1 7.7
	03/10/08	975.93	<1.0	0.63	<050	3.5	0.5	Benzene * Bromodichloromethane Chloroform Trichlorofluromethane Xylenes	78 0.56 3.5 2.4 13
	05/15/08	976.18	<1.0	0.80	<050	3.8	0.52	Benzene * Chloroform Trichlorofluromethane Xylenes	58 3.7 3.1 14
	09/09/08	NM	<1.0	0.72	<050	4.0	0.53	Benzene * Chloroform Trichlorofluromethane Xylenes	42 3.6 4.7 8.7
DEC-1	5/4/01[3]	NE	NS	NS	NS	NS	NS	NS	
	6/4/01[3]	NE	NS	NS	NS	NS	NS	NS	
	7/6/01[3]	NE	NS	NS	NS	NS	NS	NS	
	10/4/01[3]	NE	NS	NS	NS	NS	NS	NS	
	1/9/02[3]	NE	NS	NS	NS	NS	NS	NS	
	4/10/02[3]	NE	NS	NS	NS	NS	NS	NS	
	9/19/02[3]	NE	0.49 J	**9.7**	<0.2	**150**	**23**	Chloroform MTBE	0.55 5.2
	12/12/02[3]	NE	NS	NS	NS	NS	NS	NS	
	3/12/03[3]	NE	0.55	**12**	<0.2	**220**	**37**	Chloroform MTBE	0.66 5.1
	6/3/03[3]	NE	<1.0	**12**	<1.0	**220**	**38**	None	
TRIAD-10	03/31/05	985.16	<1.0	**31**	<0.50	**36**	0.88	Benzene * Toluene Total Xylenes Chloroform Bromodichloromethane	**17** 8.5 8.9 4.1 0.51
	12/15/06	984.59	<1.0	**18**	<0.50	**21**	0.67	Benzene * Toluene Total Xylenes Chloroform	**12** 13 12 5.6
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
TRIAD-11	03/31/05	986.15	<1.0	**8.5**	<0.50	**32**	4.6	Benzene * Toluene Ethylbenzene Total Xylenes Chloroform 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	**130** 160 10 95 1.8 6.6 2.7
	06/09/05	986.22	<1.0	**7.3**	<0.50	**20**	2.3	Benzene * Toluene Ethylbenzene Total Xylenes Chloroform	**53** 88 3.1 26.8 1.3
TRIAD-12	03/31/05	985.26	<1.0	**13**	<0.50	**34**	**8.4**	Benzene * Total Xylenes Chloroform	**8.1** 3.4 2.7
	09/28/05	985.14	<1.0	6.9	<0.50	**32**	**8.1**	Benzene * Chloroform	**15** 2.1
	12/13/05	985.09	<1.0	**11**	<0.50	**27**	4.2	Benzene * Chloroform	6.4 2.6
	03/22/06	985.27	<1.0	**12**	<0.50	**29**	4.0	Benzene * Chloroform	24 2.6
	06/09/06	986.15	<1.0	**5.9**	<0.50	**33**	8.0	Benzene * Chloroform	5.3 1.9
	09/21/06	984.89	<1.0	**5.3**	<050	**21**	3.1	Benzene * Chloroform	6.9 2.3
	12/15/06	984.80	<1.0	**8.1**	<0.50	**30**	5.2	Benzene * Chloroform Toluene	**5.4** 2.7 4.0
	03/15/07	984.73	<1.0	**11**	<0.50	**30**	3.4	Benzene * Chloroform	**7.1** 3.3
	05/22/07	984.50	<1.0	**5.8**	1.2	**31**	5.5	Benzene * Chloroform	**12** 3.1
	09/17/07	393.42	<1.0	**7**	<0.50	**28**	4.7	Benzene * Chloroform	**3.8** 3.4
	12/12/07	NM	<1.0	**4.6**	1.4	**22**	4.9	Benzene * Chloroform Ethylbenzene	**69** 2.2 4.9
	03/14/08	983.69	<1.0	**4.1**	3.2	**27**	5.7	Benzene * Chloroform Ethylbenzene Isopropylbenzene n-Propylbenzene Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylenes, Total	**140** 3.6 20 3.7 3.1 7.7 5.3 3.4 12
	05/22/08	983.92	<1.0	**2.2**	1.2	**17**	2.2	Benzene * Chloroform	**2.4** 3.2
	09/16/08	NM	<1.0	**4.9**	1.1	**17**	2.8	Benzene * Chloroform	**29** 3.6
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
TRIAD-13	03/22/06	988.24	<1.0	**7.6**	<0.50	**13**	0.86	Chloroform Bromodichloromethane	4.1 0.72
	06/09/06	987.98	<1.0	**4.1**	<0.50	**16**	4.9	Chloroform Bromodichloromethane	4.6 0.70
	09/21/06	987.77	<1.0	**5.4**	<0.50	**11**	0.91	Chloroform Bromodichloromethane	5.3 0.76
	12/14/06	987.71	<1.0	**7.0**	<0.50	**14**	1.1	Chloroform Bromodichloromethane	5.8 0.76
	03/15/07	987.57	<1.0	**6.2**	<0.50	**13**	0.95	Chloroform Bromodichloromethane	6.4 0.87
	05/22/07	987.40	<1.0	**6.2**	<0.50	**12**	1.1	Chloroform Bromodichloromethane	7.3 0.96
	09/17/07	986.99	<1.0	**5.3**	<0.50	**10**	1.4	Chloroform Bromodichloromethane	7.7 0.92
	12/12/07	986.60	<1.0	**4.8**	<0.50	**11**	1.2	Chloroform Bromodichloromethane	7.9 1.0
	03/14/08	NM	<1.0	**4.4**	<0.50	**7.7**	1.2	Chloroform Bromodichloromethane	9.0 1.4
	05/21/08	986.87	<1.0	**4.3**	<0.50	**8.7**	1.1	Chloroform	8.9
	09/16/08	986.73	<1.0/<1.0	**6.2/6.1**	<0.50/<0.50	**9.1/9.4**	0.77/0.76	Chloroform Bromodichloromethane	14/14 1.4/1.4
TRIAD-14	09/30/06	983.38	<1.0	**25**	<0.50	**36**	0.59	Chloroform	4.0
	12/15/06	983.28	<1.0	**24**	<0.50	**34**	0.77	Chloroform	3.5
	03/15/07	983.23	<1.0	**18**	<0.50	**38**	0.86	Chloroform	4.2
	05/22/07	983.05	<1.0	**25**	<0.50	**34**	0.71	Chloroform	4.5
	09/17/07	982.71	<1.0	**26**	<0.50	**43**	1	Chloroform Bromodichloromethane	4.1 0.51
	12/12/07	982.23	<1.0	**28**	<0.50	**48**	0.99	Chloroform	3.7
	03/14/07	982.21	<1.0	**25**	<0.50	**38**	0.86	Chloroform Bromodichloromethane	4.3 0.94
	05/21/08	982.45	<1.0	**33**	<0.50	**53**	1.2	Chloroform	4.6
	09/16/08	982.37	<1.0	**33**	<0.50	**54**	1.2	Chloroform Bromodichloromethane	5.1 0.58
TRIAD-15	09/30/06	984.61	<1.0	**45**	<0.50	**61**	0.68	Chloroform	8.9
	12/15/06	984.52	<1.0	**54**	<0.50	**69**	0.93	Chloroform	8.1
	03/15/07	983.45	<1.0	**53**	<0.50	**72**	0.88	Chloroform	10
	05/22/07	984.28	<1.0	**42**	<0.50	**50**	0.67	Chloroform	9.5
	09/17/07	983.73	<1.0	**44**	<0.50	**58**	0.76	Chloroform	10
	12/12/07	983.51	<1.0	**42**	<0.50	**53**	0.69	Chloroform	10
	03/14/08	983.48	<1.0	**41**	<0.50	**48**	0.67	Chloroform Bromodichloromethane	11 0.86
	05/21/08	983.74	<1.0	**45**	<0.50	**51**	0.60	Chloroform	12
	09/16/08	983.61	<1.0	**46**	<0.50	**61**	0.81	Chloroform	13
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
MTP-1	05/15/92 [6]	NA	1.3	**9.6**	NA	**16.7**	**12**	Chloroform 1,2-DCE (total) Toluene	0.7 0.7 0.7
	06/24/92 [6]	NA	<0.5	**12**	NA	**15**	**13**	1,1,1-TCA	0.73
	12/03/92 [6]	NA	<0.5	**9.2**	NA	**19**	**14**	None	
	01/21/94 [6]	NA	<0.5	4.9	<0.5	**12**	**9.9**	None	
	2/7/1996 [5]	1032.93	<0.5	5.6	<0.5	**18**	**9.7**	None	
	09/29/05	NM	<1.0	<0.50	<0.50	<0.50	<0.50	Dibromochloromethane	0.60
	12/14/05	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/23/06	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	06/07/06	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/20/06	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/18/06	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	03/15/07	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	05/23/07	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/18/07	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	12/13/07	NM	<1.0	<0.50	<0.50	<0.50	<0.50	Bromoform Dibromochloromethane	2.8 1.1
	03/18/08	NM	<1.0	<0.50	<0.50	<0.50	<0.50	Bromoform	2.1
	05/23/08	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
	09/04/08	NM	<1.0	<0.50	<0.50	<0.50	<0.50	None	
WCP-1	05/04/01	993.58	0.4 J	**49 J**	2	**66**	1	Acetone Chloroform Carbon tetrachloride MTBE	2 1 0.4 J 0.4 J
	06/04/01	994.58	0.5 J	**49**	3 J	**61**	1 J	Acetone Chloroform Carbon tetrachloride	3 UJ 0.9 J 0.3 J
	07/06/01	993.82	0.5 J	**49 J**	4 J	**67 J**	1 J	Chloroform	1 J
WCP-2	5/11/1992 [6]	NA	4.0	**13**	NA	**32**	0.2	Benzene Chloroform 1,2-DCA 1,2-DCE (total) Toluene Total Xylenes	 7.0 2.3 0.8 0.4 0.7 2.5
	6/24/1992 [6]	NA	5.6	**18**	NA	**30**	<0.5	None	
	12/3/1992 [6]	NA	7.5	**23**	**NA**	**39**	<0.5	Chloroform 1,2-DCA	 2.8 1.8
	1/24/94 [6]	NA	13	**20**	<2.5	**40**	<2.5	Benzene	16
	2/8/1996 [5]	1028.08	42	**47**	<0.5	**47**	<0.5	Chloroform 1,2-DCA Trichloroflouromethane	3.4 3.2 0.9
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

TABLE 16
Groundwater Analytical Results - Pre 2013
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	Target Analytes by EPA Method 8260B (µg/L)						
			1,1-DCA	1,1-DCE	cis-1,2-DCE	TCE	PCE	Other Detected Analytes	
WCP-5	06/30/92 [6]	NA	0.5	**130**	NA	**240**	**8.6**	Bromodichloromethane Trichlorofluoromethane	0.6 180
	07/28/92 [6]	NA	<0.5	**100**	NA	**270**	**9.2**	Bromodichloromethane Trichlorofluoromethane	0.5 190
	12/05/92 [6]	NA	<5.0	**67**	NA	**160**	**13**	Trichlorofluoromethane	88
	06/24/93 [1]	NA	NA	**30**	NA	**160**	**7.3**	NA	
	01/24/94 [6]	NA	<2.5	**29**	<2.5	**160**	4.3	Trichlorofluoromethane	71
	2/8/1996 [5]	1028.55	<0.5	3.5	<0.5	**97**	**6.5**	Chloroform Trichlorofluoromethane	1.0 56
WCP-6	6/30/1992 [6]	NA	<0.5	1.3	NA	1.4	<0.5	NA	
	7/28/1992 [6]	NA	<0.5	<0.5	NA	0.9	0.7	NA	
	12/5/1992 [6]	NA	<0.5	1.2	NA	0.9	1.3	None Detected	
	1/21/1994 [6]	NA	<0.5	<0.5	<0.5	1.4	0.6	None Detected	
	2/8/1996 [5]	1025.84	<0.5	0.8	<0.5	2.3	0.8	Methylene Chloride	5.4
WCP-7	06/30/92 [6]	NA	<2.0	**36**	NA	**74**	2.9	Bromodichloromethane Chloroform 1,1,1-TCA	0.8 14 0.8
	07/28/92 [6]	NA	0.9	**13**	NA	**51**	2.6	Bromodichloromethane Carbon Tetrachloride 1,1,1-TCA	0.7 1.0 1.9
	12/04/92 [6]	NA	<12.5	**78**	NA	**320**	<12.5	NA	
	01/24/94 [6]	NA	<5.0	**33**	**72**	**190**	<5.0	Chloroform	9.3
	2/8/1996 [5]	1031.69	0.7	**13**	5.6	**76**	1.8	Carbon Tetrachloride Chloroform	0.6 2.2
WCP-8	12/04/92	NA	<0.5	<0.5	NA	<0.5	<0.5	None Detected	
	02/18/93	NA	<0.5	**<0.5**	NA	**<0.5**	<0.5	Bromodichloromethane	0.7
	1/20/94 [6]	NA	<0.5	<0.5	<0.5	<0.5	<0.5	Chloroform Bromodichloromethane	2.3 2.1
	2/8/1996 [5]	1012.27	<0.5	<0.5	<0.5	<0.5	<0.5	None Detected	
WCP-9	06/24/93 [1]	NA	NA	<0.5	NA	1.5	1.2	NA	
	01/24/94 [1]	NA	NA	<0.5	NA	1.8	1.8	Chloroform Trichlorofluoromethane	0.9 8.1
	2/8/1996 [5]	1033.06	<0.5	<0.5	<0.5	<0.5	0.6	Trichloroflouromethane	26
WCP-12	1/11/96 [5]	NA	<0.5	<0.5	<0.5	2.1	1.5	Benzene	1.9
	2/6/96 [5]	1111.15	<0.5	<0.5	<0.5	2.2	2	Benzene	1.2
WCP-13	1/21/1994 [6]	NA	<0.5	4.5	<0.5	12	8.9	None Detected	
WCP-14	7/10/1992 [6]	NA	1.2	1.5	NA	290	<0.5	1,1,1-TCA	3.8
ADEQ Aquifer Water Quality Standard			**NE**	**7**	**70**	**5**	**5**	*** 5**	

Notes:

VOCs = volatile organic compounds
µg/L = micrograms per liter
ft amsl = feet above mean sea level
1,1- DCA = 1,1-dichloroethane
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
1,1-DCE = 1,1-dichloroethene
PCE = tetrachloroethene
MTBE = methyl tert-butyl ether
NM = not measured
NS = not sampled
NE = none established
J = estimated Value
NA = not analyzed
< = less than detection limit
U = Analyte was not detected above the numerical quantitation limit. (Quantitation limit was raised during validation process.)
**5 = The Aquifer Water Quality Standard (AWQS) for Benzene, Carbon Tetrachloride, 1,2-Dichloroethane, Methylene Chloride and 1,1,2-Tetrachloroethane is 5 µg/L.*
For all other analytes detected, the AWQS is greater than 5 µg/L or has not been established.

ADEQ = Arizona Department of Environmental Quality
Data From Locus, 2005 unless otherwise stated.
[1] = Data source: The Earth Technology Corporation, 1994
[2] = Data source: ADEQ Water Quality Database.
[3] = Data source: Weston Solutions, 2003
[4] = Data from 4/26/13 ADEQ water quality database query
[5] = Data source: The Earth Technologies Corporation, 1996a
[6] = Data source: ADEQ Files

Bold results indicate value greater than or equal to the ADEQ Aquifer Water Quality Standard. Two results indicate sample/duplicate sample results.

Regulatory Source: Aquifer Water Quality Standard 2009

Analyte (EPA Method 8260B) in µg/L	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes, Total	1,1,2-Trichloro ethane	1,1-Dichloro ethane	1,1-Dichloro ethene	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	Acetone	Dichloro bromo methane	Carbon tetra chloride	Chloro form	cis-1,2-Dichloro ethene	Dichloro difluoro methane	m-Xylene and p-Xylene	Methylene Chloride	Methyl tert-butyl ether	o-Xylene	Tetra chloro ethene	Trichloro ethene	Trichloro fluoro methane
AWQS		**5**	**1,000**	**700**	**10,000**	**5**	**NE**	**7**	**NE**	**5**	**NE**	**NE**	**NE**	**NE**	**5**	**NE**	**70**	**NE**	**NE**	**5**	**NE**	**NE**	**5**	**5**	**NE**
WCP-13M	7/30/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/2/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.660**	<0.500	<2.00
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**2.51**	<0.500	<2.00
	11/2/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.45**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**1.8**	**0.71**	<0.50
WCP-25	7/26/2013	**0.50**	<0.50	<0.50	<1.5	<0.50	<0.50	**14**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**5.3**	**1.8**	<0.50	<1.0	<1.0	**0.91**	<0.50	<0.50	**27**	<0.50
	2/28/2014	<0.50	<0.50	<0.50	<1.5	<0.50	**0.55**	**16**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**7.1**	**3.8**	<0.50	<1.0	<1.0	**0.64**	<0.50	<0.50	**37**	<0.50
	1/30/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**20.2**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**4.46**	**2.09**	<2.00	<2.00	<3.00	<2.00	<1.00	**0.710**	**32.8**	<2.00
	11/13/2015	**16.6**	<2.00	<2.00	<1.00	<0.500	<0.500	**13.6**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**6.03**	**1.61**	<2.00	<2.00	<3.00	**3.86**	<1.00	**0.540**	**23.1**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**7.5**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**3.8**	**1.9**	<1.0	<1.0	<2.0	-	<0.50	**0.77**	**22**	<0.50
WCP-26	7/23/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**14**	<0.50	**0.78**	<0.50	-	<10	<0.50	<0.50	**3.6**	**1.9**	<0.50	<1.0	<1.0	<0.50	<0.50	**0.83**	**25**	<0.50
	3/3/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**18**	<0.50	**0.53**	<0.50	-	<10	<0.50	<0.50	**3.2**	**2.6**	<0.50	<1.0	<1.0	<0.50	<0.50	**0.55**	**29**	<0.50
	2/3/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**19.2**	<2.00	**0.610**	<1.50	<5.00	<20.0	<0.500	<0.500	**3.05**	**2.94**	<2.00	<2.00	<3.00	<2.00	<1.00	**0.720**	**33.2**	<2.00
	11/17/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**14.9**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**3.13**	**3.14**	<2.00	<2.00	<3.00	<2.00	<1.00	**0.670**	**32.9**	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**16**	<0.50	**0.39**	<0.50	-	-	<0.50	<0.50	**3.0**	**5.0**	<1.0	<1.0	<2.0	-	<0.50	**2.3**	**52**	<0.50
WCP-27	7/25/2013	<0.50	<0.50	<0.50	<1.5	**0.56**	**1.0**	**21**	<0.50	**0.66**	<0.50	-	<10	<0.50	<0.50	**2.2**	**6.5**	<0.50	<1.0	<1.0	<0.50	<0.50	**5.7**	**80**	<0.50
	2/19/2014	<0.50	<0.50	<0.50	<1.5	<0.50	**1.3**	**17**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.8**	**5.2**	<0.50	<1.0	<1.0	<0.50	<0.50	**4.3**	**65**	<0.50
	1/28/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**1.01**	**18.9**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.47**	**1.82**	<2.00	<2.00	<3.00	<2.00	<1.00	**3.98**	**72.4**	<2.00
	11/16/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**1.30**	**19.9**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.38**	**1.29**	<2.00	<2.00	<3.00	<2.00	<1.00	**3.21**	**56.9**	<2.00
	11/16/2015[a]	<0.500	<2.00	<2.00	<1.00	<0.500	**1.27**	**19.5**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.29**	**1.10**	<2.00	<2.00	<3.00	<2.00	<1.00	**3.38**	**56.9**	<2.00
WCP-59	8/1/2013	**45**	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**17**	<0.50	<0.50	<1.0	<1.0	**1.7**	<0.50	<0.50	<0.50	<0.50
	3/4/2014	**0.94**	<0.50	<0.50	<1.5	<0.50	<0.50	**1.2**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**11**	<0.50	<0.50	<1.0	<1.0	**1.6**	<0.50	<0.50	**2.3**	<0.50
	2/6/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**16.2**	<2.00	**0.770**	<1.50	<5.00	<20.0	<0.500	<0.500	**7.04**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.630**	**24.9**	<2.00
	11/20/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**8.26**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**7.73**	<0.500	<2.00	<2.00	**7.57**	<2.00	<1.00	<0.500	**12.3**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**13**	<0.50	**0.97**	<0.50	-	-	<0.50	<0.50	**4.8**	**0.49**	<1.0	<1.0	<2.0	-	<0.50	**0.92**	**29**	<0.50
WCP-60	8/1/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/25/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/4/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/20/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	**7.69**	<2.00	<1.00	<0.500	**0.790**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50
WCP-61	7/23/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.1**	<0.50	**0.71**	<1.0	<1.0	<0.50	<0.50	<0.50	**1.2**	**37**
	2/19/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.94**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**1.0**	**22**
	2/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.13**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**1.53**	**14.5**
	11/20/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.58**	<0.500	<2.00	<2.00	**7.79**	<2.00	<1.00	<0.500	**1.25**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**2.2**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**0.65**	**11**
WCP-62	7/22/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.3**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**1.6**	**1.8**
	2/18/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.7**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**2.0**	**1.6**
	2/4/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.37**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**1.39**	**2.28**
	11/18/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.17**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**1.01**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**1.2**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**1.3**	**4.1**

Analyte (EPA Method 8260B) in µg/L	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes, Total	1,1,2-Trichloro ethane	1,1-Dichloro ethane	1,1-Dichloro ethene	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	Acetone	Dichloro bromo methane	Carbon tetra chloride	Chloro form	cis-1,2-Dichloro ethene	Dichloro difluoro methane	m-Xylene and p-Xylene	Methylene Chloride	Methyl tert-butyl ether	o-Xylene	Tetra chloro ethene	Trichloro ethene	Trichloro fluoro methane
AWQS		**5**	**1,000**	**700**	**10,000**	**5**	**NE**	**7**	**NE**	**5**	**NE**	**NE**	**NE**	**NE**	**5**	**NE**	**70**	**NE**	**NE**	**5**	**NE**	**NE**	**5**	**5**	**NE**
WCP-63M	7/30/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/10/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.48**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50
WCP-64	7/22/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**6.3**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**3.2**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**10**	**38**	<0.50
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**6.5**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**2.9**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**11**	**42**	<0.50
	2/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**6.13**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**2.82**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**9.36**	**33.6**	<2.00
	11/23/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**9.72**	<2.00	<0.500	<1.50	<5.00	<20.0	**0.600**	<0.500	**5.08**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**18.2**	**44.6**	<2.00
WCP-68s	7/23/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**0.71**	<0.50
	2/17/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**0.86**	<0.50
	1/26/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**0.560**	<2.00
	11/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**0.570**	<2.00
	10/26/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.30**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**0.77**	<0.50
WCP-69s	7/24/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/17/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/3/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/10/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
WCP-205	9/20/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.55**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**190**	**2.2**	**250**
	2/26/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**150**	**1.8**	**230**
	1/27/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**120**	**1.53**	**206**
	11/18/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.530**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**118**	**1.63**	<2.00
	11/18/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.540**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**124**	**1.64**	<2.00
	10/27/2016 [c]	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-	<2.0	<2.0	<2.0	<2.0	<4.0	<4.0	<8.0	-	<2.0	**310**	**2.1**	**240**
WCP-206	7/31/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**3.6**	<0.50	<0.50	<0.50	-	<10	**0.76**	<0.50	**2.2**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**4.6**	**21**	<0.50
	2/19/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**2.9**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.7**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**3.4**	**17**	<0.50
	1/27/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**2.73**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.42**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**3.17**	**12.9**	<2.00
	11/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**3.59**	<2.00	<0.500	<1.50	<5.00	<20.0	**0.600**	<0.500	**1.89**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**2.64**	**10.9**	<2.00
	11/2/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**3.1**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**2.1**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**5.9**	**12**	<0.50
	11/2/2016 [a,c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**2.8**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**2.1**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**5.9**	**12**	<0.50
WCP-207	7/19/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**3.5**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.57**	**0.62**	<0.50	<1.0	<1.0	<0.50	<0.50	**3.7**	**50**	<0.50
	7/19/2013 [a]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**4.0**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.60**	**0.60**	<0.50	<1.0	<1.0	<0.50	<0.50	**5.7**	**62**	<0.50
	2/18/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**3.1**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.1**	**0.57**	<0.50	<1.0	<1.0	<0.50	<0.50	**5.1**	**52**	<0.50
	2/12/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**3.20**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.890**	**0.770**	<2.00	<2.00	<3.00	<2.00	<1.00	**5.27**	**49.3**	<2.00
	2/12/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**3.77**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.080**	**0.800**	<2.00	<2.00	<3.00	<2.00	<1.00	**5.43**	**53.9**	<2.00
	11/23/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**4.47**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.40**	**0.650**	<2.00	<2.00	<3.00	<2.00	<1.00	**5.36**	**54.3**	<2.00
	11/23/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**4.18**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.46**	**0.800**	<2.00	<2.00	<3.00	<2.00	<1.00	**4.80**	**49.5**	<2.00
WCP-208M	7/30/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/2/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	**10.5**	<2.00	<1.00	<0.500	<0.500	<2.00
	10/27/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.39**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50

Analyte (EPA Method 8260B) in µg/L	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes, Total	1,1,2-Trichloro ethane	1,1-Dichloro ethane	1,1-Dichloro ethene	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	Acetone	Dichloro bromo methane	Carbon tetra chloride	Chloro form	cis-1,2-Dichloro ethene	Dichloro difluoro methane	m-Xylene and p-Xylene	Methylene Chloride	Methyl tert-butyl ether	o-Xylene	Tetra chloro ethene	Trichloro ethene	Trichloro fluoro methane
AWQS		**5**	**1,000**	**700**	**10,000**	**5**	**NE**	**7**	**NE**	**5**	**NE**	**NE**	**NE**	**NE**	**5**	**NE**	**70**	**NE**	**NE**	**5**	**NE**	**NE**	**5**	**5**	**NE**
WCP-208S	7/30/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.59**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**140**	**0.91**	**34**
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.66**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**190**	**1.3**	**45**
	2/27/2014[a]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.83**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**210**	**1.7**	**49**
	2/2/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.710**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**251**	**1.17**	**37.7**
	2/2/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.690**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**255**	**1.23**	**37.3**
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.830**	<0.500	<2.00	<2.00	**52.5**	<2.00	<1.00	**224**	**1.18**	<2.00
	11/19/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.840**	<0.500	<2.00	<2.00	**53.5**	<2.00	<1.00	**229**	**1.39**	<2.00
	10/27/2016[c]	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-	<2.0	<2.0	<2.0	<2.0	<4.0	<4.0	<8.0	-	<2.0	**430**	**1.4**	**29**
WCP-209	8/1/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**0.65**	<0.50	<0.50	<0.50	-	<10	**0.78**	<0.50	**3.3**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**1.2**	**11**	**30**
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**1.1**	<0.50	<0.50	<0.50	-	<10	**0.66**	<0.50	**3.7**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**2.5**	**19**	**32**
	2/10/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**0.830**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**2.91**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**1.96**	**14.0**	**15.4**
	2/10/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**0.860**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**2.79**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**1.85**	**13.3**	**15.2**
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**1.13**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**3.28**	<0.500	<2.00	<2.00	**53.3**	<2.00	<1.00	**2.43**	**17.2**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**0.89**	<0.50	**0.47**	<0.50	-	-	<0.50	<0.50	**3.9**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**4.2**	**22**	**19**
WCP-210	7/18/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**8.0**	<0.50	<0.50	<0.50	-	<10	**0.77**	<0.50	**10**	<5.00	<0.50	<1.0	<1.0	<0.50	<0.50	**4.5**	**32**	<0.50
	2/27/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**10**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**13**	<5.00	<0.50	<1.0	<1.0	<0.50	<0.50	**4.7**	**46**	<0.50
	2/10/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**0.800**	**10.7**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**9.32**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**8.66**	**57.4**	<2.00
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**0.510**	**11.7**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**8.52**	<0.500	<2.00	<2.00	**51.8**	<2.00	<1.00	**5.54**	**40.3**	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	**0.31**	**7.6**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**8.2**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**8.3**	**35**	<0.50
WCP-211	8/2/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**4.1**	<0.50
	2/26/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**5.1**	<0.50
	2/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.750**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**3.11**	<2.00
	11/18/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.840**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.920**	**5.36**	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.47**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**1.8**	**7.0**	<0.50
WCP-212	7/31/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**3.8**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**2.1**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**0.92**	**24**	**34**
	2/25/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**4.3**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**2.4**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**36**	**37**
	2/3/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**4.22**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.89**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.960**	**24.4**	**24.5**
	11/20/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**4.26**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**2.37**	<0.500	<2.00	<2.00	**8.89**	<2.00	<1.00	**1.17**	**28.0**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**4.9**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**2.6**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**2.6**	**42**	**24**
WCP-213	7/26/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.54**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**250**	**2.0**	**2,300**
	2/26/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	**1.4**	**0.56**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**180**	**2.5**	**2,000**
	1/27/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.600**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**183**	**3.00**	**902**
	1/27/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.560**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**217**	**3.04**	**1,100**
	11/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.750**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**225**	**3.10**	<2.00
	11/11/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.690**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**231**	**3.14**	<2.00
	10/27/2016[c]	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	<5.0	<5.0	<5.0	<5.0	<10	<10	<20	-	<5.0	**320**	<5.0	**680**
WCP-214	7/29/2013	<0.50	<0.50	<0.50	<1.5	<0.50	**0.51**	**39**	<0.50	**1.5**	<0.50	-	<10	**0.54**	<0.50	**3.5**	**0.85**	<0.50	<1.0	<1.0	<0.50	<0.50	**1.7**	**90**	<0.50
	7/29/2013[a]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**37**	<0.50	**1.7**	<0.50	-	<10	**0.59**	<0.50	**3.4**	**0.93**	<0.50	<1.0	<1.0	<0.50	<0.50	**1.7**	**90**	<0.50
	2/25/2014	<0.50	<0.50	<0.50	<1.5	<0.50	**1.2**	**62**	<0.50	**2.0**	<0.50	-	<10	<0.50	<0.50	**4.6**	**1.3**	<0.50	<1.0	<1.0	**40**	<0.50	**7.4**	**150**	<0.50
	2/5/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**1.01**	**38.6**	<2.00	**1.35**	<1.50	<5.00	<20.0	<0.500	<0.500	**2.89**	**0.960**	<2.00	<2.00	<3.00	**16.3**	<1.00	**4.34**	**162**	<2.00
	2/5/2015 [a]	<0.500	<2.00	<2.00	<1.00	<0.500	**0.940**	**39.0**	<2.00	**1.36**	<1.50	<5.00	<20.0	<0.500	<0.500	**2.94**	**0.990**	<2.00	<2.00	<3.00	**15.6**	<1.00	**4.32**	**158**	<2.00
	11/19/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**1.33**	**51.3**	<2.00	**1.43**	<1.50	<5.00	<20.0	<0.500	<0.500	**2.98**	**1.50**	<2.00	<2.00	**53.1**	**19.0**	<1.00	**6.47**	**199**	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	**0.43**	**29**	<0.50	**1.6**	<0.50	-	-	<0.50	<0.50	**4.3**	**0.60**	<1.0	<1.0	<2.0	-	<0.50	**2.7**	**110**	<0.50

Analyte (EPA Method 8260B) in µg/L	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes, Total	1,1,2-Trichloro ethane	1,1-Dichloro ethane	1,1-Dichloro ethene	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	Acetone	Dichloro bromo methane	Carbon tetra chloride	Chloro form	cis-1,2-Dichloro ethene	Dichloro difluoro methane	m-Xylene and p-Xylene	Methylene Chloride	Methyl tert-butyl ether	o-Xylene	Tetra chloro ethene	Trichloro ethene	Trichloro fluoro methane
AWQS		**5**	**1,000**	**700**	**10,000**	**5**	**NE**	**7**	**NE**	**5**	**NE**	**NE**	**NE**	**NE**	**5**	**NE**	**70**	**NE**	**NE**	**5**	**NE**	**NE**	**5**	**5**	**NE**
WCP-215	7/25/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**1.9**	<0.50	<0.50	<0.50	-	<10	**0.78**	<0.50	**7.1**	**1.0**	<0.50	<1.0	<1.0	<0.50	<0.50	**2.2**	**40**	**7.4**
	2/21/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**2.1**	<0.50	<0.50	<0.50	-	<10	**0.67**	<0.50	**7.1**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**2.4**	**45**	**7.1**
	2/3/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**2.04**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**4.83**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**1.90**	**32.9**	**14.1**
	11/17/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**1.76**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**4.00**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**1.15**	**27.6**	<2.00
WCP-216	7/25/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**2.0**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	**24**
	2/21/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**1.4**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	**17**
	2/3/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**1.54**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	**19.2**
	11/17/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	**0.530**	<0.500	**3.44**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**4.5**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	**21**
WCP-217	7/26/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	**13**	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**1.0**	<0.50	<0.50
	2/28/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**2.0**	<0.50	<0.50
	1/27/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**1.19**	<0.500	<2.00
	11/17/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50
WCP-218	7/26/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**1.4**	**2.4**	**11**
	2/25/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**3.8**	**2.8**	**18**
	2/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.860**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**3.04**	**1.30**	**5.26**
	11/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.990**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**3.20**	**1.73**	<2.00
	10/28/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**1.5**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**8.7**	**2.5**	**4.5**
WCP-219	2/26/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**7.0**	**22**
	2/4/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.700**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**2.64**	**13.1**
	11/18/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.910**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**4.08**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**1.2**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**4.6**	**20**
WCP-225	7/29/2013	<0.50	<0.50	<0.50	<1.5	<0.50	**1.7**	**39**	<0.50	**2.3**	<0.50	-	<10	<0.50	<0.50	**1.9**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**69**	**2.1**
	3/4/2014	<0.50	<0.50	<0.50	<1.5	<0.50	**1.7**	**46**	<0.50	**1.9**	<0.50	-	<10	<0.50	<0.50	**2.0**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**64**	**2.8**
	2/5/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**1.46**	**45.2**	<2.00	**1.47**	<1.50	<5.00	<20.0	<0.500	<0.500	**1.55**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**57.9**	<2.00
	11/17/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**1.63**	**52.7**	<2.00	**1.62**	<1.50	<5.00	<20.0	<0.500	<0.500	**1.69**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**56.9**	<2.00
	10/26/2016[c]	<0.50	<0.50	<0.50	-	<0.50	**1.6**	**46**	<0.50	**1.7**	<0.50	-	-	<0.50	<0.50	**1.7**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**73**	**2.5**
	10/26/2016[a,c]	<0.50	<0.50	<0.50	-	<0.50	**1.5**	**48**	<0.50	**1.8**	<0.50	-	-	<0.50	<0.50	**1.6**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**73**	**2.6**
WCP-226	7/19/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**1.6**	<0.50
	2/18/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	**0.87**	<0.50	**1.9**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**1.9**	<0.50
	2/12/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	**1.51**	<0.500	**3.58**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**1.07**	<2.00
	11/10/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	**1.74**	<0.500	**3.99**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**1.06**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**3.9**	<0.50	<1.0	<1.0	**1.0**	-	<0.50	**0.38**	**1.6**	<0.50
WCP-228	7/18/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	3/3/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.66**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**0.50**	<0.50
	2/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/23/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**0.690**	<2.00
	10/26/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.53**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.500	**0.71**	<0.50
WCP-229	7/23/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.58**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**2.0**	<0.50
	2/25/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**0.64**	<0.50	<0.50	<1.0	<1.0	**0.58**	<0.50	**0.93**	**2.7**	<0.50
	2/10/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.630**	**1.62**	<2.00
	11/20/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.690**	<0.500	<2.00	<2.00	**8.43**	<2.00	<1.00	**0.860**	**2.19**	<2.00
	10/26/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**1.9**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**1.4**	**2.6**	<0.50

Analyte (EPA Method 8260B) in µg/L	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes, Total	1,1,2-Trichloro ethane	1,1-Dichloro ethane	1,1-Dichloro ethene	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	Acetone	Dichloro bromo methane	Carbon tetra chloride	Chloro form	cis-1,2-Dichloro ethene	Dichloro difluoro methane	m-Xylene and p-Xylene	Methylene Chloride	Methyl tert-butyl ether	o-Xylene	Tetra chloro ethene	Trichloro ethene	Trichloro fluoro methane
AWQS		**5**	**1,000**	**700**	**10,000**	**5**	**NE**	**7**	**NE**	**5**	**NE**	**NE**	**NE**	**NE**	**5**	**NE**	**70**	**NE**	**NE**	**5**	**NE**	**NE**	**5**	**5**	**NE**
WCP-230	7/22/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**35**	<0.50	**2.9**	<0.50	-	<10	<0.50	<0.50	**2.0**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**84**	**2.0**
	3/3/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**43**	<0.50	**2.8**	<0.50	-	<10	<0.50	<0.50	**1.9**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**88**	**1.8**
	3/3/2014[a]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**50**	<0.50	**3.4**	<0.50	-	<10	<0.50	<0.50	**2.1**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**85**	**1.9**
	2/5/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**59.0**	<2.00	**1.90**	<1.50	<5.00	<20.0	<0.500	<0.500	**1.81**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**93.7**	**2.32**
	3/6/15 132.5'	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**59.5**	<2.00	**2.16**	<1.50	**1,990**	**1,030**	<0.500	<0.500	**1.85**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**118**	**2.46**
	3/6/15 140'	<5.00	<20.0	<20.0	<10.0	<5.00	<5.00	**55.0**	<20.0	<5.00	<15.0	**523**	**287**	<5.00	<5.00	<5.00	<5.00	<20.0	<20.0	<30.0	<20.0	<10.0	<5.00	**111**	<20.0
	3/6/15 147.5'	<5.00	<20.0	<20.0	<10.0	<5.00	<5.00	**55.1**	<20.0	<5.00	<15.0	**1,740**	**908**	<5.00	<5.00	<5.00	<5.00	<20.0	<20.0	<30.0	<20.0	<10.0	<5.00	**114**	<20.0
	3/6/15 156'	<5.00	<20.0	<20.0	<10.0	<5.00	<5.00	**75.6**	<20.0	<5.00	<15.0	**1,920**	**1,010**	<5.00	<5.00	<5.00	<5.00	<20.0	<20.0	<30.0	<20.0	<10.0	<5.00	**134**	<20.0
	3/6/15 163.5'	<5.00	<20.0	<20.0	<10.0	<5.00	<5.00	**71.1**	<20.0	<5.00	<15.0	**1,890**	**1,030**	<5.00	<5.00	<5.00	<5.00	<20.0	<20.0	<30.0	<20.0	<10.0	<5.00	**122**	<20.0
	11/23/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**0.610**	**74.4**	<2.00	**2.31**	<1.50	<5.00	<20.0	<0.500	<0.500	**2.18**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**102**	<2.00
	10/26/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**67**	<0.50	**1.8**	<0.50	-	-	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	-	<0.50	**0.43**	**120**	**5.7**
WCP-230M	2/05/2016	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**0.600**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	10/26/2016[c]	<0.50	**0.73**	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.50**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**0.71**	<0.50
WCP-231	7/29/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**0.55**	<0.50	**2.0**	<0.50	-	<10	<0.50	<0.50	**3.2**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	3/4/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**1.7**	<0.50	**1.7**	<0.50	-	<10	<0.50	<0.50	**2.8**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**0.79**	<0.50
	1/28/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**1.17**	<2.00	**1.04**	<1.50	<5.00	<20.0	<0.500	<0.500	**2.40**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/18/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**1.57**	<2.00	**1.12**	<1.50	<5.00	<20.0	<0.500	<0.500	**3.14**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**0.81**	<0.50	**1.1**	<0.50	-	-	<0.50	<0.50	**3.2**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**0.39**	<0.50
WCP-232	7/19/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**2.3**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/18/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**2.1**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/5/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**2.23**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**2.37**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
WCP-233	7/19/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	2/18/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50
	1/30/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	11/11/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50
WCP-234	8/2/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**22**	<0.50	**4.9**	<0.50	-	<10	<0.50	<0.50	**0.79**	<0.50	<0.50	<1.0	**1.3**	<0.50	<0.50	<0.50	**35**	**0.74**
	8/2/2013[a]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**18**	<0.50	**3.3**	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**27**	<0.50
	8/2/2013[b]	<0.50	<0.50	<0.50	<1.5	<0.50	**1.1**	**19**	<0.50	**3.0**	<0.50	-	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**27**	**1.5**
	3/3/2014	<0.50	<0.50	<0.50	<1.5	<0.50	**0.86**	**18**	<0.50	**3.1**	<0.50	-	<10	<0.50	<0.50	**0.71**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**30**	**1.1**
	2/4/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**0.890**	**19.2**	<2.00	**2.71**	<1.50	<5.00	<20.0	<0.500	<0.500	**0.870**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**24.8**	<2.00
	11/16/2015	<0.500	<2.00	<2.00	<1.00	<0.500	**0.820**	**17.8**	<2.00	**2.13**	<1.50	<5.00	<20.0	<0.500	<0.500	**0.810**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**20.4**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	**0.98**	**23**	<0.50	**2.9**	<0.50	-	-	<0.50	<0.50	**0.96**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**48**	**0.83**
WCP-241	11/23/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	<0.500	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	<0.500	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.49**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50
	10/27/2016[a,c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**0.47**	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	<0.50	<0.50
WCP-242	10/27/2016[c]	<0.50	**0.42**	<0.50	-	<0.50	<0.50	**1.7**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<2.0	-	<0.50	<0.50	**2.7**	**0.87**
DJM-13	8/1/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	**0.52**	<0.50	**3.7**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**2.1**	**2.8**
	2/19/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**3.6**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**2.1**	**2.3**
	2/19/2014[a]	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<10	**0.62**	<0.50	**3.4**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**1.9**	**2.4**
	11/16/2015	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**0.920**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**6.54**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**2.25**	<2.00
	11/1/2016 [c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**1.1**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**5.8**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**0.46**	**2.9**	**1.0**
	11/1/2016 [a,c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**0.72**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**5.9**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**0.50**	**2.9**	**1.1**
Triad-10	7/24/2013	**1.0**	<0.50	<0.50	<1.5	<0.50	<0.50	**3.5**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**8.6**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**4.6**	<0.50
	2/20/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**2.8**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**7.1**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**3.7**	<0.50
	1/29/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**3.02**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**7.48**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**3.00**	<2.00
	11/12/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**2.44**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**7.69**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**2.07**	<2.00

TABLE 17
Groundwater Analytical Results - 2013 to 2016
ADEQ West Central Phoenix North Canal Plume WQARF Site

Analyte (EPA Method 8260B) in µg/L	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes, Total	1,1,2-Trichloro ethane	1,1-Dichloro ethane	1,1-Dichloro ethene	1,2,4-Trimethyl benzene	1,2-Dichloro ethane	1,3,5-Trimethyl benzene	2-Butanone	Acetone	Dichloro bromo methane	Carbon tetra chloride	Chloro form	cis-1,2-Dichloro ethene	Dichloro difluoro methane	m-Xylene and p-Xylene	Methylene Chloride	Methyl tert-butyl ether	o-Xylene	Tetra chloro ethene	Trichloro ethene	Trichloro fluoro methane
AWQS		**5**	**1,000**	**700**	**10,000**	**5**	**NE**	**7**	**NE**	**5**	**NE**	**NE**	**NE**	**NE**	**5**	**NE**	**70**	**NE**	**NE**	**5**	**NE**	**NE**	**5**	**5**	**NE**
Triad-11	7/24/2013	**63**	**70**	**3.0**	**160**	<0.50	<0.50	**0.95**	**9.4**	<0.50	**3.5**	-	<10	<0.50	<0.50	**5.1**	<0.50	<0.50	**110**	<1.0	**1.2**	**52**	**1.4**	**12**	<0.50
	2/20/2014	**15**	**31**	**1.7**	**38**	<0.50	<0.50	<0.50	**2.2**	<0.50	**1.2**	-	<10	<0.50	<0.50	**3.3**	<0.50	<0.50	**24**	<1.0	**0.84**	**14**	**1.0**	**8.4**	<0.50
	2/20/2014[a]	**15**	**29**	**1.5**	**37**	<0.50	<0.50	<0.50	**1.9**	<0.50	**1.0**	-	<10	<0.50	<0.50	**3.4**	<0.50	<0.50	**23**	<1.0	**0.80**	**14**	**0.96**	**8.0**	<0.50
	1/29/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**0.590**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**3.44**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.770**	**6.74**	<2.00
	11/12/2015	**2.41**	**3.62**	<2.00	**7.04**	<0.500	<0.500	<0.500	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**6.75**	<0.500	<2.00	**2.63**	<3.00	<2.00	**4.41**	**0.830**	**4.39**	<2.00
Triad-12	7/24/2013	**4.2**	<0.50	**0.86**	<1.5	<0.50	<0.50	**2.6**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**14**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**5.2**	**11**	<0.50
	7/24/2013[a]	**4.6**	<0.50	**0.90**	<1.5	<0.50	<0.50	**2.9**	<0.50	<0.50	<0.50	-	<10	**0.53**	<0.50	**15**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**6.3**	**13**	<0.50
	2/20/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**1.1**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**7.4**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**1.9**	**5.6**	<0.50
	1/29/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**1.89**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**13.0**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**2.04**	**6.29**	<2.00
	11/12/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**0.600**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**5.41**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**1.61**	**5.53**	<2.00
Triad-13	7/24/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**2.1**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**21**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**0.83**	**5.1**	<0.50
	2/20/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**2.1**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**21**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**0.96**	**4.6**	<0.50
	1/29/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**2.01**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**28.4**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.840**	**3.80**	<2.00
	11/12/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**1.44**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**24.9**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	**0.520**	**2.61**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**0.76**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**23**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**4.3**	**2.8**	<0.50
Triad-14	8/2/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**16**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**8.9**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**43**	<0.50
	3/4/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**12**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**6.5**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	**0.51**	**26**	<0.50
	1/29/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**4.81**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**4.36**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**19.4**	<2.00
	11/13/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**4.12**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**4.35**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**23.7**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**3.3**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**3.8**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**0.46**	**32**	<0.50
Triad-15	7/31/2013	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**29**	<0.50	<0.50	<0.50	-	<10	**0.52**	<0.50	**21**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**38**	<0.50
	3/4/2014	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	**23**	<0.50	<0.50	<0.50	-	<10	<0.50	<0.50	**17**	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	**26**	<0.50
	1/29/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**21.4**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**16.1**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**25.0**	<2.00
	11/12/2015	<0.500	<2.00	<2.00	<1.00	<0.500	<0.500	**20.1**	<2.00	<0.500	<1.50	<5.00	<20.0	<0.500	<0.500	**22.5**	<0.500	<2.00	<2.00	<3.00	<2.00	<1.00	<0.500	**23.4**	<2.00
	10/27/2016[c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**16**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**21**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**0.39**	**25**	<0.50
	10/27/2016[a,c]	<0.50	<0.50	<0.50	-	<0.50	<0.50	**16**	<0.50	<0.50	<0.50	-	-	<0.50	<0.50	**22**	<0.50	<1.0	<1.0	<2.0	-	<0.50	**0.41**	**25**	<0.50

Notes:
[a] Duplicate sample.
[b] WCP-234 was resampled due to questionable validity of the original sample.
[c] October and November 2016 samples collected by Geosyntec Consultants.
µg/L = micrograms per liter
AWQS = Aquifer Water Quality Standard
NE = Not Established
- Samples not analyzed for this particular analyte during sampling event.
Bold values exceed the reporting limit.
See laboratory report for other compounds included in EPA Method 8260B analysis, but not detected above laboratory reporting limit.

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-13M	03/23/06	NA	0.030	<0.010	NA	NA	NA	NA	
	06/08/06	NA	0.015	0.019	NA	NA	NA	NA	
	09/22/06	NA	0.013	0.015	NA	NA	NA	NA	
	12/18/06	NA	0.033	0.017	NA	NA	NA	NA	
	03/19/07	NA	0.024	0.018	NA	NA	NA	NA	
	05/23/07	NA	0.054	0.013	NA	NA	NA	NA	
	09/18/07	NA	0.025	0.012	NA	NA	NA	NA	
	12/14/07	NA	0.018	0.013	NA	NA	NA	NA	
	03/17/08	NA	0.020	0.012	NA	NA	NA	NA	
	05/23/08	NA	0.016	<0.010	NA	NA	NA	NA	
	09/04/08	NA	0.048	0.013	NA	NA	NA	NA	
	07/30/13[2]	NA	**0.300**	NA	NA	NA	NA	NA	
WCP-25	5/4/01[1]	<0.0029	**0.312**	NS	NA	0.0063	0.0093	Selenium	0.003
	6/4/01[1]	0.0045 U	0.0439	NA	0.0023 U	0.0122	0.0079	Selenium Antimony	0.003 0.007 U
	7/6/01[1]	<0.0029	0.0386	NA	0.0018 U	0.0072	0.0114 U	Selenium	0.002 U
	10/4/01[1]	<0.0029	0.0376 J	NA	0.0024 J	<0.0047	0.0212 U	Selenium	0.002 J
	1/9/02[1]	*Dis:* <0.0058 *Ttl:* 0.0056	*Dis: 0.0*21 *Ttl: 0.0*50	NA	*Dis:* <0.0012 *Ttl:* 0.0060 U	*Dis:* <0.0020 *Ttl:* 0.0216	*Dis:* <0.0042 *Ttl:* 0.0187	Lead Selenium	*Dis:* <0.0046 *Ttl:* 0.005 *Dis*: 0.0057 *Ttl*: 0.0029
	4/10/02[1]	*Dis:* <0.0037 *Ttl:* <0.0037	*Dis:* 0.017 *Ttl:* 0.022	NA	*Dis:* <0.0010 *Ttl:* 0.0013 J	*Dis:* 0.0025 J *Ttl:* 0.0053	*Dis:* 0.005 J *Ttl:* 0.01	Selenium	*Dis*: <0.0021 *Ttl*: 0.0039
	9/19/02[1]	<0.0037	0.018	NA	<0.0010	0.0023 J	0.01	Selenium	0.0030
	12/12/02[1]	<0.0074	**0.330**	0.360	<0.0020	<0.0034	<0.006	None	
	3/12/03[1]	NA	NA	NA	NA	NA	NA	NA	
	6/3/03[1]	NA	0.065	0.050	NA	NA	NA	NA	
	03/23/04	NA	0.049	<0.020	NA	NA	NA	NA	
	06/24/04	NA	0.076	0.029	NA	NA	NA	NA	
	09/17/04	NA	0.048	<0.020	NA	NA	NA	NA	
	01/14/05	NA	0.043	<0.020	NA	NA	NA	NA	
	03/30/05	NA	**0.33**	<0.020	NA	NA	NA	NA	
	06/09/05	NA	**0.53**	0.10	NA	NA	NA	NA	
	09/28/05	NA	0.038	<0.010	NA	NA	NA	NA	
	12/13/05	NA	0.059	<0.010	NA	NA	NA	NA	
	03/24/06	NA	0.032	0.016	NA	NA	NA	NA	
	06/08/06	NA	0.027/0.024	<0.010/ <0.010	NA	NA	NA	NA	
	09/20/06	NA	0.021	0.025	NA	NA	NA	NA	
	12/13/06	NA	0.022/0.021	<0.010/ <0.010	NA	NA	NA	NA	
	03/15/07	NA	0.076/0.065	<0.010/ <0.010	NA	NA	NA	NA	
	05/22/07	NQ	0.023 / 0.023	0.014 / 0.018	NA	NA	NA	NA	
	09/13/07	NA	0.029/0.026	0.033/0.038	NA	NA	NA	NA	
	12/11/07	NA	0.036	0.029	NA	NA	NA	NA	
	03/13/08	NA	0.047	0.016	NA	NA	NA	NA	
	05/20/08	NA	0.022/0.021	0.015/0.015	NA	NA	NA	NA	
	09/15/08	NA	0.02	0.022	NA	NA	NA	NA	
	7/26/13[2]	NA	0.012	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-26	5/4/01[1]	<0.0029	**0.503**	NA	0.0091	0.0189	0.0211	Beryllium Selenium	0.0006 U 0.0032 U
	6/4/01[1]	0.0036 U	**0.269**	NA	<0.00061	<0.0010	0.01	Antimony Selenium	0.0098 U 0.0028 U
	7/6/01[1]	0.0029 U/0.0029 U	**0.296/0.341**	NA	0.0032 U/0.0034 U	0.0095/0.0096	0.0156 U/0.0113 U	Selenium	0.0049 U/0.0030 U
	10/4/01[1]	<0.0029	**0.124 J**	NA	0.0014 U	<0.0047	0.0119 U	Antimony Selenium	0.0062 J 0.0032 J
	1/9/02[1]	*Dis:* <0.0058 *Ttl:* 0.0044 J	*Dis:* 0.0861 *Ttl:* 0.0877	NA	*Dis:* 0.0016 U *Ttl:* 0.0016 U	*Dis:* 0.0022 J *Ttl:* 0.0023 U	*Dis:* 0.0042 *Ttl:* 0.0042 J	Selenium	*Dis*: 0.0047 J *Ttl*: <0.0021
	4/10/02[1]	*Dis:* <0.0037/<0.0037 *Ttl:* <0.0037/<0.0037	*Dis:* 0.075/0.08 *Ttl:* **0.110/0.100**	NA	*Dis:* <0.0010/<0.0010 *Ttl:* 0.0038 J/0.0039 J	*Dis:* 0.0026 J/0.0029 J *Ttl:* 0.012/0.014	*Dis:* 0.0098 J/0.0042 J *Ttl:* 0.017/0.049	Selenium	*Dis*: <0.0021/<0.0021 *Ttl*: 0.0038/0.0041
	9/19/02[1]	<0.0037	**0.110**	NA	<0.0010	<0.0017	<0.0029	Selenium	0.004
	12/12/02[1]	<0.0074	**1.100**	1.100	<0.002	<0.0034	<0.0058	None	
	3/12/03[1]	NA	**1.700**	1.600	NA	NA	NA	NA	
	6/3/03[1]	NA	**1.700**	1.700	NA	NA	NA	NA	
	03/24/04	NA	**0.380**	0.400	NA	NA	NA	NA	
	06/24/04	NA	**0.36**	0.48	NA	NA	NA	NA	
	09/17/04	NA	**0.27**	0.25	NA	NA	NA	NA	
	01/13/05	NA	**0.33**	0.29	NA	NA	NA	NA	
	03/29/05	NA	**0.27**	0.28	NA	NA	NA	NA	
	06/09/05	NA	**0.28**	0.25	NA	NA	NA	NA	
	09/28/05	NA	**0.25**	0.25	NA	NA	NA	NA	
	12/14/05	NA	**0.23**	0.19	NA	NA	NA	NA	
	03/24/06	NA	**0.21**	0.19	NA	NA	NA	NA	
	06/08/06	NA	NA	NA	NA	NA	NA	NA	
	09/20/06	NA	**0.16**	0.11	NA	NA	NA	NA	
	12/13/06	NA	**0.15**	0.16	NA	NA	NA	NA	
	03/13/07	NA	**0.11**	0.081	NA	NA	NA	NA	
	05/21/07	NA	**0.11**	0.084	NA	NA	NA	NA	
	09/13/07	NA	**0.12**	0.06	NA	NA	NA	NA	
	12/11/07	NA	**0.21/0.20**	0.076/0.071	NA	NA	NA	NA	
	03/13/08	NA	**0.11/0.11**	0.069/0.069	NA	NA	NA	NA	
	05/20/08	NA	**0.140**	0.034	NA	NA	NA	NA	
	09/15/08	NA	**0.140**	0.063	NA	NA	NA	NA	
	07/23/13[2]	NA	0.025	NA	NA	NA	NA	NA	
WCP-27	01/14/05	NA	0.058	0.049	NA	NA	NA	NA	
	03/29/05	NA	**0.15**	0.085	NA	NA	NA	NA	
	06/09/05	NA	**0.51**	0.49	NA	NA	NA	NA	
	09/28/05	NA	**0.50**	0.38	NA	NA	NA	NA	
	12/13/05	NA	NA	NA	NA	NA	NA	NA	
	03/23/06	NA	**0.46**	0.50	NA	NA	NA	NA	
	06/12/06	NA	**0.33**	0.39	NA	NA	NA	NA	
	09/20/06	NA	**0.52**	0.50	NA	NA	NA	NA	
	12/14/06	NA	**0.51**	0.48	NA	NA	NA	NA	
	03/14/07	NA	**0.66**	0.61	NA	NA	NA	NA	
	05/21/07	NA	**0.54**	0.48	NA	NA	NA	NA	
	09/14/07	NA	**0.39**	0.29	NA	NA	NA	NA	
	12/13/07	NA	**0.26**	0.25	NA	NA	NA	NA	
	03/13/08	NA	**0.22**	0.18	NA	NA	NA	NA	
	05/22/08	NA	**0.24**	0.16	NA	NA	NA	NA	
	09/12/08	NA	**0.2**	0.17	NA	NA	NA	NA	
	07/25/13[2]	NA	**1.1**	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-34S	03/14/07	NA	**0.69**	0.022	NA	NA	NA	NA	
	05/16/07	NA	0.048	0.010	NA	NA	NA	NA	
	09/10/07	NA	0.066	0.015	NA	NA	NA	NA	
	12/05/07	NA	0.040	0.052	NA	NA	NA	NA	
	03/07/08	NA	**0.210**	0.018	NA	NA	NA	NA	
	05/16/08	NA	**0.110**	<0.010	NA	NA	NA	NA	
	09/10/08	NA	**1.900**	<0.010	NA	NA	NA	NA	
WCP-59	5/4/01[1]	<0.0029	0.0173	NA	0.0048 U	0.003 J	0.0062	Selenium	0.0037 U
	6/4/01[1]	<0.0016	0.0177	NA	0.0035 U	0.0050 U	0.0064 U	Selenium Antimony	0.0018 J 0.0063 U
	7/6/01[1]	0.0036 U	0.0137	NA	0.00064 U	0.0019 J	0.0067 U	Selenium	0.0065 U
	10/4/01[1]	<0.0029	0.0158 J	NA	0.0019 J	0.0047	0.0221 U	None	
	1/9/02[1]	*Dis:* 0.0062 J *Ttl:* <0.0029	*Dis:* 0.0102 *Ttl:* 0.0161	NA	*Dis:* 0.0013 U *Ttl:* 0.0021 U	*Dis:* 0.0022 J *Ttl:* 0.0046 U	*Dis:* 0.0042 *Ttl:* 0.0074	Selenium	*Dis*: 0.0057 *Ttl*: <0.0021
	4/10/02[1]	*Dis:* <0.0037 *Ttl:* 0.011	*Dis:* 0.0092 *Ttl:* 0.064	NA	*Dis:* <0.0010 *Ttl:* 0.015	*Dis:* 0.0042 J *Ttl:* 0.038	*Dis:* 0.0029 *Ttl:* 0.0045	Lead Selenium	*Dis:* <0.0018 *Ttl:* <0.0052 *Dis*: 0.0024 J *Ttl*: 0.0036
	9/19/02[1]	<0.0037	0.0088	NA	<0.0010	<0.0017	<0.0029	None	
	12/12/02[1]	<0.0037	0.0091	0.052	0.0011 J	0.0022 J	0.0034 J	None	
	3/12/03[1]	NA	0.018	0.034 J	NA	NA	NA	NA	
	6/3/03[1]	NA	0.012	0.024 J	NA	NA	NA	NA	
	04/01/04	NA	0.045	<0.020	NA	NA	NA	NA	
	06/24/04	NA	0.054	<0.020	NA	NA	NA	NA	
	09/17/04	NA	0.025	<0.020	NA	NA	NA	NA	
	01/13/05	NA	0.062	<0.020	NA	NA	NA	NA	
	03/29/05	NA	**0.26**	<0.020	NA	NA	NA	NA	
	06/07/05	NA	0.057	<0.010	NA	NA	NA	NA	
	09/27/05	NA	0.056	<0.010	NA	NA	NA	NA	
	12/13/05	NA	0.078	<0.010	NA	NA	NA	NA	
	03/27/06	NA	0.016	<0.010	NA	NA	NA	NA	
	06/05/06	NA	0.027	<0.010	NA	NA	NA	NA	
	09/30/06	NA	0.016	<0.010	NA	NA	NA	NA	
	12/12/06	NA	0.039	<0.010	NA	NA	NA	NA	
	03/07/07	NA	0.011	<0.010	NA	NA	NA	NA	
	05/16/07	NA	<0.010	<0.010	NA	NA	NA	NA	
	09/10/07	NA	0.031	<0.010	NA	NA	NA	NA	
	12/06/07	NA	0.023	0.029	NA	NA	NA	NA	
	03/11/08	NA	0.02	<0.010	NA	NA	NA	NA	
	05/19/08	NA	<0.010	<0.010	NA	NA	NA	NA	
	09/09/08	NA	0.015	<0.010	NA	NA	NA	NA	
	08/01/13[2]	NA	<0.01	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-60	01/13/05	NA	0.041	<0.020	NA	NA	NA	NA	
	03/29/05	NA	0.058	<0.020	NA	NA	NA	NA	
	06/07/05	NA	0.027	0.023	NA	NA	NA	NA	
	09/26/05	NA	0.030	0.027	NA	NA	NA	NA	
	12/08/05	NA	0.015	0.019	NA	NA	NA	NA	
	03/21/06	NA	0.026	0.023	NA	NA	NA	NA	
	06/08/06	NA	0.025	0.022	NA	NA	NA	NA	
	09/19/06	NA	0.033	<0.010	NA	NA	NA	NA	
	12/13/06	NA	0.023	0.016	NA	NA	NA	NA	
	03/12/07	NA	0.020	0.020	NA	NA	NA	NA	
	05/21/07	NA	0.047	0.016	NA	NA	NA	NA	
	09/11/07	NA	0.059	<0.010	NA	NA	NA	NA	
	12/11/07	NA	0.031	0.021	NA	NA	NA	NA	
	03/12/08	NA	0.034/0.019	<0.010/<0.010	NA	NA	NA	NA	
	05/20/08	NA	0.015	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.029	<0.010	NA	NA	NA	NA	
	08/01/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-61	5/4/01[1]	<0.0029	0.0107	NA	0.0028 U	0.0028 J	0.0043 J	Selenium	0.0039 U
	6/4/01[1]	0.0024 J	0.009	NA	0.0025 U	0.0016 J	0.0095 U	Selenium	0.0015 J
	7/6/01[1]	0.0054	0.0098	NA	0.00088 U	0.0027 J	0.00215 U	Selenium	0.0034
	10/4/01[1]	<0.0029	0.0124	NA	0.0016 U	0.0068	0.0399 U	None	
	1/9/02[1]	*Dis:* <0.0058 *Ttl:* 0.0043 J	*Dis:* 0.0077 J *Ttl:* 0.0097	NA	*Dis:* 0.0026 U *Ttl:* 0.0018 U	*Dis:* 0.0022 J *Ttl:* 0.0016 U	*Dis:* 0.0103 *Ttl:* 0.0349	Selenium	*Dis*: 0.0043 J *Ttl*: <0.0021
	4/10/02[1]	*Dis:* 0.0043 J *Ttl:* 0.0041 J	*Dis:* 0.0088 *Ttl:* 0.010	NA	*Dis:* <0.0010 *Ttl:* <0.0010	*Dis:* 0.0024 J *Ttl:* 0.003 J	*Dis:* <0.0029 *Ttl:* 0.010	Selenium	*Dis*: <0.0021 *Ttl*: 0.0024 J
	9/19/02[1]	0.0044 J	0.0085	NA	<0.0010	<0.0017	0.0029 J	Selenium	0.0038
	12/12/02[1]	0.0038 J	0.008	<0.025	<0.0010	0.0018 J	0.016	None	
	3/12/03[1]	NA	0.026	0.028 J	NA	NA	NA	NA	
	6/3/03[1]	NA	0.013	<0.015	NA	NA	NA	NA	
	03/23/04	NA	0.012	<0.020	NA	NA	NA	NA	
	06/23/04 [1]	NA	0.039	<0.020	NA	NA	NA	NA	
	09/16/04	NA	0.058	<0.020	NA	NA	NA	NA	
	01/03/05	NA	0.046	<0.020	NA	NA	NA	NA	
	03/28/05	NA	0.051	<0.020	NA	NA	NA	NA	
	06/07/05	NA	0.016	<0.010	NA	NA	NA	NA	
	09/26/05	NA	0.016	0.013	NA	NA	NA	NA	
	12/08/05	NA	0.054	0.016	NA	NA	NA	NA	
	03/21/06	NA	0.017	<0.010	NA	NA	NA	NA	
	06/05/06	NA	0.016	<0.010	NA	NA	NA	NA	
	09/19/06	NA	**0.13**	<0.010	NA	NA	NA	NA	
	12/11/06	NA	0.059	<0.010	NA	NA	NA	NA	
	03/08/07	NA	0.030	<0.010	NA	NA	NA	NA	
	05/15/07	NA	**0.10**	<0.010	NA	NA	NA	NA	
	09/07/07	NA	0.053	<0.010	NA	NA	NA	NA	
	12/03/07	NA	0.052	0.011	NA	NA	NA	NA	
	03/07/08	NA	0.029	0.016	NA	NA	NA	NA	
	05/15/08	NA	**0.27**	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.044	<0.010	NA	NA	NA	NA	
	07/23/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
		Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
WCP-62	5/4/01[1]	<0.0029	0.0069	NA	0.0017 U	0.0018 J	0.0162	Selenium	0.0039
	6/4/01[1]	0.0035 J	0.0061	NA	0.0013 U	<0.001	0.020 U	None	
	7/6/01[1]	0.0044 U	0.0064	NA	<0.00061	<0.001	0.0075 U	Antimony Selenium	0.0071 U 0.0035
	10/4/01[1]	<0.0029	0.0105	NA	0.001.8 U	<0.0047	0.0158 U	None	
	1/9/02[1]	*Dis:* 0.0065 J *Ttl:* 0.0061	*Dis:* 0.0064 J *Ttl:* 0.0099	NA	*Dis:* 0.002.2 U *Ttl:* 0.0025 U	*Dis:* 0.0022 J *Ttl:* 0.0032 J	*Dis:* <0.0042 *Ttl:* 0.0298	Selenium	*Dis*: <0.0042 *Ttl*: 0.0025
	4/10/02[1]	*Dis:* 0.004 J *Ttl:* 0.0041 J	*Dis:* 0.0076 *Ttl:* 0.0093	NA	*Dis:* <0.001 *Ttl:* <0.001	*Dis:* 0.0019 J *Ttl:* 0.0021 J	*Dis:* <0.0029 *Ttl:* 0.0042 J	Selenium	*Dis*: <0.0021 *Ttl*: 0.0024 J
	9/19/02[1]	0.0051	0.0083	NA	<0.001	0.0017 J	<0.0029	Selenium	0.0033
	12/12/02[1]	0.0047 J	0.007	<0.0025	0.001 J	<0.0017	<0.0029	None	
	3/12/03[1]	NA	0.016	0.015 J	NA	NA	NA	NA	
	6/3/03[1]	NA	0.011	<0.015	NA	NA	NA	NA	
	03/23/04	NA	0.014	<0.020	NA	NA	NA	NA	
	06/24/04	NA	0.056	<0.020	NA	NA	NA	NA	
	09/17/04	NA	0.048	<0.020	NA	NA	NA	NA	
	01/13/05	NA	0.09	<0.020	NA	NA	NA	NA	
	03/28/05	NA	0.096	<0.020	NA	NA	NA	NA	
	06/07/05	NA	**0.14**	<0.010	NA	NA	NA	NA	
	09/26/05	NA	0.024	<0.010	NA	NA	NA	NA	
	12/08/05	NA	0.029	<0.010	NA	NA	NA	NA	
	03/21/06	NA	0.018	<0.010	NA	NA	NA	NA	
	06/07/06	NA	**0.45**	<0.010	NA	NA	NA	NA	
	09/19/06	NA	0.036	<0.010	NA	NA	NA	NA	
	12/11/06	NA	0.038	<0.010	NA	NA	NA	NA	
	03/12/07	NA	0.018/0.018	0.013 / 0.014	NA	NA	NA	NA	
	05/16/07	NA	0.061 / 0.057	<0.010 / <0.010	NA	NA	NA	NA	
	09/11/07	NA	0.034	<0.010	NA	NA	NA	NA	
	12/05/07	NA	0.043/0.043	<0.010 / <0.010	NA	NA	NA	NA	
	03/11/08	NA	0.055	<0.010	NA	NA	NA	NA	
	05/15/08	NA	0.032/0.042	<0.010/<0.010	NA	NA	NA	NA	
	09/09/08	NA	0.099/**0.11**	0.015/0.012	NA	NA	NA	NA	
	07/22/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-63M	01/12/05	NA	0.020	<0.020	NA	NA	NA	NA	
	03/31/05	NA	0.013	<0.020	NA	NA	NA	NA	
	06/13/05	NA	<0.010	<0.010	NA	NA	NA	NA	
	09/29/05	NA	0.018	<0.010	NA	NA	NA	NA	
	12/19/05	NA	0.033	0.021	NA	NA	NA	NA	
	03/23/06	NA	0.015	0.014	NA	NA	NA	NA	
	06/08/06	NA	0.015	0.012	NA	NA	NA	NA	
	09/22/06	NA	0.014	0.021	NA	NA	NA	NA	
	12/18/06	NA	0.016	0.013	NA	NA	NA	NA	
	03/19/07	NA	**1.8**	<0.010	NA	NA	NA	NA	
	05/24/07	NA	0.015	0.016	NA	NA	NA	NA	
	09/18/07	NA	**1.8**	<0.010	NA	NA	NA	NA	
	12/14/07	NA	0.017	0.013	NA	NA	NA	NA	
	03/17/08	NA	0.017	0.012	NA	NA	NA	NA	
	05/23/08	NA	0.015	0.011	NA	NA	NA	NA	
	09/04/08	NA	0.026	<0.010	NA	NA	NA	NA	
	07/30/13[2]	NA	0.019	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-64	5/4/01[1]	0.0029	**0.446**	NA	0.0024 L	0.0047 L	0.0102	Selenium	0.004
	6/4/01[1]	0.0025 J/0.0028 J	**0.457/0.435**	NA	0.0022 U/0.0016 U	0.0027 U/0.0023 U	0.048 U/0.064 U	Selenium Antimony	0.0016 J/<0.0013 0.0056 U/0.0075 U
	7/6/01[1]	<0.0029	**0.504**	NA	<0.00061	0.0021 J	0.0082 U	Selenium	0.0027
	10/4/01[1]	<0.0029/<0.0029	**0.474 J/0.480**	NA	0.0015 U/0.0018 U	<0.0047/<0.0047	0.0178/0.0163	None	
	1/9/02[1]	*Dis:* 0.0063 J/0.007 J *Ttl:* 0.0042 J/0.0044 J	***Dis:* 0.467/0.465** ***Ttl:* 0.424/0.435**	NA	*Dis:* 0.0013 U/0.0013 U *Ttl:* 0.001 U/0.0013 U	*Dis:* <0.0020/0.0022 J *Ttl:* 0.0036 U/0.0025 U	*Dis:* 0.0042/<0.0042 *Ttl:* 0.0105/0.093	Selenium	*Dis*: <0.0042/<0.0042 *Ttl*: 0.003/0.0023 J
	4/10/02[1]	*Dis:* 0.0041 J *Ttl:* 0.0039 J	***Dis:* 0.480** ***Ttl:* 0.500**	0.460	*Dis:* 0.001 J *Ttl:* 0.0018 J	*Dis:* 0.019 J *Ttl:* 0.047 J	*Dis:* 0.0084 J *Ttl:* 0.022 J	Selenium	*Dis*: <0.0021 *Ttl*: 0.0034
	9/19/02[1]	0.0043 J/0.005 J	**0.610/0.590**	NS	<0.0010/<0.0010	<0.0017/<0.0017	<0.0029/<0.0029	Selenium	0.0028/0.0023 J
	12/12/02[1]	<0.0074	**0.64**	0.750	<0.002	0.0041 J	<0.0058	None	
	3/12/03[1]	NA	**0.65**	0.640	NA	NA	NA	NA	
	6/3/03[1]	NA	**0.75**	0.720	NA	NA	NA	NA	
	03/24/04	NA	**0.48**	0.480	NA	NA	NA	NA	
	06/24/04	NA	**0.50**	0.380	NA	NA	NA	NA	
	09/17/04	NA	**0.47**	0.44	NA	NA	NA	NA	
	01/13/05	NA	**0.48**	0.30	NA	NA	NA	NA	
	03/29/05	NA	**0.36**	0.40	NA	NA	NA	NA	
	06/09/05	NA	**0.32**	0.45	NA	NA	NA	NA	
	09/26/05	NA	**0.40**	0.39	NA	NA	NA	NA	
	12/13/05	NA	**0.41**	0.37	NA	NA	NA	NA	
	03/24/06	NA	**0.42**	0.39	NA	NA	NA	NA	
	06/09/06	NA	**0.41**	0.38	NA	NA	NA	NA	
	09/20/06	NA	**0.35**	0.40	NA	NA	NA	NA	
	12/14/06	NA	**0.36**	0.35	NA	NA	NA	NA	
	03/14/07	NA	**0.35**	0.33	NA	NA	NA	NA	
	05/21/07	NA	**0.35**	0.38	NA	NA	NA	NA	
	09/14/07	NA	**0.63**	0.29	NA	NA	NA	NA	
	12/14/07	NA	**0.62**	0.51	NA	NA	NA	NA	
	03/14/08	NA	**0.32**	0.22	NA	NA	NA	NA	
	05/23/08	NA	**0.32**	0.22	NA	NA	NA	NA	
	09/15/08	NA	**1.20**	0.16	NA	NA	NA	NA	
	07/22/13[2]	NA	**0.12**	NA	NA	NA	NA	NA	
WCP-68S	03/14/07	NS	NS	NS	NS	NS	NS	NS	
	05/16/07	NS	NS	NS	NS	NS	NS	NS	
	09/20/07	NA	0.018	0.011	NA	NA	NA	NA	
	12/06/07	NA	0.047	0.047	NA	NA	NA	NA	
	03/11/08	NA	0.026	<0.010	NA	NA	NA	NA	
	05/16/08	NA	0.044	<0.010	NA	NA	NA	NA	
	09/10/08	NA	0.037	<0.010	NA	NA	NA	NA	
	07/23/13[2]	NA	0.012	NA	NA	NA	NA	NA	
WCP-69S	03/14/07	NA	0.029	0.012	NA	NA	NA	NA	
	05/16/07	NA	0.010	<0.010	NA	NA	NA	NA	
	09/10/07	NA	0.017	<0.010	NA	NA	NA	NA	
	12/05/07	NA	0.02	0.041	NA	NA	NA	NA	
	03/07/08	NA	0.02	0.013	NA	NA	NA	NA	
	05/16/08	NA	0.016	<0.010	NA	NA	NA	NA	
	09/10/08	NA	0.021	<0.010	NA	NA	NA	NA	
	07/24/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-205	01/14/05	NA	0.064	0.030	NA	NA	NA	NA	
	03/30/05	NA	0.083	0.027	NA	NA	NA	NA	
	06/09/05	NA	0.099	0.031	NA	NA	NA	NA	
	09/27/05	NA	0.065	0.037	NA	NA	NA	NA	
	12/12/05	NA	**0.11**	0.030	NA	NA	NA	NA	
	03/22/06	NA	0.045	0.044	NA	NA	NA	NA	
	06/05/06	NA	0.044	0.041	NA	NA	NA	NA	
	09/18/06	NA	0.044	0.038	NA	NA	NA	NA	
	12/12/06	NA	0.045	0.038	NA	NA	NA	NA	
	03/07/05	NA	0.042	0.046	NA	NA	NA	NA	
	05/17/07	NA	0.049	0.045	NA	NA	NA	NA	
	09/07/07	NA	0.058	0.043	NA	NA	NA	NA	
	12/04/07	NA	0.043	0.041	NA	NA	NA	NA	
	03/06/08	NA	0.046	0.038	NA	NA	NA	NA	
	05/14/08	NA	0.048	0.038	NA	NA	NA	NA	
	09/11/08	NA	0.056	0.028	NA	NA	NA	NA	
	09/20/13[2]	NA	0.022	NA	NA	NA	NA	NA	
WCP-206	01/14/05	NA	**0.23**	0.21	NA	NA	NA	NA	
	03/30/05	NA	**0.19**	0.23	NA	NA	NA	NA	
	06/09/05	NA	**0.18**	0.16	NA	NA	NA	NA	
	09/27/05	NA	**0.19**	0.19	NA	NA	NA	NA	
	12/13/05	NA	**0.19**	0.11	NA	NA	NA	NA	
	03/22/06	NA	**0.18**	0.15	NA	NA	NA	NA	
	06/08/06	NA	**0.16**	0.17	NA	NA	NA	NA	
	09/21/06	NA	**0.16**	0.15	NA	NA	NA	NA	
	12/13/06	NA	**0.15**	0.17	NA	NA	NA	NA	
	03/13/07	NA	**0.15**	0.15	NA	NA	NA	NA	
	05/21/07	NA	**0.14**	0.14	NA	NA	NA	NA	
	09/12/07	NA	**0.16**	0.14	NA	NA	NA	NA	
	12/11/07	NA	**0.15**	0.12	NA	NA	NA	NA	
	03/12/08	NA	**0.14**	0.13	NA	NA	NA	NA	
	05/19/08	NA	**0.14**	0.13	NA	NA	NA	NA	
	09/10/08	NA	**0.14**	0.11	NA	NA	NA	NA	
	07/31/13[2]	NA	0.091	NA	NA	NA	NA	NA	
WCP-207	01/14/05	NA	0.034	<0.020	NA	NA	NA	NA	
	03/30/05	NA	0.027	<0.020	NA	NA	NA	NA	
	06/08/05	NA	0.012	<0.010	NA	NA	NA	NA	
	09/27/05	NA	0.017	0.017	NA	NA	NA	NA	
	12/08/05	NA	0.013	<0.010	NA	NA	NA	NA	
	03/21/06	NA	0.020	<0.010	NA	NA	NA	NA	
	06/09/06	NA	0.012	<0.010	NA	NA	NA	NA	
	09/21/06	NA	0.026	0.015	NA	NA	NA	NA	
	12/13/06	NA	0.038	<0.010	NA	NA	NA	NA	
	03/14/07	NA	0.062	0.041	NA	NA	NA	NA	
	05/22/07	NA	0.058	0.049	NA	NA	NA	NA	
	09/17/07	NA	0.063	0.062	NA	NA	NA	NA	
	12/11/07	NA	0.072	0.046	NA	NA	NA	NA	
	03/14/08	NA	0.07	0.061	NA	NA	NA	NA	
	05/21/08	NA	0.074	0.058	NA	NA	NA	NA	
	09/11/08	NA	0.074	0.047	NA	NA	NA	NA	
	07/19/13[2]	NA	0.082/0.080	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-208S	04/07/05	NA	0.025	<0.010	NA	NA	NA	NA	
	06/09/05	NA	0.023	0.016	NA	NA	NA	NA	
	09/29/05	NA	0.043	<0.010	NA	NA	NA	NA	
	12/12/05	NA	0.035	<0.010	NA	NA	NA	NA	
	03/22/06	NA	0.025	<0.010	NA	NA	NA	NA	
	06/05/06	NA	0.024	<0.010	NA	NA	NA	NA	
	09/18/06	NA	0.021	0.01	NA	NA	NA	NA	
	12/12/06	NA	0.021/0.021	<0.010 / 0.020	NA	NA	NA	NA	
	03/07/07	NA	0.022/0.023	0.012 / <0.010	NA	NA	NA	NA	
	05/17/07	NA	0.030 / 0.025	<0.010 / <0.013	NA	NA	NA	NA	
	09/07/07	NA	0.04	0.021	NA	NA	NA	NA	
	12/04/07	NA	0.035/0.027	0.029/0.013	NA	NA	NA	NA	
	03/07/08	NA	0.043	0.016	NA	NA	NA	NA	
	05/14/08	NA	0.03/0.034	0.013 / 0.014	NA	NA	NA	NA	
	09/11/08	NA	0.027/0.025	<0.010/<0.010	NA	NA	NA	NA	
	07/30/13[2]	NA	0.012	NA	NA	NA	NA	NA	
WCP-208M	04/07/05	NA	0.055	<0.010	NA	NA	NA	NA	
	06/13/05	NA	<0.010	<0.010	NA	NA	NA	NA	
	09/29/05	NA	0.071	0.013	NA	NA	NA	NA	
	12/19/05	NA	0.038	<0.010	NA	NA	NA	NA	
	03/23/06	NA	0.017	0.013	NA	NA	NA	NA	
	06/08/06	NA	0.019	0.019	NA	NA	NA	NA	
	09/22/06	NA	0.046	0.018	NA	NA	NA	NA	
	12/18/06	NA	**0.45**	0.014	NA	NA	NA	NA	
	03/19/07	NA	**3.1**	0.012	NA	NA	NA	NA	
	05/17/07	NA	**0.17**	0.010	NA	NA	NA	NA	
	09/18/07	NA	**0.048**	<0.010	NA	NA	NA	NA	
	12/14/07	NA	0.038	0.026	NA	NA	NA	NA	
	03/17/08	NA	0.039	0.012	NA	NA	NA	NA	
	05/23/08	NA	**1.0**	<0.010	NA	NA	NA	NA	
	09/04/08	NA	**0.14**	<0.010	NA	NA	NA	NA	
	07/30/13[2]	NA	**0.43**	NA	NA	NA	NA	NA	
WCP-209	04/08/05	NA	**0.17**	0.015	NA	NA	NA	NA	
	06/08/05	NA	0.022	<0.010	NA	NA	NA	NA	
	09/29/05	NA	0.055	0.010	NA	NA	NA	NA	
	12/13/05	NA	0.028	<0.010	NA	NA	NA	NA	
	03/22/06	NA	0.016	<0.010	NA	NA	NA	NA	
	06/12/06	NA	0.013/0.012	<0.010 / <0.010	NA	NA	NA	NA	
	09/19/06	NA	0.024	<0.010	NA	NA	NA	NA	
	12/11/06	NA	0.016/0.017	<0.010 / <0.010	NA	NA	NA	NA	
	03/14/07	NA	0.018/0.018	0.012/0.012	NA	NA	NA	NA	
	05/16/07	NA	0.017 / 0.017	<0.010 / <0.010	NA	NA	NA	NA	
	09/11/07	NA	0.048	<0.010	NA	NA	NA	NA	
	12/10/07	NA	0.021	0.025	NA	NA	NA	NA	
	03/10/08	NA	0.03	<0.010	NA	NA	NA	NA	
	05/19/08	NA	0.013/0.014	0.01 / 0.010	NA	NA	NA	NA	
	09/11/08	NA	0.029/0.021	0.011/<0.010	NA	NA	NA	NA	
	08/01/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-210	04/08/05	NA	**0.32**	0.27	NA	NA	NA	NA	
	06/09/05	NA	**0.32**	0.29	NA	NA	NA	NA	
	09/29/05	NA	**0.33**	0.30	NA	NA	NA	NA	
	12/13/05	NA	**0.26**	0.21	NA	NA	NA	NA	
	03/24/06	NA	**0.22**	0.22	NA	NA	NA	NA	
	06/09/06	NA	**0.21**	0.21	NA	NA	NA	NA	
	09/20/06	NA	**0.18**	0.16	NA	NA	NA	NA	
	12/14/06	NA	**0.20**	0.20	NA	NA	NA	NA	
	03/14/07	NA	**0.18**	0.17	NA	NA	NA	NA	
	05/22/07	NA	**0.19**	0.16	NA	NA	NA	NA	
	09/14/07	NA	**0.21/0.20**	0.16/0.17	NA	NA	NA	NA	
	12/13/07	NA	**0.15**	0.15	NA	NA	NA	NA	
	03/13/08	NA	**0.17/0.16**	0.15/0.15	NA	NA	NA	NA	
	05/22/08	NA	**0.18**	0.14	NA	NA	NA	NA	
	09/12/08	NA	**0.16**	0.15	NA	NA	NA	NA	
	7/18/2013[2]	NA	0.069	NA	NA	NA	NA	NA	
WCP-211	04/08/05	NA	0.019	0.020	NA	NA	NA	NA	
	06/08/05	NA	0.019	0.020	NA	NA	NA	NA	
	09/27/05	NA	0.019	<0.010	NA	NA	NA	NA	
	12/12/05	NA	0.032	<0.010	NA	NA	NA	NA	
	03/22/06	NA	0.023	0.014	NA	NA	NA	NA	
	06/05/06	NA	0.019	<0.010	NA	NA	NA	NA	
	09/18/06	NA	0.03	<0.010	NA	NA	NA	NA	
	12/12/06	NA	0.023	0.012	NA	NA	NA	NA	
	03/07/07	NA	0.020	<0.010	NA	NA	NA	NA	
	05/17/07	NA	0.021	<0.010	NA	NA	NA	NA	
	09/07/07	NA	0.02	0.013	NA	NA	NA	NA	
	12/04/07	NA	0.026	0.025	NA	NA	NA	NA	
	03/06/08	NA	0.029	0.021	NA	NA	NA	NA	
	05/14/08	NA	0.028	0.019	NA	NA	NA	NA	
	09/11/08	NA	0.023	0.01	NA	NA	NA	NA	
	08/02/13[2]	NA	0.017	NA	NA	NA	NA	NA	
WCP-212	06/07/06	NA	0.021	0.014	NA	NA	NA	NA	
	09/19/06	NA	0.033	<0.010	NA	NA	NA	NA	
	12/12/06	NA	0.030	0.012	NA	NA	NA	NA	
	03/14/07	NA	0.031	0.016	NA	NA	NA	NA	
	05/21/07	NA	0.086	<0.010	NA	NA	NA	NA	
	09/12/07	NA	0.096	<0.010	NA	NA	NA	NA	
	12/10/07	NA	0.046	0.013	NA	NA	NA	NA	
	03/11/08	NA	0.065/0.059	0.015/0.015	NA	NA	NA	NA	
	05/19/08	NA	0.040	0.016	NA	NA	NA	NA	
	09/09/08	NA	0.069	0.012	NA	NA	NA	NA	
	07/31/13[2]	NA	0.015	NA	NA	NA	NA	NA	
WCP-213	06/30/06	NA	NA	NA	NA	NA	NA	NA	
	09/18/06	NA	0.034	0.01	NA	NA	NA	NA	
	12/12/06	NA	0.049	0.018	NA	NA	NA	NA	
	03/07/07	NA	0.033	<0.010	NA	NA	NA	NA	
	05/17/07	NA	0.043	0.031	NA	NA	NA	NA	
	09/14/07	NA	0.04	0.029	NA	NA	NA	NA	
	12/04/07	NA	0.088	0.016	NA	NA	NA	NA	
	03/12/08	NA	**0.19**	<0.010	NA	NA	NA	NA	
	05/14/08	NA	0.063	0.016	NA	NA	NA	NA	
	09/11/08	NA	0.046	<0.010	NA	NA	NA	NA	
	07/26/13[2]	NA	0.017	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-214	03/23/06	NA	**0.54**	0.59	NA	NA	NA	NA	
	06/08/06	NA	**0.57**	0.53	NA	NA	NA	NA	
	09/20/06	NA	**0.27**	0.16	NA	NA	NA	NA	
	12/14/06	NA	**0.45**	0.30	NA	NA	NA	NA	
	03/14/07	NA	**0.49**	0.37	NA	NA	NA	NA	
	05/22/07	NA	**0.39**	0.28	NA	NA	NA	NA	
	09/14/07	NA	**0.3/0.32**	0.29/0.29	NA	NA	NA	NA	
	12/13/07	NA	0.037/0.049	0.019/0.021	NA	NA	NA	NA	
	03/13/08	NA	**0.25**	0.27	NA	NA	NA	NA	
	05/22/08	NS	NS	NS	NS	NS	NS	NS	
	09/15/08	NA	**0.27**	0.23	NA	NA	NA	NA	
	07/29/13[2]	NA	**0.13/0.14**	NA	NA	NA	NA	NA	
WCP-215	03/23/06	NA	0.041	0.013	NA	NA	NA	NA	
	06/07/06	NA	0.051	0.013	NA	NA	NA	NA	
	09/19/06	NA	0.053	0.019	NA	NA	NA	NA	
	12/13/06	NA	0.043	0.021	NA	NA	NA	NA	
	03/13/07	NA	0.065	0.032	NA	NA	NA	NA	
	05/21/07	NA	0.043	0.014	NA	NA	NA	NA	
	09/12/07	NA	**0.11**	0.012	NA	NA	NA	NA	
	12/10/07	NA	0.069	0.018	NA	NA	NA	NA	
	03/12/08	NA	0.064	0.014	NA	NA	NA	NA	
	05/20/08	NA	0.058	0.028	NA	NA	NA	NA	
	09/12/08	NA	**0.230**	0.016	NA	NA	NA	NA	
	07/25/13[2]	NA	0.018	NA	NA	NA	NA	NA	
WCP-216	03/23/06	NA	0.056	0.055	NA	NA	NA	NA	
	06/07/06	NA	0.045	0.033	NA	NA	NA	NA	
	09/19/06	NA	0.042	0.042	NA	NA	NA	NA	
	12/11/06	NA	0.037	0.042	NA	NA	NA	NA	
	03/13/07	NA	0.044	0.027	NA	NA	NA	NA	
	05/16/07	NA	0.036	0.025	NA	NA	NA	NA	
	09/11/07	NA	0.088	0.022	NA	NA	NA	NA	
	12/06/07	NA	**0.15**	0.023	NA	NA	NA	NA	
	03/10/08	NA	**0.14**	0.010	NA	NA	NA	NA	
	05/15/08	NA	0.081	0.015	NA	NA	NA	NA	
	09/08/08	NA	0.058	0.02	NA	NA	NA	NA	
	07/25/13[2]	NA	0.019	NA	NA	NA	NA	NA	
WCP-217	04/04/06	NA	**0.14**	<0.010	NA	NA	NA	NA	
	06/13/06	NA	0.022	0.011	NA	NA	NA	NA	
	09/18/06	NA	0.053	<0.010	NA	NA	NA	NA	
	12/11/06	NA	0.041	<0.010	NA	NA	NA	NA	
	03/07/07	NA	0.014	<0.010	NA	NA	NA	NA	
	05/17/07	NA	0.045	<0.010	NA	NA	NA	NA	
	09/04/07	NA	0.039	0.010	NA	NA	NA	NA	
	12/04/07	NA	0.044	0.011	NA	NA	NA	NA	
	03/05/08	NA	0.033	<0.010	NA	NA	NA	NA	
	05/13/08	NA	0.049	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.063	<0.010	NA	NA	NA	NA	
	07/26/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-218	06/30/06	NA	NA	NA	NA	NA	NA	NA	
	09/18/06	NA	0.065	0.044	NA	NA	NA	NA	
	12/12/06	NA	0.063	0.038	NA	NA	NA	NA	
	03/07/07	NA	0.059	0.015	NA	NA	NA	NA	
	05/17/07	NA	0.010	0.026	NA	NA	NA	NA	
	09/07/07	NA	**0.11**	0.056	NA	NA	NA	NA	
	12/04/07	NA	0.097	0.024	NA	NA	NA	NA	
	03/06/08	NA	**0.10**	0.035	NA	NA	NA	NA	
	05/19/08	NA	**0.12**	0.036	NA	NA	NA	NA	
	09/10/08	NA	0.077	0.042	NA	NA	NA	NA	
	07/26/13[2]	NA	0.032	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-219	06/07/06	NA	0.019	0.018	NA	NA	NA	NA	
	09/19/06	NA	0.021	0.023	NA	NA	NA	NA	
	12/11/06	NA	0.020	0.023	NA	NA	NA	NA	
	03/12/07	NA	0.039	0.019	NA	NA	NA	NA	
	05/16/07	NA	0.075	<0.010	NA	NA	NA	NA	
	09/10/07	NA	0.024	0.023	NA	NA	NA	NA	
	12/05/07	NA	0.023	0.029	NA	NA	NA	NA	
	03/11/08	NA	0.048	0.016	NA	NA	NA	NA	
	05/15/08	NA	0.047	0.015	NA	NA	NA	NA	
	09/11/08	NA	0.074	0.012	NA	NA	NA	NA	
WCP-225	12/18/06	NA	0.027	0.017	NA	NA	NA	NA	
	03/15/07	NA	0.037	<0.010	NA	NA	NA	NA	
	05/21/07	NA	0.042	<0.010	NA	NA	NA	NA	
	09/13/07	NA	0.03	0.032	NA	NA	NA	NA	
	12/12/07	NA	0.057	0.014	NA	NA	NA	NA	
	03/12/08	NA	0.026	<0.010	NA	NA	NA	NA	
	05/16/08	NA	0.048	<0.010	NA	NA	NA	NA	
	09/12/08	NA	0.035	0.011	NA	NA	NA	NA	
	07/29/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-226	12/18/06	NA	<0.010	<0.010	NA	NA	NA	NA	
	03/14/07	NA	0.018	<0.010	NA	NA	NA	NA	
	05/22/07	NA	0.013	<0.010	NA	NA	NA	NA	
	09/07/07	NA	0.051	<0.010	NA	NA	NA	NA	
	12/06/07	NA	0.019	0.016	NA	NA	NA	NA	
	03/06/08	NA	0.014	<0.010	NA	NA	NA	NA	
	05/14/08	NA	0.023	<0.010	NA	NA	NA	NA	
	09/10/08	NA	0.016	<0.010	NA	NA	NA	NA	
	07/19/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-227	11/14/06	NA	**0.48**	0.48	NA	NA	NA	NA	
	12/13/06	NA	**0.46**	0.43	NA	NA	NA	NA	
	03/15/07	NA	**0.51**	0.43	NA	NA	NA	NA	
	05/21/07	NA	**0.47**	0.42	NA	NA	NA	NA	
	09/17/07	NA	**0.45**	0.45	NA	NA	NA	NA	
	12/13/07	NA	**0.45**	0.46	NA	NA	NA	NA	
	03/13/08	NA	**0.43**	0.47	NA	NA	NA	NA	
	05/22/08	NA	**0.49**	0.44	NA	NA	NA	NA	
	09/12/08	NA	**0.44**	0.43	NA	NA	NA	NA	
WCP-228	05/15/07	NA	0.02	<0.010	NA	NA	NA	NA	
	09/04/07	NA	0.018	0.021	NA	NA	NA	NA	
	12/03/07	NA	0.012	0.022	NA	NA	NA	NA	
	03/07/08	NA	0.02	0.02	NA	NA	NA	NA	
	05/13/08	NA	0.015	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.069	<0.010	NA	NA	NA	NA	
	07/18/13[2]	NA	0.012	NA	NA	NA	NA	NA	
WCP-229	05/15/07	NA	0.034	0.011	NA	NA	NA	NA	
	09/04/07	NA	0.055	0.012	NA	NA	NA	NA	
	12/03/07	NA	0.043	<0.010	NA	NA	NA	NA	
	03/07/08	NA	0.041	0.015	NA	NA	NA	NA	
	05/13/08	NA	0.027	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.073	<0.010	NA	NA	NA	NA	
	07/23/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
WCP-230	05/15/07	NA	<0.010	<0.010	NA	NA	NA	NA	
	09/12/07	NA	**0.14**	0.018	NA	NA	NA	NA	
	12/10/07	NA	**0.16**	0.013	NA	NA	NA	NA	
	03/11/08	NA	**0.16**	<0.010	NA	NA	NA	NA	
	05/16/08	NA	0.045	<0.010	NA	NA	NA	NA	
	09/12/08	NA	0.079	0.012	NA	NA	NA	NA	
	07/22/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-231	05/22/07	NA	0.017	0.014	NA	NA	NA	NA	
	09/10/07	NA	0.03	0.012	NA	NA	NA	NA	
	12/06/07	NA	0.099	0.017	NA	NA	NA	NA	
	03/10/08	NA	0.05	<0.010	NA	NA	NA	NA	
	05/16/08	NA	0.072	<0.010	NA	NA	NA	NA	
	09/09/08	NA	0.055	<0.010	NA	NA	NA	NA	
	07/29/13[2]	NA	<0.010	NA	NA	NA	NA	NA	
WCP-232	05/15/07	NA	0.023	0.013	NA	NA	NA	NA	
	09/04/07	NA	0.032	0.012	NA	NA	NA	NA	
	12/03/07	NA	**0.15**	0.028	NA	NA	NA	NA	
	03/05/08	NA	0.053	<0.010	NA	NA	NA	NA	
	05/13/08	NA	0.088	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.065	0.014	NA	NA	NA	NA	
	07/19/13[2]	NA	0.013	NA	NA	NA	NA	NA	
WCP-233	05/15/07	NA	0.019	<0.010	NA	NA	NA	NA	
	09/04/07	NA	0.02	0.024	NA	NA	NA	NA	
	12/03/07	NA	0.015	0.013	NA	NA	NA	NA	
	03/05/08	NA	0.029	<0.010	NA	NA	NA	NA	
	05/13/08	NA	0.017	<0.010	NA	NA	NA	NA	
	09/08/08	NA	0.043	<0.010	NA	NA	NA	NA	
	07/19/13[2]	NA	0.014	NA	NA	NA	NA	NA	
WCP-234	09/12/07	NA	0.019	0.042	NA	NA	NA	NA	
	12/11/07	NA	0.020	0.014	NA	NA	NA	NA	
	03/12/08	NA	0.039	<0.010	NA	NA	NA	NA	
	05/16/08	NA	0.022	<0.010	NA	NA	NA	NA	
	09/09/08	NA	0.029	<0.010	NA	NA	NA	NA	
	08/02/13[2]	NA	<0.010/<0.010	NA	NA	NA	NA	NA	
WCP-235	09/10/08	NA	0.066	0.01	NA	NA	NA	NA	
DJM-6	5/4/01[1]	0.0058 U	0.0096	NA	0.0044 U	0.003 U	0.0078	Beryllium Selenium	0.00038 U 0.003 U
	6/4/01[1]	0.0052	0.0395	NA	0.0087 U	0.00283	0.021 U	Antimony	0.0064 U
	7/6/01[1]	0.0057 U	0.0162	NA	0.0011 U	0.0046 J	0.0218 U	None	
	10/4/01[1]	0.0049 J	0.0077 U	NA	0.0018 J	0.0196 U	0.0196	None	
	1/9/02[1]	*Dis:* 0.0073 J *Ttl:* 0.0069	*Dis:* 0.0077 J *Ttl* :0.0105	NA	*Dis:* 0.0017 U *Ttl:* 0.001 U	*Dis:* <0.0020 *Ttl:* 0.0024 U	*Dis:* 0.0042 *Ttl:* 0.0051	None	
	4/10/02[1]	*Dis:* 0.0058 *Ttl:* 0.0068	*Dis:* 0.0066 *Ttl:* 0.013	NA	*Dis:* <0.001 *Ttl:* <0.001	*Dis:* 0.0024 J *Ttl:* 0.0046 J	*Dis:* 0.0052 J *Ttl:* 0.0068	None	
	9/19/02[1]	0.0067	0.009	NA	<0.0010	<0.0017	0.0036 J	None	
	12/12/02[1]	<0.0074	0.010	<0.025	<0.002	<0.0034	0.0058	None	
	3/12/03[1]	NA	0.025	0.021 J	NA	NA	NA	NA	
	6/3/03[1]	NA	**0.110**	<0.015	NA	NA	NA	NA	
	03/23/04	NA	0.020	<0.020	NA	NA	NA	NA	
DJM-9	06/08/06	NA	0.012	<0.010	NA	NA	NA	NA	
	09/21/06	NA	0.016	<0.010	NA	NA	NA	NA	
	12/11/06	NA	0.012	<0.010	NA	NA	NA	NA	
	03/12/07	NA	0.025	0.017	NA	NA	NA	NA	
	05/16/07	NA	0.013	0.012	NA	NA	NA	NA	
	09/11/07	NA	**0.12**	<0.010	NA	NA	NA	NA	
	12/10/07	NA	0.026	0.012	NA	NA	NA	NA	
	03/10/08	NA	0.037	<0.010	NA	NA	NA	NA	
	05/15/08	NA	0.024	<0.010	NA	NA	NA	NA	
	09/09/08	NA	0.059	0.014	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
DJM-13	08/01/13[2]	NA	0.012	NA	NA	NA	NA	NA	
DEC-1	5/4/01[1]	NA	NA	NA	NA	NA	NA	NA	
	6/4/01[1]	NA	NA	NA	NA	NA	NA	NA	
	7/6/01[1]	NA	NA	NA	NA	NA	NA	NA	
	10/4/01[1]	NA	NA	NA	NA	NA	NA	NA	
	1/9/02[1]	NA	NA	NA	NA	NA	NA	NA	
	4/10/02[1]	NA	NA	NA	NA	NA	NA	NA	
	9/19/02[1]	<0.0037	**0.26**	NA	0.0016 J	0.0057	0.0045 J	Selenium	0.0035
	12/12/02[1]	NA	NA	NA	NA	NA	NA	NA	
	3/12/03[1]	NA	**1.1**	0.410	NA	NA	NA	NA	
	6/3/03[1]	NA	**1.9**	0.580	NA	NA	NA	NA	
TRIAD-10	03/31/05	NA	0.060	0.052	NA	NA	NA	NA	
	12/15/06	NA	0.047	0.034	NA	NA	NA	NA	
	07/24/13[2]	NA	0.016	NA	NA	NA	NA	NA	
TRIAD-11	03/31/05	NA	0.065	0.027	NA	NA	NA	NA	
	06/09/05	NA	0.056	0.028	NA	NA	NA	NA	
	07/24/13[2]	NA	0.017	NA	NA	NA	NA	NA	
TRIAD-12	03/31/05	NA	0.090	0.088	NA	NA	NA	NA	
	09/28/05	NA	0.072	0.058	NA	NA	NA	NA	
	12/13/05	NA	0.090	0.073	NA	NA	NA	NA	
	03/22/06	NA	**0.11**	0.033	NA	NA	NA	NA	
	06/09/06	NA	0.059	0.051	NA	NA	NA	NA	
	09/21/06	NA	0.059	0.037	NA	NA	NA	NA	
	12/15/06	NA	0.059	0.049	NA	NA	NA	NA	
	03/15/07	NA	0.072	0.063	NA	NA	NA	NA	
	05/22/07	NA	0.028	<0.010	NA	NA	NA	NA	
	09/17/07	NA	0.048	0.023	NA	NA	NA	NA	
	12/12/07	NA	0.024	<0.010	NA	NA	NA	NA	
	03/14/08	NA	0.034	0.012	NA	NA	NA	NA	
	05/22/08	NA	0.036	0.028	NA	NA	NA	NA	
	09/16/08	NA	0.030	<0.010	NA	NA	NA	NA	
	07/24/13[2]	NA	0.018/0.019	NA	NA	NA	NA	NA	
TRIAD-13	03/22/06	NA	0.058	0.039	NA	NA	NA	NA	
	06/09/06	NA	0.088	0.041	NA	NA	NA	NA	
	09/21/06	NA	0.038	0.042	NA	NA	NA	NA	
	12/14/06	NA	0.035	0.033	NA	NA	NA	NA	
	03/15/07	NA	0.041	0.028	NA	NA	NA	NA	
	05/22/07	NA	0.057	0.028	NA	NA	NA	NA	
	09/17/07	NA	**0.57**	0.033	NA	NA	NA	NA	
	12/12/07	NA	0.036	0.039	NA	NA	NA	NA	
	03/14/08	NA	**0.47**	0.027	NA	NA	NA	NA	
	05/21/08	NA	0.049	0.029	NA	NA	NA	NA	
	09/16/08	NA	0.040/0.036	0.029/0.029	NA	NA	NA	NA	
	07/24/13[2]	NA	0.019	NA	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

TABLE 18
Groundwater Analytical Results for Metals
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Target Analytes by EPA Method 200.7 and Hexavalent Chromium by EPA Method 7196A (mg/L)							
		Arsenic	Total Chromium	Cr VI	Copper	Nickel	Zinc	Other Detected Metals	
TRIAD-14	09/30/06	NA	0.08	0.078	NA	NA	NA	NA	
	12/15/06	NA	0.079	0.061	NA	NA	NA	NA	
	03/15/07	NA	**0.23**	0.020	NA	NA	NA	NA	
	05/22/07	NA	**0.14**	0.052	NA	NA	NA	NA	
	09/17/07	NA	0.08	0.058	NA	NA	NA	NA	
	12/12/07	NA	**0.15**	0.065	NA	NA	NA	NA	
	03/14/08	NA	0.083	0.057	NA	NA	NA	NA	
	05/21/08	NA	**0.110**	0.055	NA	NA	NA	NA	
	09/16/08	NA	0.090	0.047	NA	NA	NA	NA	
	08/02/13[2]	NA	0.044	NA	NA	NA	NA	NA	
TRIAD-15	09/22/06	NA	0.046	0.039	NA	NA	NA	NA	
	12/15/06	NA	0.033	0.025	NA	NA	NA	NA	
	03/15/07	NA	0.046	0.013	NA	NA	NA	NA	
	05/22/07	NA	**1.8**	0.029	NA	NA	NA	NA	
	09/17/07	NA	0.026	0.024	NA	NA	NA	NA	
	12/12/07	NA	0.034	0.038	NA	NA	NA	NA	
	03/14/08	NA	0.05	0.024	NA	NA	NA	NA	
	05/21/08	NA	0.041	0.022	NA	NA	NA	NA	
	09/16/08	NA	**0.110**	0.015	NA	NA	NA	NA	
	07/31/13[2]	NA	0.013	NA	NA	NA	NA	NA	
MTP-1	09/29/05	NA	0.021	<0.010	NA	NA	NA	NA	
	12/14/05	NA	0.021	<0.010	NA	NA	NA	NA	
	03/24/06	NA	0.018	<0.010	NA	NA	NA	NA	
	06/07/06	NA	0.014	<0.010	NA	NA	NA	NA	
	09/20/06	NA	0.014	<0.010	NA	NA	NA	NA	
	12/18/06	NA	0.016	0.010	NA	NA	NA	NA	
	03/15/07	NA	0.015	0.013	NA	NA	NA	NA	
	05/23/07	NA	0.014	0.014	NA	NA	NA	NA	
	09/18/07	NA	NA	NA	NA	NA	NA	NA	
	12/13/07	NA	0.018	0.017	NA	NA	NA	NA	
	03/18/08	NA	0.015	0.02	NA	NA	NA	NA	
	05/23/08	NA	0.015	0.013	NA	NA	NA	NA	
	09/04/08	NA	0.012	0.012	NA	NA	NA	NA	
ADEQ AWQS		**0.05**	**0.1**	**0.1**	**NE**	**0.1**	**NE**		

Notes:

mg/L = milligrams per Liter
Cr VI = hexavalent chromium
< = less than detection limit
J = estimated value
U = Analyte was analyzed for but not detected above the numerical quantitation limit. (Quantitation limit was raised during validation process.)
NS = not sampled
NA = not analyzed
NE = not established
ADEQ AWQS = Arizona Department of Environmental Quality Aquifer Water Quality Standard
Bold results indicated value greater than or equal to the ADEQ AWQS.
Results are presented as total metals unless otherwise stated. (Dis = Dissolved metals, Ttl = Total metals.)
Data From Locus, 2005 unless otherwise stated.
[1] = Data source: Weston Solutions, 2003
[2] = Data from summer 2013 HGC sampling event
Regulatory Source: Aquifer Water Quality Standard 2009

TABLE 19
Groundwater Analytical Results for Chromium - 2013 to 2016
ADEQ West Central Phoenix North Canal Plume WQARF Site

Analyte	Date Sampled	Total Chromium	Hexavalent Chromium
WCP-13M	7/30/2013	**0.30**	-
	2/27/2014	**0.071**	**-**
	2/2/2015	**0.164**	**0.00870**
	11/19/2015	**0.567**	**0.00800**
	11/7/2016	**0.066**	**0.015**
WCP-25	7/26/2013	**0.012**	-
	2/28/2014	**0.022**	-
	1/30/2015	**0.0253**	<0.00500
	11/13/2015	**0.0205**	**0.0242**
WCP-26	7/23/2013	**0.025**	-
	3/3/2014	**0.033**	-
	2/3/2015	**0.0497**	**0.0703**
	11/17/2015	**0.0493**	**0.0610**
	11/1/2016	**0.065**	**0.063**
WCP-27	7/25/2013	**1.1**	-
	2/19/2014	**0.73**	-
	1/28/2015	**0.289**	**0.297**
	11/16/2015	**0.242**	**0.245**
	11/16/2015	**0.238**	**0.245**
WCP-59	8/1/2013	<0.010	-
	3/4/2014	<0.010	-
	2/6/2015	<0.0100	<0.00500
	11/20/2015	<0.0100	**0.00880**
WCP-60	8/1/2013	<0.010	-
	2/25/2014	<0.010	-
	2/4/2015	<0.0100	<0.00500
	11/20/2015	<0.0100	<0.00500
WCP-61	7/23/2013	<0.010	-
	2/19/2014	**0.012**	-
	2/11/2015	**0.0143**	**0.0128**
	11/20/2015	**0.0196**	**0.0119**
WCP-62	7/22/2013	<0.010	-
	2/18/2014	<0.010	-
	2/4/2015	**0.0103**	**0.00880**
	11/18/2015	**0.0100**	**0.00620**
WCP-63M	7/30/2013	**0.019**	**-**
	2/27/2014	**0.23**	-
	2/10/2015	**3.99**	<0.00500
	11/19/2015	**0.323**	<0.00500
	11/1/2016	**0.041**	**0.013**

TABLE 19
Groundwater Analytical Results for Chromium - 2013 to 2016
ADEQ West Central Phoenix North Canal Plume WQARF Site

Analyte	Date Sampled	Total Chromium	Hexavalent Chromium
WCP-64	7/22/2013	**0.12**	-
	2/27/2014	**0.14**	-
	2/11/2015	**0.135**	**0.130**
	11/23/2015	**0.195**	**0.146**
WCP-68s	7/23/2013	**0.012**	-
	2/17/2014	**0.013**	-
	1/26/2015	<0.0100	**0.0102**
	11/11/2015	**0.0190**	**0.0160**
WCP-69s	7/24/2013	<0.010	-
	2/17/2014	<0.010	-
	2/3/2015	**0.0157**	**0.00850**
	11/10/2015	**0.0107**	<0.00500
WCP-205	9/20/2013	**0.022**	-
	2/26/2014	**0.032**	-
	1/27/2015	**0.0308**	**0.0261**
	11/18/2015	**0.0306**	**0.0282**
	11/18/2015[a]	**0.0273**	**0.0274**
WCP-206	7/31/2013	**0.091**	-
	2/19/2014	**0.088**	-
	1/27/2015	**0.0910**	**0.0820**
	11/11/2015	**0.0935**	**0.0784**
	11/7/2016	**0.086**	**0.080**
WCP-207	7/19/2013	**0.082**	-
	7/19/2013[a]	**0.080**	-
	2/18/2014	**0.084**	-
	2/12/2015	**0.0893**	**0.0857**
	2/12/2015 [a]	**0.0911**	**0.0824**
	11/23/2015	**0.0815**	**0.0822**
	11/23/2015 [a]	**0.0822**	**0.0802**
WCP-208M	7/30/2013	**0.43**	-
	2/27/2014	**0.075**	-
	2/27/2014[a]	**0.24**	-
	2/2/2015	**0.208**	<0.00500
	11/19/2015	**0.612**	**0.0214**
	12/15/2016	**0.14**	**0.01**
WCP-208S	7/30/2013	**0.012**	-
	2/27/2014	**0.018**	-
	2/2/2015	**0.0169**	**0.0166**
	2/2/2015 [a]	**0.0166**	<0.00500
	11/19/2015	**0.0167**	**0.0145**
	11/19/2015 [a]	**0.0133**	**0.0156**
	11/7/2016	**0.019**	**0.016**

TABLE 19
Groundwater Analytical Results for Chromium - 2013 to 2016
ADEQ West Central Phoenix North Canal Plume WQARF Site

Analyte	Date Sampled	Total Chromium	Hexavalent Chromium
WCP-209	8/1/2013	<0.010	-
	2/27/2014	**0.020**	-
	2/10/2015	**0.0208**	**0.0144**
	2/10/2015 [a]	**0.0214**	**0.0134**
	11/19/2015	**0.0136**	**0.0120**
WCP-210	7/18/2013	**0.069**	-
	2/27/2014	**0.069**	-
	2/10/2015	**0.0686**	**0.0600**
	11/19/2015	**0.0973**	**0.0882**
	11/1/2016	**0.097**	**0.077**
WCP-211	8/2/2013	**0.017**	-
	2/26/2014	**0.022**	-
	2/11/2015	**0.0216**	**0.0223**
	11/18/2015	**0.0231**	**0.0252**
	11/1/2016	**0.055**	**0.069**
WCP-212	7/31/2013	**0.015**	-
	2/25/2014	**0.032**	-
	2/3/2015	**0.0273**	**0.0237**
	11/20/2015	**0.0382**	**0.0223**
WCP-213	7/26/2013	**0.017**	-
	2/26/2014	**0.033**	-
	1/27/2015	**0.0278**	**0.0227**
	1/27/2015 [a]	**0.0280**	**0.0221**
	11/11/2015	**0.0304**	**0.0253**
	11/11/2015 [a]	**0.0241**	**0.0246**
WCP-214	7/29/2013	**0.13**	-
	7/29/2013[a]	**0.14**	-
	2/25/2014	**0.16**	-
	2/5/2015	**0.278**	**0.254**
	2/5/2015 [a]	**0.279**	**0.262**
	11/19/2015	**0.0609**	**0.0561**
	11/1/2016	**0.17**	**0.14**
WCP-215	7/25/2013	**0.018**	-
	2/21/2014	**0.020**	-
	2/3/2015	**0.0216**	**0.0344**
	11/17/2015	**0.0171**	**0.0229**
WCP-216	7/25/2013	**0.019**	-
	2/21/2014	**0.022**	-
	2/3/2015	**0.0210**	<0.00500
	11/17/2015	**0.0110**	**0.0215**

TABLE 19
Groundwater Analytical Results for Chromium - 2013 to 2016
ADEQ West Central Phoenix North Canal Plume WQARF Site

Analyte	Date Sampled	Total Chromium	Hexavalent Chromium
WCP-217	7/26/2013	<0.010	-
	2/28/2014	**0.015**	-
	1/27/2015	<0.0100	<0.00500
	11/17/2015	<0.0100	**0.0129**
	11/1/2016	**0.025**	<0.0050
WCP-218	7/26/2013	**0.032**	-
	2/25/2014	**0.044**	-
	2/11/2015	**0.0393**	**0.0387**
	11/11/2015	**0.0431**	**0.0369**
WCP-219	2/26/2014	**0.011**	-
	2/4/2015	**0.0212**	**0.00900**
	11/18/2015	**0.0103**	**0.00810**
WCP-225	7/29/2013	<0.010	-
	3/4/2014	**0.016**	-
	2/5/2015	**0.0106**	**0.0110**
	11/17/2015	<0.0100	**0.0102**
WCP-226	7/19/2013	<0.010	-
	2/18/2014	<0.010	-
	2/12/2015	<0.0100	**0.00700**
	11/10/2015	<0.0100	<0.00500
WCP-228	7/18/2013	**0.012**	-
	3/3/2014	**0.016**	-
	2/11/2015	**0.0129**	**0.0118**
	11/23/2015	**0.0150**	**0.00910**
WCP-229	7/23/2013	<0.010	-
	2/25/2014	**0.012**	-
	2/10/2015	**0.0198**	**0.0102**
	11/20/2015	**0.0153**	**0.0127**
WCP-230	7/22/2013	<0.010	-
	3/3/2014	**0.013**	-
	3/3/2014[a]	**0.013**	-
	2/5/2015	**0.0136**	**0.0116**
	11/23/2015	**0.0110**	**0.00810**
WCP-230M	2/5/2016	**0.0113**	**0.0145**
WCP-231	7/29/2013	<0.010	-
	3/4/2014	**0.022**	-
	1/28/2015	**0.0178**	**0.0147**
	11/18/2015	**0.0179**	**0.0118**
WCP-232	7/19/2013	**0.013**	-
	2/18/2014	**0.022**	-
	2/5/2015	**0.0164**	**0.0179**
	11/11/2015	**0.0385**	**0.0184**

TABLE 19
Groundwater Analytical Results for Chromium - 2013 to 2016
ADEQ West Central Phoenix North Canal Plume WQARF Site

Analyte	Date Sampled	Total Chromium	Hexavalent Chromium
WCP-233	7/19/2013	**0.014**	-
	2/18/2014	**0.016**	-
	1/30/2015	**0.0186**	**0.0383**
	11/11/2015	**0.0201**	**0.0152**
WCP-234	8/2/2013	<0.010	-
	8/2/2013[a]	<0.010	-
	3/3/2014	<0.010	-
	2/4/2015	<0.0100	**0.00700**
	11/16/2015	<0.0100	<0.00500
WCP-241	11/23/2015	<0.0100	<0.00500
DJM-13	8/1/2013	**0.012**	-
	2/19/2014	**0.018**	-
	2/19/2014[a]	**0.017**	-
	11/16/2015	<0.0100	**0.0117**
	11/1/2016	**0.0095**	**0.0092**
Triad-10	7/24/2013	**0.016**	-
	2/20/2014	**0.022**	-
	1/29/2015	**0.0179**	**0.0193**
	11/12/2015	**0.0160**	**0.0158**
Triad-11	7/24/2013	**0.017**	-
	2/20/2014	**0.027**	-
	2/20/2014[a]	**0.025**	-
	1/29/2015	**0.0258**	**0.0295**
	11/12/2015	**0.0350**	**0.0354**
Triad-12	7/24/2013	**0.018**	-
	7/24/2013[a]	**0.019**	-
	2/20/2014	**0.031**	-
	1/29/2015	**0.0241**	**0.0264**
	11/12/2015	<0.0100	**0.00630**
Triad-13	7/24/2013	**0.019**	-
	2/20/2014	**0.028**	-
	1/29/2015	**0.0235**	**0.0229**
	11/12/2015	**0.0244**	**0.0171**
Triad-14	8/2/2013	**0.044**	-
	3/4/2014	**0.053**	-
	1/29/2015	**0.0531**	**0.0520**
	11/13/2015	**0.0418**	**0.0426**
Triad-15	7/31/2013	**0.013**	-
	3/4/2014	**0.018**	-
	1/29/2015	**0.0186**	**0.0242**
	11/12/2015	**0.0140**	**0.0144**

Notes: ***[a] Duplicate sample.***
AWQS: Aquifer Water Quality Standard
Analyzed by EPA Method 200.7 and SM3500D. Reported in milligrams per liter (mg/L)
Bold values exceed the reporting limit. The total chromium AWQS is 0.10 mg/L

TABLE 20
Locus Technologies Natural Attenuation Parameter Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	Groundwater Elevation (ft amsl)	DO (mg/L)	ORP (mV)	Target Analytes													
					Carbon Dioxide (µg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	TOC (mg/L)	Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Total Iron (mg/L)	Total Manganese (mg/L)	Chloride (mg/L)	Alkalinity as $CaCO_3$ (mg/L)
CENTRAL PLUME																		
Upgradient																		
WCP-61	01/13/05	981.39	-	-	14,900	<0.30	<0.35	<0.55	2.0	<0.20	**14**	<0.020	150	<0.5	0.51	0.015	320	250
	12/08/05	983.11	5.51	442	15,000[1]	<0.50	<0.50	<1.5	<1.0	<0.20	**16**	<0.020	140	<0.5	5.5	0.15	280	250
	03/21/06	983.18	3.48	397	16,000	<0.50	<0.50	<1.5	<1.0	<0.20	**15**	<0.020	160	<0.5	1.1	0.034	380	250
	09/19/06	982.78	4.98	279	17,000	0.34	<0.50	<1.5	<10	1.3	**18**	<0.020	130	<0.5	30	0.87	310	270
Middle Plume																		
WCP-25	01/14/05	983.61	-	-	18,300	0.94	<0.35	<0.55	5.0	<0.20	**12**	<0.020	13	<0.5	2.7	0.066	25	300
	12/13/05	980.84	4.14	469	19,000[1]	0.39	<0.50	<1.5	1.8	<0.20	**12**	<0.020	150	<0.5	1.3	0.027	250	300
	03/24/06	981.12	3.64	412	17,000	0.56	<0.50	<1.5	<1.0	<0.20	**12**	<0.020	150	<0.5	1.1	0.025	260	290
	09/20/06	980.71	3.89	395	18,000	0.54	<0.50	<1.5	<1.0	<0.020	**11**	<0.020	140	<0.5	0.35	<0.010	250	290
WCP-26	01/13/05	979.83	-	-	18,500	0.72	<0.35	<0.55	2.1	<0.20	**10**	<0.020	150	<0.5	2.3	0.061	300	290
	12/14/05	979.39	4.62	426	16,000[1]	0.72	<0.50	<1.5	1.9	<0.20	**13**	<0.020	140	<0.5	0.31	<0.010	280	290
	03/24/06	979.73	4.26	318	16,000	<0.50	<0.50	<1.5	<1.0	<0.20	**13**	<0.020	150	<0.5	1.9	0.047	300	290
	09/20/06	979.42	5.25	384	18,000	0.67	<0.50	<1.5	<1.0	<0.20	**12**	<0.020	150	<0.5	0.42	0.012	290	280
WCP-27	03/23/06	976.08	1.48	299	21,000	20.0	<0.50	4.0	3.6	<0.20	**8.7**	<0.020	150	<0.5	0.42	0.019	290	400
	09/20/06	975.58	0.08	160	20,000	21.00	<0.50	0.18	3.4	<0.20	**9**	<0.020	130	<0.5	0.19	0.011	250	380
WCP-64	01/14/05	974.10	-	-	13,900	0.57	<0.35	<0.55	5.1	<0.20	**12**	<0.020	150	<0.5	8.3	0.18	290	320
	12/13/05	974.72	3.26	471	15,000[1]	0.30	<0.50	<1.5	<1.0	<0.20	**12**	<0.020	150	<0.5	0.14	<0.010	290	330
	03/24/06	975.34	2.67	297	15,000	<0.50	<0.50	<1.5	NA	NA	NA	NA	NA	NA	13	0.26	NA	NA
	09/20/06	974.71	3.19	334	17,000	0.41	<0.50	<1.5	<1.0	<0.20	**12**	<0.020	140	<0.5	0.59	0.013	290	320
Downgradient																		
WCP-207	01/14/05	964.63	-	-	6,030	<0.30	<0.35	<0.55	1.2	<0.20	1.5	<0.020	72	<0.5	0.67	0.033	140	240
	12/08/05	966.12	4.18	395	8,200[1]	<0.50	<0.50	<1.5	<1.0	<0.20	1.4	<0.020	82	<0.5	<0.1	<0.010	150	250
	03/21/06	967.55	3.82	317	8,000	<0.50	<0.50	<1.5	1.2	<0.20	1.2	<0.020	86	<0.5	<0.1	<0.010	150	250
	09/21/06	966.34	5.56	328	9,300	1.80	<0.50	<1.5	1.2	<0.20	1.7	<0.020	75	<0.5	0.43	0.014	140	240
EAST PLUME																		
WCP-205	12/12/05	970.69	9.42	508	24,000[1]	<0.50	<0.50	<1.5	<1.0	<0.20	**12**	<0.020	220	<0.5	1.5	0.040	330	250
	03/22/06	972.00	5.21	481	21,000	<0.50	<0.50	<1.5	<1.0	<0.20	**13**	<0.020	230	<0.5	<0.10	<0.010	340	250
	06/05/06	971.98	-	-	19,000	<0.50	<0.50	<1.5	1.9	<0.20	**16**	<0.020	230	<0.5	0.11	<0.010	340	230
	09/18/06	971.12	7.11	355	20,000	0.31	<0.50	<1.5	2.1	<0.20	**13**	<0.020	230	<0.5	<0.10	<0.010	350	260
WCP-208S	12/12/05	979.20	5.78	391	29,000[1]	1.3	<0.50	<1.5	1.8	<0.20	**11**	<0.020	190	<0.5	0.19	0.061	330	290
	03/22/06	980.15	4.46	325	27,000	3.6	<0.50	<1.5	1.5	<0.20	**13**	<0.020	200	<0.5	0.54	0.037	360	300
	06/05/06	980.20	-	-	26,000	0.81	<0.50	<1.5	<1.0	<0.20	**13**	<0.020	180	<0.5	0.38	0.032	320	290
	09/18/06	979.84	6.06	232	27,000	4.90	<0.50	<1.5	1.5	<0.20	**14**	<0.020	200	<0.5	<0.10	0.019	360	310
WCP-211	12/12/05	973.20	3.37	352	18,000[1]	2.4	<0.50	<1.5	1.9	<0.20	4.1	0.052	160	<0.5	0.21	0.035	200	280
	03/22/06	974.67	3.02	381	19,000	1.9	<0.50	<1.5	<1.0	<0.20	4.8	<0.020	160	<0.5	<0.10	<0.010	200	270
	06/05/06	974.62	-	-	20,000	1.30	<0.50	<1.5	2.7	<0.20	5.6	<0.020	160	<0.5	NA	NA	190	270
	09/18/06	974.06	3.86	256	19,000	9.40	<0.50	<1.5	1.9	<0.20	5.1	<0.020	150	<0.5	0.53	0.039	190	290
ADEQ Aquifer Water Quality Standard					**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**10**	**1**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Notes:

VOCs = Volatile organic compounds
TOC = Total Organic Carbon
ft amsl = feet above mean sea level
cis-1,2-DCE = cis-1,2-dichloroethene
ADEQ = Arizona Department of Environmental Quality
DO = dissolved oxygen
ORP = oxidation reduction potential
[1] = Sample for CO_2 analysis was collected on January 31, 2006
Bold results indicate value greater than or equal to the ADEQ Aquifer Water Quality Standard.

µg/L = micrograms per liter
mg/L = milligrams per liter
mV = millivolts
NE = None established
NA = Not Analyzed
- = DO and ORP parameters not measured during this sampling event
Metals and dissolved metals analyzed by EPA Method 200.7, anions by EPA Method 300.0, alkalinity by Method SM2320B, nitrogen by EPA Method 353.2, nitrate by Method SM4500-NO2B and hydrocarbon gases by Method RSK 175.
Regulatory Source: Aquifer Water Quality Standard 2009.

TABLE 21
2015 Natural Attenuation Parameter Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	ORP (mV)	DO (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ferrous Iron (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	DOC (mg/L)	Alkalinity as $CaCO_3$ (mg/L)
WEST PLUME AREA															
WCP-60	02/04/15	196.0	1.04	2.23				96.4					177		226
	11/20/15	217.5	5.62	2.34	<0.0200	0.0	-	89.9	0.019	-	-	-	-	<1.00	212
WCP-68S	01/26/15	197.0	2.30	**21.6**				165					291		144
	11/11/15	271.4	2.80	**20.9**	<0.0200	0.15	-	159	0.080	-	-	-	-	<1.00	150
WCP-69S	02/03/15	218.5	0.71	**15.8**				133					277		149
	11/10/15	260.3	1.16	**11.9**	-	0.10	-	107	0.054	-	-	-	-	**2.62**	125
WCP-209	02/10/15	191.9	0.78	**10.4**				121					269		309
	11/19/15	148.0	4.52	**12.5**	<0.0200	0.0	-	121	0.031	-	-	-	291	<1.00	228
WCP-212	02/03/15	200.7	1.08	**15.4**				153					336		239
	11/20/15	219.0	4.62	**15.8**	<0.0200	-	-	151	-	-	-	-	-	<1.00	220
WCP-215	02/03/15	180.4	1.81	**10.4**				135					253		282
	11/17/15	256.8	4.57	**11.4**	<0.0200	0.0	-	121	0.077	-	-	-	265	<1.00	232
WCP-216	02/03/15	169.5	2.40	7.32				98.9					233		217
	11/17/15	247.5	4.47	9.44	<0.0200	0.0	-	93.9	0.024	-	-	-	262	<1.00	184
WCP-219	02/04/15	205.3	2.41	7.32				84.1					206		242
	11/18/15	239.4	4.77	**10.3**	<0.0200	0.10	-	95.2	0.041	-	-	-	-	<1.00	216
WCP-225	02/05/15	182.2	0.79	**15.9**				157					339		196
	11/17/15	259.4	4.30	**16.5**	-	0.0	-	151	0.041	-	-	-	-	<1.00	152
WCP-228	02/11/15	193.3	0.83	**19.6**				180					236		206
	11/23/15	284.1	5.10	**19.5**	<0.0200	0.0	-	184	0.013	-	-	-	-	<1.00	174
WCP-229	02/10/15	132.9	1.40	**16.6**				146					140		233
	11/20/15	213.9	5.03	**19.5**	<0.0200	0.0	-	143	0.067	-	-	-	-	<1.00	520
WCP-230	02/05/15	172.9	0.91	**17.1**				170					346		186
	11/23/15	278.2	4.22	**18.1**	<0.0200	0.0	-	164	0.033	-	-	-	-	<1.00	168
WCP-230M	02/05/16	117.1	3.54	9.99	<0.0200	-	<0.200	88.9	-	<2.00	<2.00	<2.00	255	<1.00	152
WCP-234	02/04/15	192.3	1.44	5.73				86.9					222		204
	11/16/15	261.3	4.91	5.46	<0.0200	0.0		70.6	0.017	-	-	-	232	<1.00	192
WCP-241	11/23/15	276.7	2.77	7.33	0.0875	0.0	-	77.3	0.047	-	-	-	-	**1.02**	188
ADEQ Aquifer Water Quality Standard				**10**	**1**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

TABLE 21
2015 Natural Attenuation Parameter Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	ORP (mV)	DO (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ferrous Iron (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	DOC (mg/L)	Alkalinity as $CaCO_3$ (mg/L)
CENTRAL PLUME AREA															
WCP-13M	02/02/15	155.5	1.12	**11.0**				98.3					297		163
	11/19/15	215.3	1.15	**12.3**	0.0845	0.0	<0.200	93.1	0.042	<2.00	<2.00	<2.00	317	<1.00	150
WCP-25	01/30/15	200.4	1.82	6.33				155					201		349
	11/13/15	228.5	0.79	5.82	<0.0200	0.04	<0.200	118	0.130	16.9	<2.00	<2.00	168	<1.00	290
WCP-26	02/03/15	173.4	0.96	**10.6**				186					259		326
	11/17/15	255.3	2.77	**13.1**	<0.0200	0.0	<0.200	169	0.039	<2.00	<2.00	<2.00	281	<1.00	242
WCP-27	01/28/15	195.5	4.43	8.61				114					132		392
	11/16/15	259.9	3.25	8.18	<0.0200	0.02	<0.200	94.1	0.031	<2.00	<2.00	<2.00	106	<1.00	344
WCP-59	02/06/15	167.6	3.86	2.09				151					209		333
	11/20/15	220.3	1.96	1.79	<0.0200	0.0	-	133	0.014	<2.00	<2.00	<2.00	-	<1.00	270
WCP-61	02/11/15	198.2	0.92	**15.5**				150					318		232
	11/20/15	223.2	4.81	**17.5**	<0.0200	0.0	-	146	0.128	<2.00	<2.00	<2.00	-	<1.00	214
WCP-62	02/04/15	202.8	0.65	9.15				75.9					264		216
	11/18/15	242.2	4.38	9.86	<0.0200	0.01	-	76.8	0.092	<2.00	<2.00	<2.00	-	<1.00	200
WCP-63M	02/10/15	176.9	1.20	9.72				103					263		181
	11/19/15	203.0	0.17	**11.2**	0.397	0.0	<0.200	101	0.033	<2.00	<2.00	<2.00	296	<1.00	172
WCP-64	02/11/15	189.5	1.26	**11.8**				157					309		325
	11/23/15	-	-	**14.3**	<0.0200	-	-	149	-	-	-	-	348	-	316
WCP-206	01/27/15	209.3	2.38	**13.0**				217					290		288
	11/11/15	262.8	4.19	**12.7**	-	0.0		201	0.021	19.8	<2.00	<2.00	-	<1.00	286
WCP-207	02/12/15	179.1	2.08	5.2				80.2					212		231
	11/23/15	233.6	2.56	5.85	<0.0200	0.0	<0.200	65.5	0.024	<2.00	<2.00	<2.00	199	**1.13**	205
WCP-210	02/10/15	184.5	3.80	**12.1**				181					370		377
	11/19/15	235.2	3.47	**14.7**	<0.0200	0.0	<0.200	166	0.064	<2.00	<2.00	<2.00	397	<1.00	264
WCP-214	02/05/15	215.3	1.91	**14.1**				168					353		297
	11/19/15	229.4	1.26	**14.8**	<0.0200	0.0	<0.200	148	0.046	<2.00	<2.00	<2.00	364	<1.00	266
WCP-231	01/28/15	192.7	4.38	**16.3**				220					487		262
	11/18/15	247.3	4.66	**15.7**	-	0.02	-	195	0.101	<2.00	<2.00	<2.00	-	<1.00	224
DJM-13	11/16/15	259.9	2.54	7.79	<0.0200	0.0	<0.200	104	0.050	<2.00	<2.00	<2.00	226	<1.00	232
TRIAD-10	01/29/15	194.1	5.08	**17.1**				211					354		301
	11/12/15	224.9	4.83	**16.6**	<0.0200	0.0	-	156	0.057	13.0	<2.00	<2.00	303	<1.00	284
TRIAD-11	01/29/15	205.2	3.33	**17.6**				218					477		398
	11/12/15	240.7	3.18	**13.4**	<0.0200	0.18	-	180	0.222	12.1	<2.00	<2.00	378	<1.00	386
TRIAD-12	01/29/15	199.3	2.18	**11.7**				187					372		394
	11/12/15	-209.5	0.17	0.112	0.242	0.07	-	134	0.241	182	<2.00	<2.00	289	**1.74**	430
TRIAD-13	01/29/15	196.3	3.57	**11.6**				187					337		411
	11/12/15	223.7	3.89	**10.1**	<0.0200	0.02	-	171	0.145	18.9	<2.00	<2.00	295	<1.00	400
TRIAD-14	01/29/15	209.3	3.52	**15.6**				210					325		212
	11/13/15	222.3	5.72	**15.4**	<0.0200	0.0	-	205	0.047	15.0	<2.00	<2.00	355	<1.00	194
TRIAD-15	01/29/15	188.6	1.18	**15.6**				195					329		266
	11/12/15	215.5	4.73	**14.9**	<0.0200	0.0	-	167	0.027	11.8	<2.00	<2.00	-	<1.00	244
ADEQ Aquifer Water Quality Standard				**10**	**1**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

TABLE 21
2015 Natural Attenuation Parameter Results
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	ORP (mV)	DO (mg/L)	Nitrate-N (mg/L)	Nitrite-N (mg/L)	Ferrous Iron (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	DOC (mg/L)	Alkalinity as $CaCO_3$ (mg/L)
EAST PLUME AREA															
WCP-205	01/27/15	171.1	4.65	**13.8**				222					343		248
	11/18/15	238.9	4.90	**15.0**	<0.0200	0.0	-	222	0.017	<2.00	<2.00	<2.00	-	<1.00	206
WCP-208S	02/02/15	55.3	2.74	**13.3**				190					323		309
	11/19/15	18.3	4.87	**14.5**	<0.0200	0.0	-	195	0.036	<2.00	<2.00	<2.00	358	<1.00	284
WCP-208M	02/02/15	-189.0	0.57	5.27				98.6					289		200
	11/19/15	-320.8	0.07	1.88	0.0330	0.48	0.488	37.8	0.943	69.9	<2.00	<2.00	315	**31.3**	234
WCP-211	02/11/15	213.4	1.13	**14.5**				211					278		325
	11/18/15	243.0	5.17	**13.8**	-	0.0	-	204	0.082	<2.00	<2.00	<2.00	-	<1.00	256
WCP-213	01/27/15	201.9	4.27	**14.0**				212					332		295
	11/11/15	253.2	5.68	**13.9**	<0.0200	0.10	-	203	0.133	116	<2.00	<2.00	-	<1.00	271
WCP-217	01/27/15	201.6	4.42	3.98				64.3					175		171
	11/17/15	265.9	4.85	4.80	<0.0200	0.0	-	57.2	0.089	<2.00	<2.00	<2.00	198	<1.00	161
WCP-218	02/11/15	202.2	3.29	**14.3**				228					311		264
	11/11/15	249.7	5.51	**14.6**	<0.0200	0.06	-	222	0.038	18.7	<2.00	<2.00	-	<1.00	250
WCP-232	02/05/15	202.3	1.80	**19.2**				168					335		264
	11/11/15	261.6	5.55	**18.3**	<0.0200	0.03	-	172	0.300	-	-	-	-	<1.00	254
WCP-233	01/30/15	197.8	4.99	2.94				93.8					20.6		429
	11/11/15	266.0	4.88	2.29	<0.0200	0.01	-	101	0.034	-	-	-	-	<1.00	416
WCP-226	02/12/15	160.5	4.09	3.66				103					177		222
	11/10/15	258.4	5.58	3.80	-	0.06	-	106	0.057	8.05	<2.00	<2.00	-	**1.29**	198
ADEQ Aquifer Water Quality Standard				**10**	**1**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Notes:

DO = dissolved oxygen
DOC = dissolved organic carbon
ORP = oxidation reduction potential
mg/L = milligrams per liter
mV = millivolts
µg/L = micrograms per liter
NE = None established
- = Parameters not measured and/or analyzed during this sampling event
ADEQ = Arizona Department of Environmental Quality

Hydrocarbon gases analyzed by Method RSK 175, alkalinity by Method SM2320B, dissolved organic carbon by Method SM5310C, metals and dissolved metals by EPA Method 200.7, anions by EPA Method 300.0, nitrogen by EPA Method 353.2 and nitrite by Method SM4500-NO2B.

Bold results indicate value greater than or equal to the ADEQ Aquifer Water Quality Standard.

Regulatory Source: Aquifer Water Quality Standard 2009.

TABLE 22
Geochemical Characterization Results, Central and East Plumes
ADEQ West Central Phoenix North Canal Plume WQARF Site

Well ID	Date Sampled	ORP (mV)	DO (mg/L)	DOC (mg/L)	Sulfide (mg/L)	Major Ions (mg/L) Cations: Sodium	Potassium	Calcium	Magnesium	Anions: Nitrate	Nitrite	Chloride	Sulfate	Alkalinity as $CaCO_3$	Minor Ions (mg/L): Iron	Manganese	Aluminum	Silica	Bromide	Fluoride
CENTRAL PLUME																				
WCP-13M	02/02/15	155.5	1.12							**11.0**		297	98.3	163						
	11/19/15	215.3	1.15	<1.00	0.042	157	2.87	55.7	44.1	**12.3**	0.0845	317	93.1	150	<0.200	<0.0200	<0.200	<1.07	<0.500	<0.500
WCP-25	01/30/15	200.4	1.82							6.33		201	155	349						
	11/13/15	228.5	0.79	<1.00	0.130	187	3.43	66.4	47.1	5.82	<0.0200	168	118	290	<0.200	<0.0200	<0.200	24.1	<0.500	-
WCP-26	02/03/15	173.4	0.96							**10.6**		259	186	326						
	11/17/15	255.3	2.77	<1.00	0.039	224	3.83	80.7	60.2	**13.1**	<0.0200	281	169	242	<0.200	<0.0200	<0.200	24.1	<0.500	<0.500
WCP-27	01/28/15	195.5	4.43							8.61		132	114	392						
	11/16/15	259.9	3.25	<1.00	0.031	199	2.35	32.7	23.8	8.18	<0.0200	106	94.1	344	<0.200	<0.0200	<0.200	23.9	<0.500	<0.500
WCP-63M	02/10/15	176.9	1.20							9.72		263	103	181						
	11/19/15	203.0	0.17	<1.00	0.033	135	3.14	62.9	50.2	**11.2**	0.397	296	101	172	<0.200	<0.0200	<0.200	<1.07	<0.500	<0.500
WCP-210	02/10/15	184.5	3.80							**12.1**		370	181	377						
	11/19/15	235.2	3.47	<1.00	0.064	238	3.16	79.0	59.7	**14.7**	<0.0200	397	166	264	<0.200	<0.0200	<0.200	<1.07	<0.500	<0.500
WCP-214	02/05/15	215.3	1.91							**14.1**		353	168	297						
	11/19/15	229.4	1.26	<1.00	0.046	233	2.78	63.0	48.1	**14.8**	<0.0200	364	148	266	<0.200	<0.0200	<0.200	<1.07	0.560	<0.500
DJM-13	11/16/15	259.9	2.54	<1.00	0.050	212	2.39	38.5	27.1	7.79	<0.0200	226	104	232	<0.200	<0.0200	<0.200	22.5	<0.500	<0.500
WCP-207	02/12/15	179.1	2.08							5.2		212	80.2	231						
	11/23/15	233.6	2.56	**1.13**	0.024	218	2.16	23.0	15.3	5.85	<0.0200	199	65.5	205	<0.200	<0.0200	<0.200	<1.07	<0.500	0.527
EAST PLUME																				
WCP-208M	02/02/15	-189.0	0.57							5.27		289	98.6	200						
	11/19/15	-320.8	0.07	**31.3**	0.000943	135	3.48	65.4	49.9	**1.88**	0.0330	315	37.8	234	0.488	0.106	<0.200	<1.07	0.512	<0.500
ADEQ Aquifer Water Quality Standard					**NE**	**NE**	**NE**	**NE**	**NE**	**10**	**1**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**4**

Notes:
***DO** = dissolved oxygen*
***DOC** = dissolved organic carbon*
***ORP** = oxidation reduction potential*
***mV** = millivolts*
***mg/L** = milligrams per liter*
***NE** = None established*
***-** = Parameters not measured and/or analyzed during this sampling event*
***ADEQ** = Arizona Department of Environmental Quality*

Metals and dissolved metals analyzed by EPA Method 200.7, anions by EPA Method 300.0, alkalinity by Method SM2320B, nitrite by Method SM4500-NO2B and dissolved organic carbon by Method SM5310C.

Bold results indicate value greater than or equal to the ADEQ Aquifer Water Quality Standard.

Regulatory Source: Aquifer Water Quality Standard 2009.

Well ID	Date Sampled	ORP (mV)	DO (mg/L)	DOC (mg/L)	Sulfide (mg/L)	Trace Elements (mg/L)																			
						Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Strontium	Thallium	Tin	Titanium	Vanadium	Zinc
CENTRAL PLUME																									
WCP-13M	02/02/15	155.5	1.12																						
	11/19/15	215.3	1.15	<1.00	0.042	**<0.0200**	<0.0200	0.0630	**<0.00400**	0.352	**<0.0100**	<0.0100	<0.0100	<0.0200	<0.0150	<0.0100	0.0331	<0.0300	<0.0300	1.92	**<0.0200**	<0.0200	<0.180	<0.0900	0.0486
WCP-25	01/30/15	200.4	1.82																						
	11/13/15	228.5	0.79	<1.00	0.130	**<0.0200**	<0.0200	0.0463	**<0.00400**	0.712	**<0.0100**	0.0154	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	2.30	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
WCP-26	02/03/15	173.4	0.96																						
	11/17/15	255.3	2.77	<1.00	0.039	**<0.0200**	<0.0200	0.0675	**<0.00400**	0.719	**<0.0100**	0.0649	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	2.93	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
WCP-27	01/28/15	195.5	4.43																						
	11/16/15	259.9	3.25	<1.00	0.031	**<0.0200**	<0.0200	0.0582	**<0.00400**	0.777	**<0.0100**	**0.263**	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	1.19	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
WCP-63M	02/10/15	176.9	1.20																						
	11/19/15	203.0	0.17	<1.00	0.033	**<0.0200**	<0.0200	0.0571	**<0.00400**	0.428	**<0.0100**	<0.0100	<0.0100	<0.0200	<0.0150	<0.0100	0.0290	<0.0300	<0.0300	1.95	**<0.0200**	<0.0200	<0.180	<0.0900	0.0397
WCP-210	02/10/15	184.5	3.80																						
	11/19/15	235.2	3.47	<1.00	0.064	**<0.0200**	<0.0200	0.0707	**<0.00400**	0.766	**<0.0100**	0.0872	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	3.06	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
WCP-214	02/05/15	215.3	1.91																						
	11/19/15	229.4	1.26	<1.00	0.046	**<0.0200**	<0.0200	0.0721	**<0.00400**	0.665	**<0.0100**	0.0763	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	2.47	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
DJM-13	11/16/15	259.9	2.54	<1.00	0.050	**<0.0200**	<0.0200	0.0694	**<0.00400**	0.579	**<0.0100**	0.0102	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	1.34	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
WCP-207	02/12/15	179.1	2.08																						
	11/23/15	233.6	2.56	**1.13**	0.024	**<0.0200**	<0.0200	0.0745	**<0.00400**	0.632	**<0.0100**	0.0810	<0.0100	<0.0200	<0.0150	<0.0100	<0.0100	<0.0300	<0.0300	0.810	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
EAST PLUME																									
WCP-208M	02/02/15	-189.0	0.57																						
	11/19/15	-320.8	0.07	**31.3**	0.000943	**<0.0200**	<0.0200	0.0786	**<0.00400**	0.397	**<0.0100**	<0.0100	<0.0100	<0.0200	<0.0150	<0.0100	0.0210	<0.0300	<0.0300	2.03	**<0.0200**	<0.0200	<0.180	<0.0900	<0.0300
ADEQ Aquifer Water Quality Standard					**NE**	**0.006**	**0.05**	**2**	**0.004**	**NE**	**0.005**	**0.1**	**NE**	**NE**	**0.05**	**NE**	**0.1**	**0.05**	**NE**	**NE**	**0.002**	**NE**	**NE**	**NE**	**NE**

Notes:

***DO** = dissolved oxygen*
***DOC** = dissolved organic carbon*
***ORP** = oxidation reduction potential*
***mV** = millivolts*
***mg/L** = milligrams per liter*
***NE** = None established*
***-** = Parameters not measured and/or analyzed during this sampling event*
***ADEQ** = Arizona Department of Environmental Quality*

Metals and dissolved metals analyzed by EPA Method 200.7, anions
Method SM2320B, nitrite by Method SM4500-NO2B and dissolved o

Bold results indicate value greater than or equal to the ADEQ Aquifer Water Quality Standard.

Regulatory Source: Aquifer Water Quality Standard 2009.

TABLE 23
Estimated Groundwater Flow Velocities
ADEQ West Central Phoenix North Canal Plume WQARF Site

Test Well	Site Location	Hydraulic Conductivity[a] (ft/d)	Pathline (ft)	Head Change (ft)	Hydraulic Gradient (ft/ft)	Average Linear Groundwater Velocity (ft/yr)
WCP-205	East Plume Area	0.98	922	18	0.020	28
WCP-208S	East Plume Area	1.66	922	18	0.020	47
WCP-213[b]	East Plume Area	1.08	922	18	0.020	31
WCP-210	Central Plume Area	1.06	1,003	12	0.012	19
TRIAD MW-14	Central Plume Area	6.61	1,003	12	0.012	115
WCP-212	West Plume Area	1.62	1,688	12	0.007	17
WCP-230	West Plume Area	0.51	1,688	12	0.007	5.3
WCP-234	West Plume Area	0.11	1,688	12	0.007	1.1

Notes:

[a] Average of KGS and Bouwer-Rice estimates for automatically logged data (except for the WCP-213 tests)
Assumes effective porosity of 0.25
ft = feet
ft/d = foot per day
ft/yr = ft per year
[b] Average of two slug tests using hand collected data rather than automatically logged data
ft/ft = foot/foot

TABLE 24
1,1,1-Trichloroethane Transformation Rate Constants
ADEQ West Central Phoenix North Canal Plume WQARF Site

A (1/yr)	E_a (kJ/mol)	Temperature (°C) 20	25	30	Reference
3.47E+20	118	3.26E-01	7.35E-01	1.61	Haag & Mill 1988
6.31E+20	119.3	3.48E-01	7.91E-01	1.75	Cline & Delfino 1989
1.56E+20	116.1	3.20E-01	7.11E-01	1.54	Jeffers *et al* . 1989
	Average	3.32E-01	7.46E-01	1.63	

Notes:

A = frequency factor (per year)

E_a = activation energy (kilojoules per mole)

°C = degrees Celsius

1/yr = per year

kJ/mol = kiloJoules per mole

TABLE 25
Potential Sensitive Receptors within One Mile of the Estimated Plume Area
ADEQ West Central Phoenix North Canal Plume WQARF Site

Name	Type	Address
Within Estimated Plume Area		
Alhambra Traditional School	Public School	3736 W. Osborn Road
Pueblo Del Sol Middle School	Public School	3348 W. McDowell Road
Within 0.5 Mile of Estimated Plume Area		
Arizona Collegiate High School	Charter School	3161 N. 33rd Avenue
Desiderate High School	Public School	2920 N. 34th Drive
Pan-American Charter School	Charter School	3001 W. Indian School Road
Concentra Urgent Care West	Medical Clinic	3532 W. Thomas Road
Iora Primary Care	Medical Clinic	3137 W. Indian School Road
Within 1.0 Mile of Estimated Plume Area		
Alhambra High School	Public School	3839 W. Camelback Road
Bostrom High School	Public School	3535 N. 27th Avenue
Bourgade Catholic High School	Private School	4602 N. 31st Avenue
Career Success High School	Charter School	3816 N. 27th Avenue
Glenn L. Downs Elementary School	Public School	3611 N. 47th Avenue
Granada Primary School	Public School	3232 W. Campbell Avenue
Granada East Elementary School	Public School	3022 W. Campbell Avenue
Justine Spitalny Elementary School	Public School	3201 N. 46th Drive
Liberty Traditional Charter School	Charter School	4027 N. 45th Avenue
P.T. Coe Elementary School	Public School	3801 W. Roanoke Avenue
West Phoenix Charter High School	Charter School	3835 W. Thomas Road
Arizona Healthy Clinic LLC	Medical Clinic	4344 W. Indian School Road
Fresenius Medical Care Maryvale	Medical Clinic	4502 W. Indian School Road
A Kiddie's Kingdom	Childcare	2318 N. 35th Avenue
Children's Campus	Childcare	2830 N. 43rd Avenue

TABLE 26
Pumping Wells within One Mile of the Estimated Plume Area
ADEQ West Central Phoenix North Canal Plume WQARF Site

ADWR Registration Number	Owner	Name	Type	Use	Status	Depth
Within Estimated Plume Area						
608381	Salt River Project	SRP Well 9.5E-7.7N	Non-exempt	Irrigation	Active	700
Within 0.5 Mile of Estimated Plume Area						
608377	Salt River Project	SRP Well 10.5E-7.5N	Non-exempt	Irrigation	Active	698
626552	City of Phoenix	COP-70	Non-exempt	Public Supply	Inactive	701
626553	City of Phoenix	COP-71	Non-exempt	Public Supply	Inactive	545
618512	Dan Ray/D&R Enterprises	MTP-1	Exempt	Domestic Supply	Active	N/A
800680	DS Waters of America, Inc.	Old	Non-exempt	Commercial Supply	Active	950
221831	DS Waters of America, Inc.	New	Non-exempt	Commercial Supply	Active	950 [1]
Within 1.0 Mile of Estimated Plume Area						
608374	Salt River Project	SRP Well 8.5E-7.5N	Non-exempt	Irrigation	Active	700
626550	City of Phoenix	COP-68	Non-exempt	Public Supply	Inactive	434
626575	City of Phoenix	COP-151	Non-exempt	Public Supply	Inactive	650
626576	City of Phoenix	COP-152	Non-exempt	Public Supply	Inactive	630
634633	Theo Post	Post Well	Exempt	Domestic Supply	Active	500

Notes:

N/A = not available

[1] = Well 221831 was intended as a replacement for Well 800680; no other construction details available.

TABLE 27
Groundwater Use Pathway Screening
ADEQ West Central Phoenix North Canal Plume WQARF Site

Chemical	Concentration (µg/L)	AQWS
West Plume		
Chromium (total)	13.6	100
1,1-Dichloroethene	74.4	7
Trichloroethene	102	5
Central Plume		
Chromium (total)	1100	100
1,1-Dichloroethene	62	7
Tetrachloroethene	18.2	5
Trichloroethene	199	5
East Plume		
Chromium (total)	33	100
Tetrachloroethene	320	5
Trichloroethene	3.1	5

AWQS = aquifer water quality standard
µg/L = micrograms per liter

TABLE 28
Soil Vapor Screening for Potential Indoor Air Exposure
ADEQ West Central Phoenix North Canal Plume WQARF Site

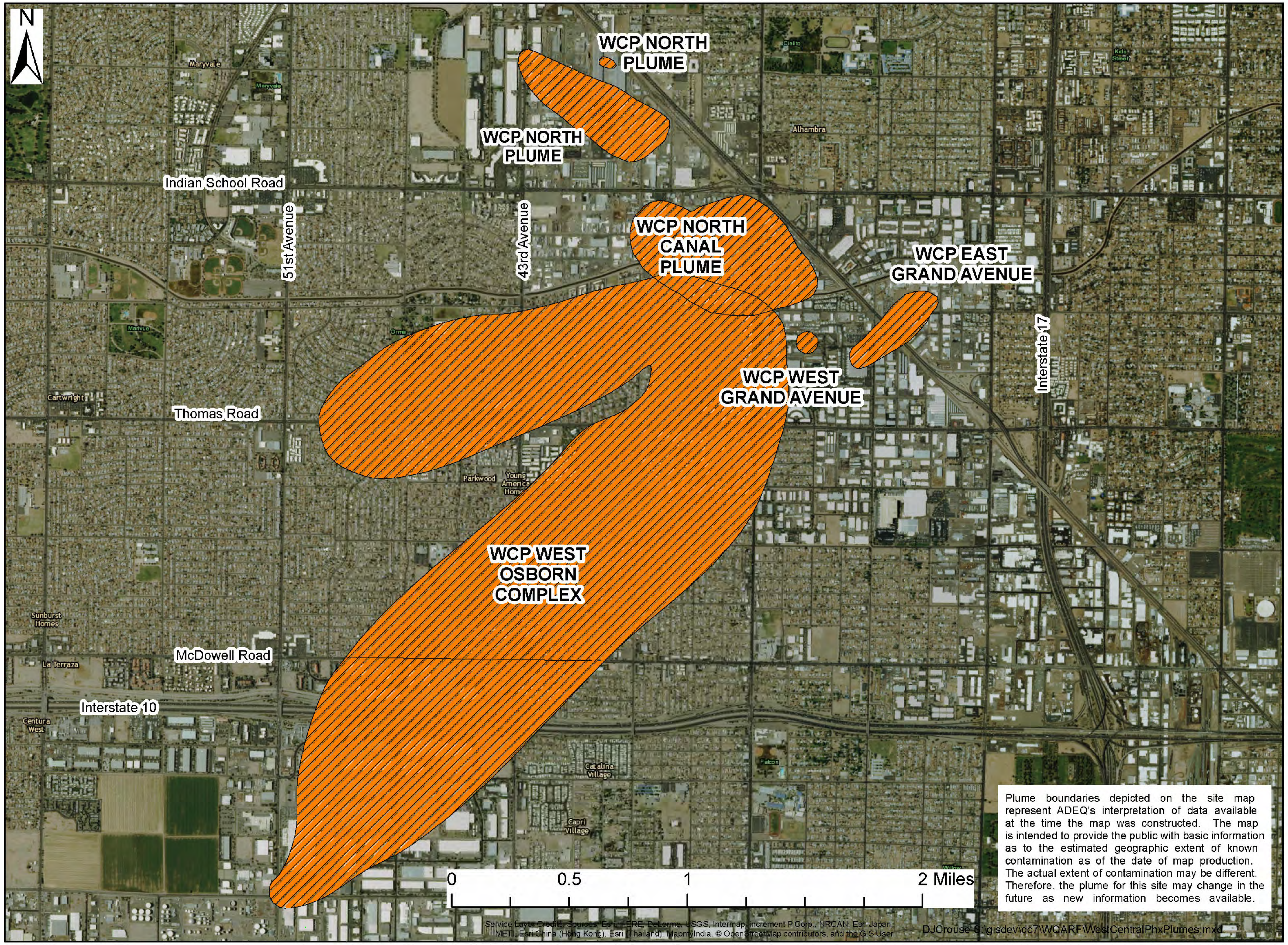
Facility	Soil Boring	PCE	TCE
		mg/m^3	
West Plume			
Precise Products	1	1	**1.1**
	2	1	**2.2**
	3	1	**14**
	4	**2.9**	**11**
Giltspur Exhibits	1	1	**1.8**
	2	1	**3.8**
	3	**1.3**	1
	4	1	1
	5	1	1
Former Facilities	NCP-1-10	**0.0721**	**0.165**
	NCP-2-10	**0.066**	**0.223**
Govway Building	NCP-12-10	**0.0199**	0.00537
	NCP-13-10	0.136	0.0537
Stevens Engineering	NCP-10-10	**0.422**	**0.116**
	NCP-11-10	**0.0164**	**0.0449**
Bootz & Duke	WCP-241	**0.0205**	**0.00891**
Central Plume			
Osborn Products	1	1	1
	2	1	1
	3	1	1
	4	1	**2.8**
	NCP-14-10	**0.407**	**1.221**
	NCP-15-10	**1.833**	**0.275**
Southwest Metal Industries	1	1	**2.4**
	2	1	1
	3	1	1
	4	1	1
	5	**1.5**	1
	6	1	1
	7	**2.8**	1
	8	**1.3**	1
	9	1	1
	NCP-16-10	**0.218**	**0.0108**
	NCP-17-10	**0.526**	**0.076**
Pyramid Industries	1	**1.4**	**3.2**
	2	1	1
	3	**1.8**	1
	4	**1.9**	1
	NCP-3-10	**1.12**	0.01
	NCP-4-10	**0.858**	**0.015**
Triad Trucking	1	**11**	1
	2	**1.2**	1
	3	**2.2**	1
	4	**6.8**	1
	NCP-18-10	**65.29**	0.537
	NCP-19-10	**0.0342**	0.0134

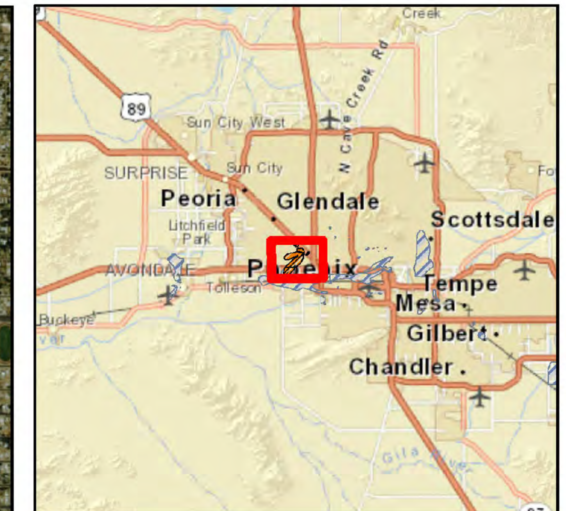
TABLE 28
Soil Vapor Screening for Potential Indoor Air Exposure
ADEQ West Central Phoenix North Canal Plume WQARF Site

Facility	Soil Boring	PCE	TCE
		mg/m^3	
East Plume			
DJK, Inc.	1	**0.382**	0.00537
HCZ Custom Homes	1	**3.398**	**0.0891**
	WCP-213	**120**	5
	NCP-5-10	**251.5**	2.685
	NCP-6-10	**223.1**	2.685
	NCP-7-10	**306.5**	2.685
	NCP-8-10	**27.19**	0.537
	NCP-9-10	**1254**	13.425
Not Applicable	WCP-218	**3**	1
Screening Levels			
Industrial air RSL		0.047	0.003
SVSL		1.6	0.1

Notes:
Values in bold are concentrations above the reporting limit
Shaded values exceed the SVSL for industrial exposure
mg/m^3 = milligrams per cubic meter
PCE = tetrachloroethene
TCE = trichloroethene
RSL = Regional Screening Level (US EPA, May 2016)
SVSL = soil vapor screening level (calculated from RSL and attenuation factor of 0.03)

FIGURES





WCP WQARF Sites

Plume update: 02/29/2016

ADEQ Arizona Department of Environmental Quality

Date Map Saved: 2016-02-29

Publication Number: M 16 - 01

DC7S:\gisdev\dc7\WQARF\WestCentralPhxPlumes.mxd

SOURCE: ADEQ WEST CENTRAL PHOENIX WQARF STUDY AREA, FEBRUARY 2016

N

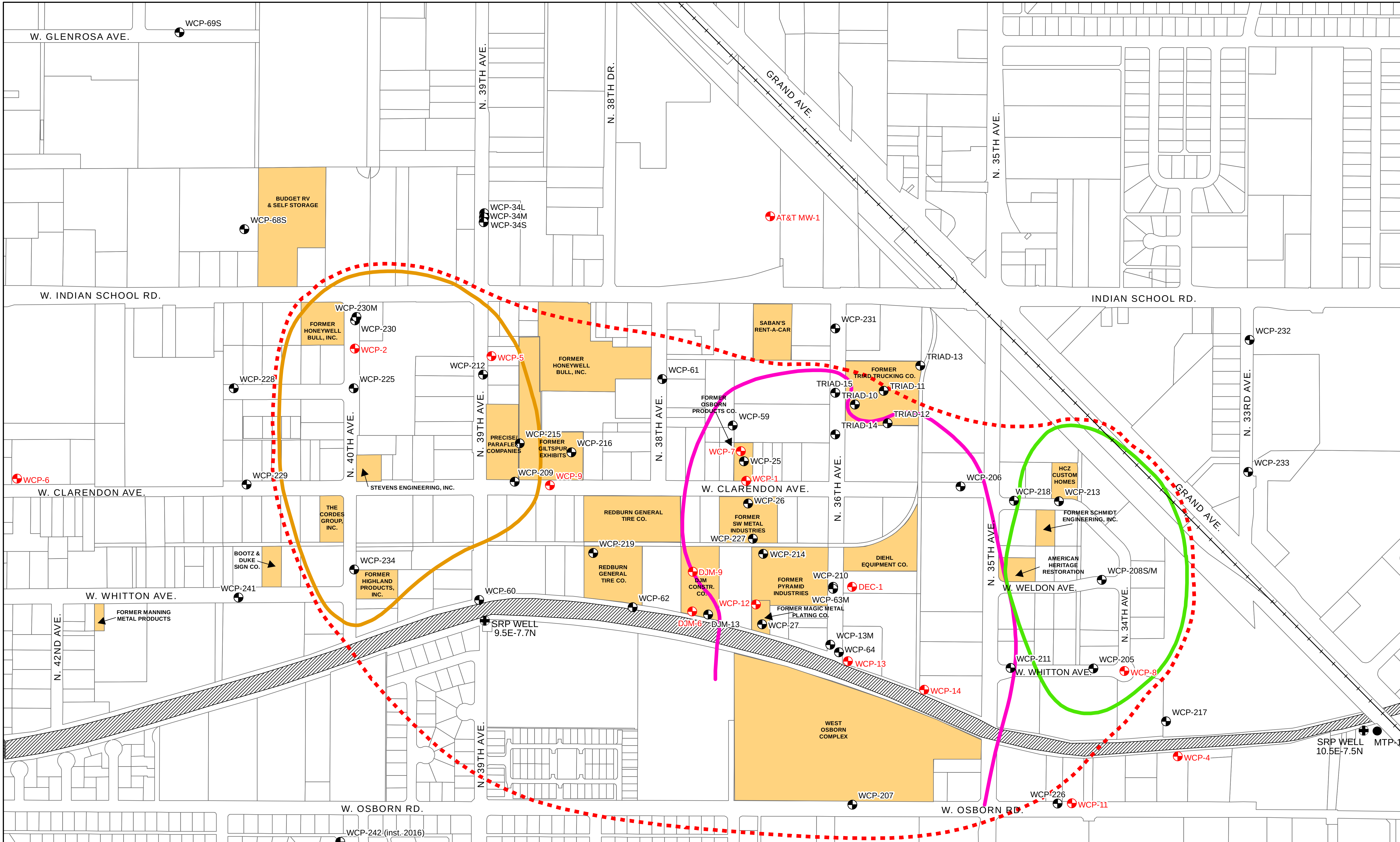
0 0.25 0.5

APPROXIMATE SCALE IN MILES

HYDRO GEO CHEM, INC.

SITE VICINITY MAP
WEST CENTRAL PHOENIX WQARF STUDY AREA
NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	6/29/16	JAA	6/29/16	2014042031A	1



WCP-27 Monitoring Well with Well ID

WCP-6 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

Estimated General Plume Boundary

Estimated West Plume Extent, November 2015

Estimated Central Plume Extent, November 2015

Estimated East Plume Extent, November 2015

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

NOTE: Contours generated from groundwater sample results - November 2015
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.

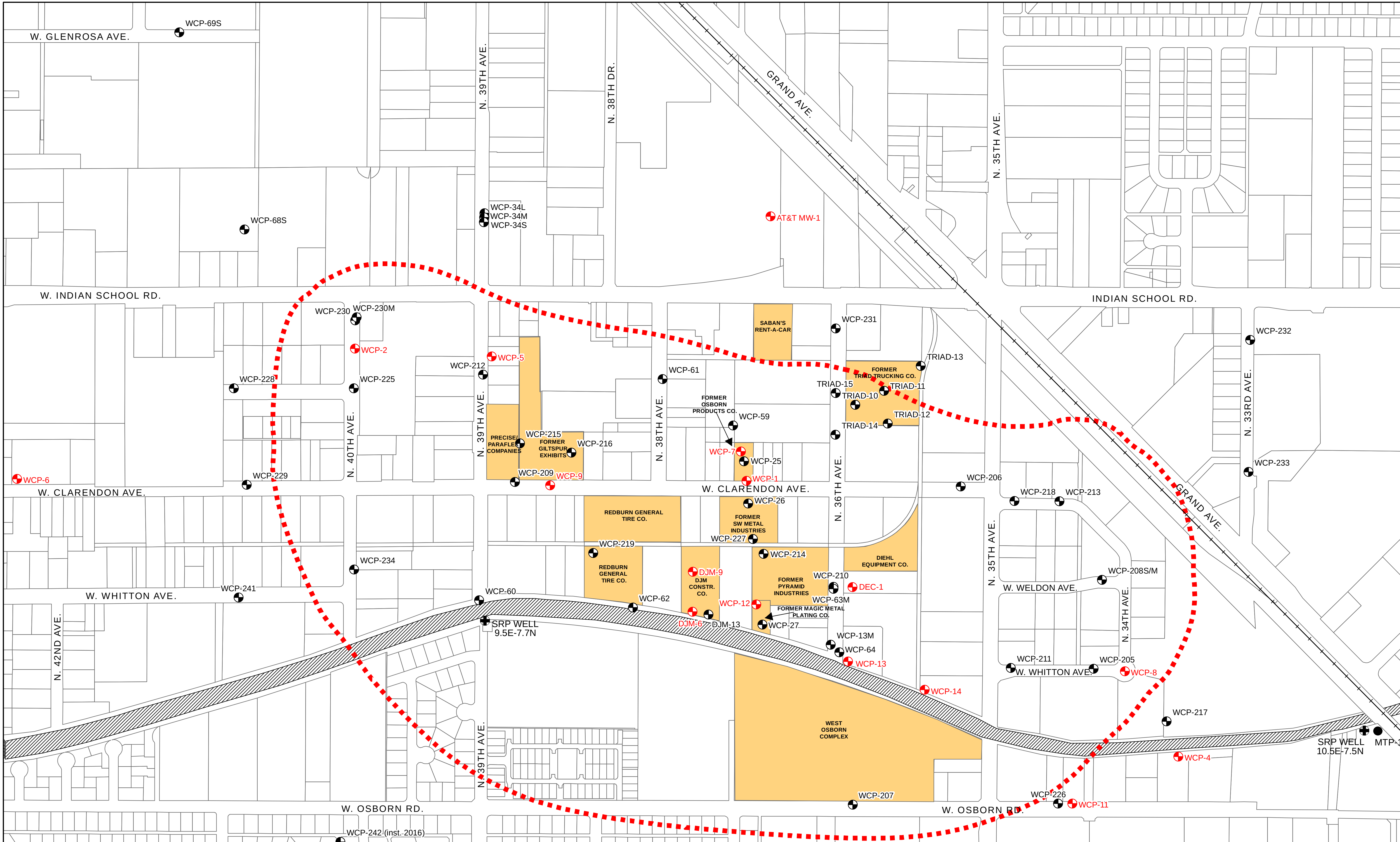
0 250 500

APPROXIMATE SCALE IN FEET

HYDRO GEO CHEM, INC.

ESTIMATED LOCATIONS OF WEST, EAST AND CENTRAL GROUNDWATER PLUMES, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	02/01/17	2014042039G	2



WCP-27 Monitoring Well with Well ID

WCP-6 Monitoring Well with Well ID (abandoned or dry)

November 2015 Estimated Plume Boundary

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl
Note: Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.

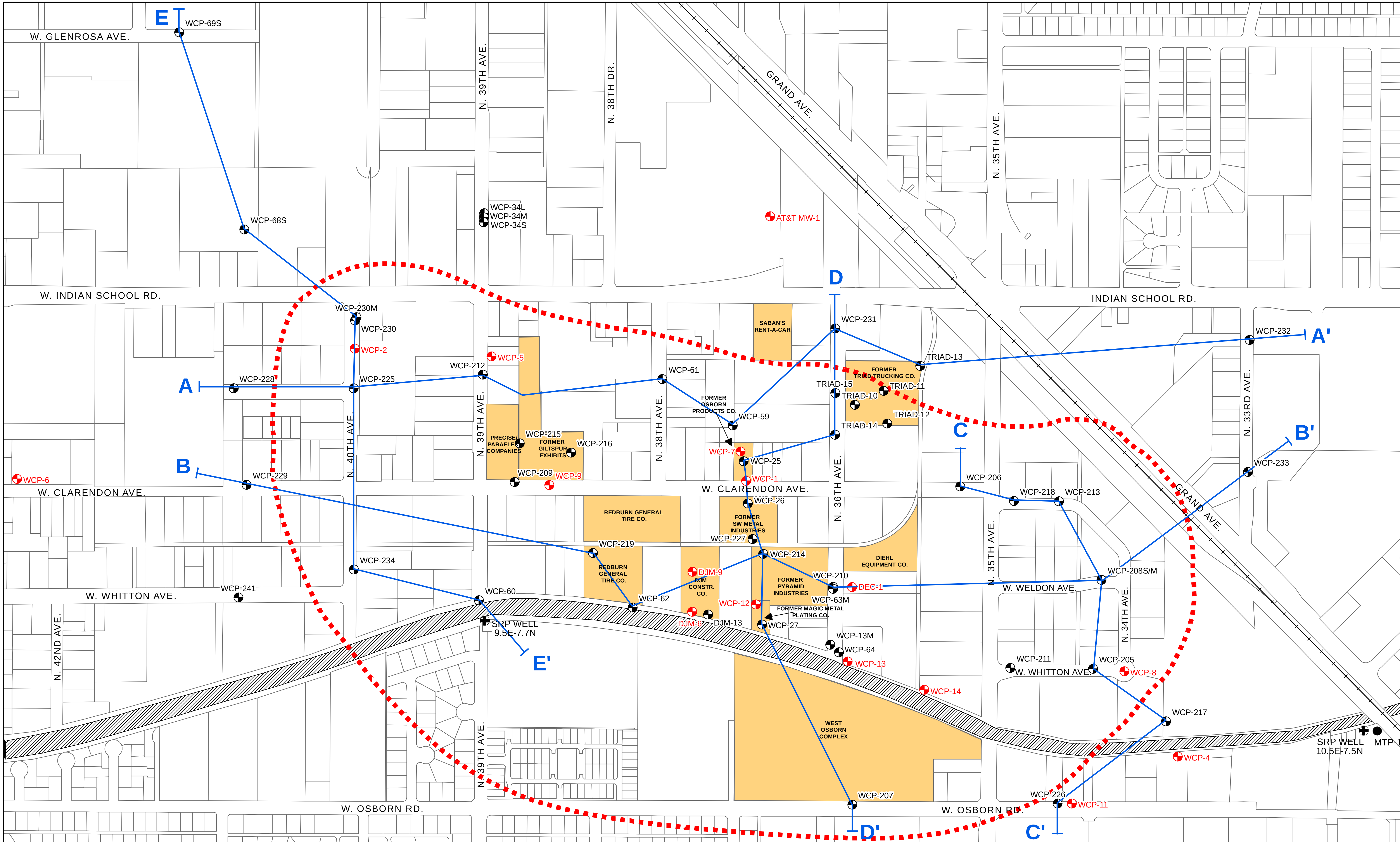
0 250 500
APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

GROUNDWATER MONITORING WELL NETWORK
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	02/01/17	2014042041G	3



WCP-27 Monitoring Well with Well ID

WCP-6 Monitoring Well with Well ID (abandoned or dry)

November 2015 Estimated Plume Boundary

A — A' Geologic Cross Section Transect

Irrigation Canal

SRP Production Well

Other Production Well

Railroad Tracks

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl
Note: Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.

0 250 500

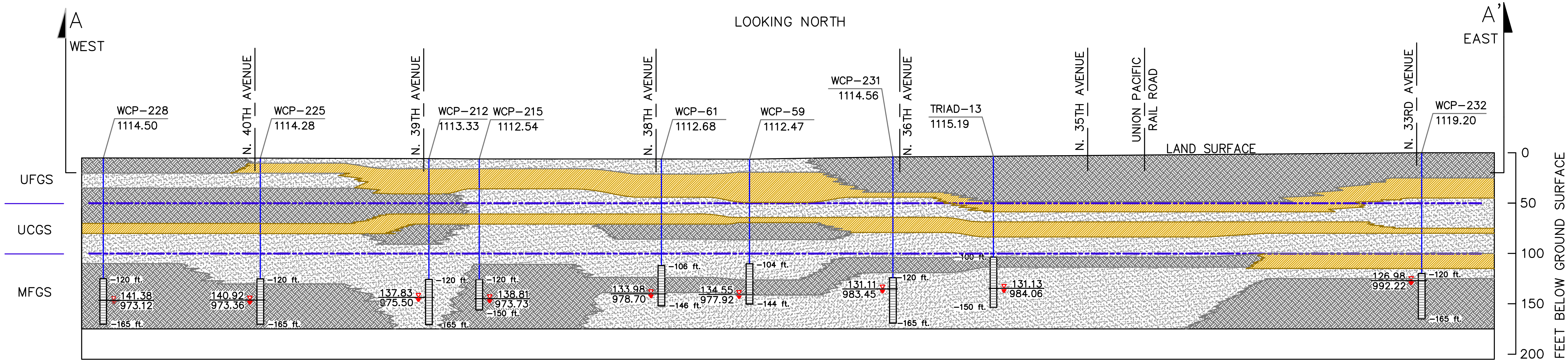
APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

LOCATIONS OF GEOLOGIC CROSS-SECTIONS
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/21/16	2014042042G	4



LEGEND

−120 ft. / −165 ft.	MONITOR WELL SCREEN INTERVAL
WCP−207 / 1108.08	MONITOR WELL IDENTIFICATION NUMBER MEASURING POINT ELEVATION
−165 ft.	SCREEN DEPTH
148.13 / 959.95	DEPTH TO GROUNDWATER GROUNDWATER ELEVATION
NA	NOT APPLICABLE

NOTE WATER LEVELS WERE COLLECTED FOR WELLS BETWEEN JANUARY 28, 2015 AND FEBRUARY 12, 2015. CROSS SECTION LOCATION SHOWN ON FIGURE 4.

- SILT AND CLAY (CL−ML)
- WELL GRADED SAND (SW) AND GRAVEL
- SILTY−CLAYEY SAND (SM)
- GRAVEL (GM−GW)

UFGS	UPPER FINE−GRAINED SUBUNIT
UCGS	UPPER COARSE−GRAINED SUBUNIT
MFGS	MIDDLE FINE−GRAINED SUBUNIT
LSGS	LOWER SAND AND GRAVEL SUBUNIT
−·−·−	APPROXIMATE BREAK BETWEEN SUBUNITS OF THE UPPER ALLUVIAL UNIT (UAU)

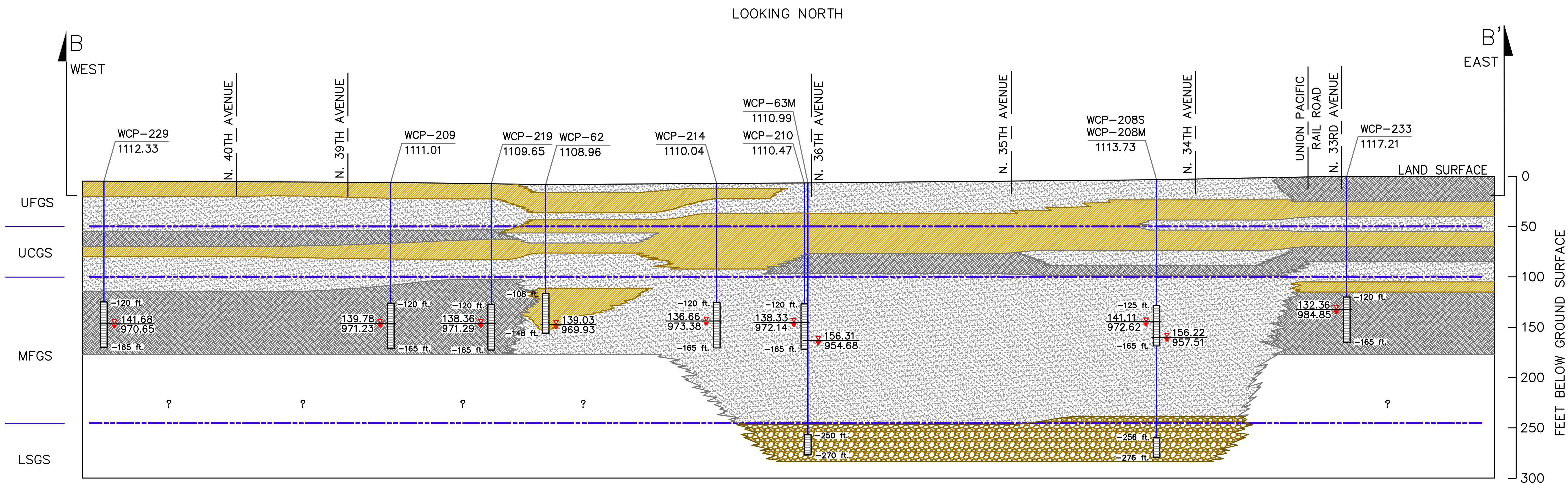
APPROXIMATE SCALE
Measured In Feet
Horizontal Scale
0 200 400

APPROXIMATE SCALE
Measured In Feet
Vertical Scale
0 50 100

HYDRO GEO CHEM, INC.

WEST-EAST STRATIGRAPHIC CROSS SECTION A-A' WITH SELECTED MONITORING WELLS
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
SPS	3/03/15	JAA	3/03/15	2014042003A	5



LEGEND

-120 ft. / -165 ft.	MONITOR WELL SCREEN INTERVAL
WCP-207 / 1108.08	MONITOR WELL IDENTIFICATION NUMBER MEASURING POINT ELEVATION
-165 ft.	SCREEN DEPTH
148.13 / 959.95	DEPTH TO GROUNDWATER GROUNDWATER ELEVATION
NA	NOT APPLICABLE

NOTE: WATER LEVELS WERE COLLECTED FOR WELLS BETWEEN JANUARY 28, 2015 AND FEBRUARY 12, 2015. CROSS SECTION LOCATION SHOWN ON FIGURE 4.

SILT AND CLAY (CL–ML)
WELL GRADED SAND (SW) AND GRAVEL
SILTY–CLAYEY SAND (SM)
GRAVEL (GM–GW)

UFGS	UPPER FINE–GRAINED SUBUNIT
UCGS	UPPER COARSE–GRAINED SUBUNIT
MFGS	MIDDLE FINE–GRAINED SUBUNIT
LSGS	LOWER SAND AND GRAVEL SUBUNIT

APPROXIMATE BREAK BETWEEN SUBUNITS OF THE UPPER ALLUVIAL UNIT (UAU)

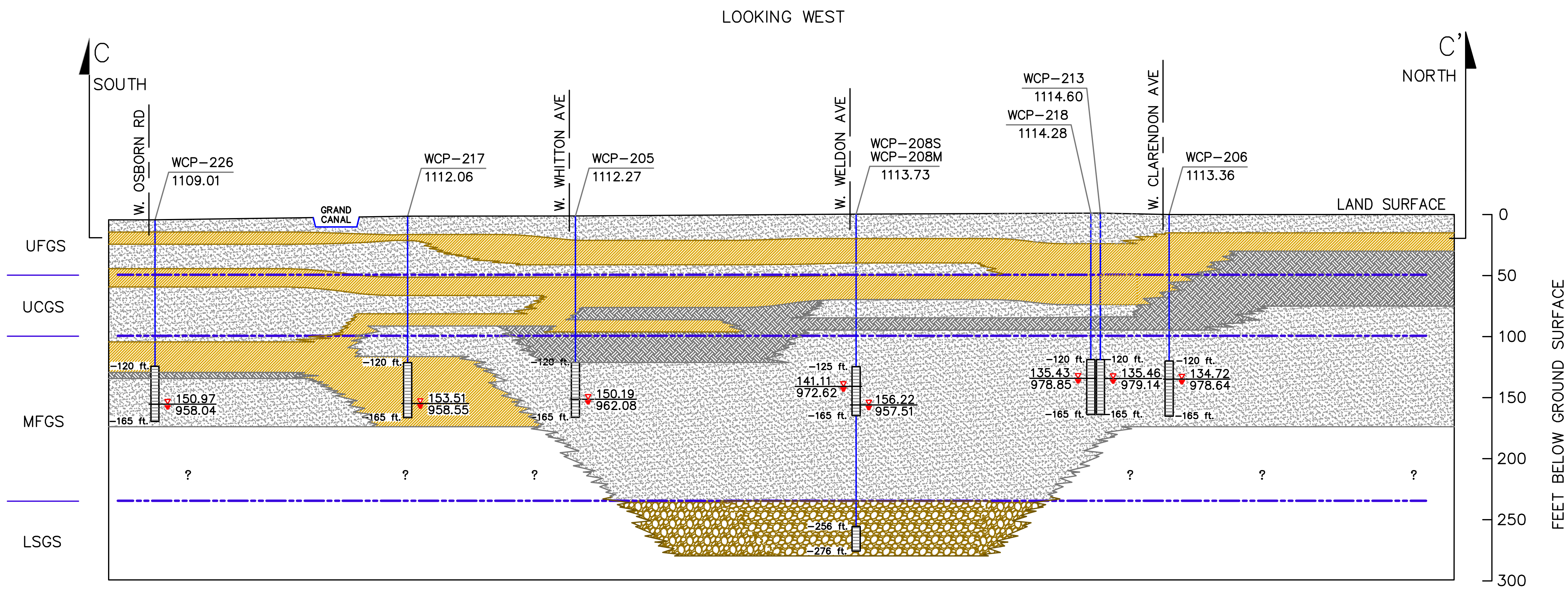
APPROXIMATE SCALE
Measured In Feet
Horizontal Scale
0 200 400

APPROXIMATE SCALE
Measured In Feet
Vertical Scale
0 50 100

HYDRO GEO CHEM, INC.

WEST-EAST STRATIGRAPHIC CROSS SECTION B-B' WITH SELECTED MONITORING WELLS
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	2/02/17	JAA	2/02/17	2014042004A	6



LEGEND

-120 ft. / -165 ft.	MONITOR WELL SCREEN INTERVAL
WCP-207 / 1108.08	MONITOR WELL IDENTIFICATION NUMBER MEASURING POINT ELEVATION
-165 ft.	SCREEN DEPTH
148.13 / 959.95	DEPTH TO GROUNDWATER GROUNDWATER ELEVATION
NA	NOT APPLICABLE

NOTE WATER LEVELS WERE COLLECTED FOR WELLS BETWEEN JANUARY 28, 2015 AND FEBRUARY 12, 2015. CROSS SECTION LOCATION SHOWN ON FIGURE 4.

SILT AND CLAY (CL-ML)

WELL GRADED SAND (SW) AND GRAVEL

SILTY-CLAYEY SAND (SM)

GRAVEL (GM-GW)

UFGS UPPER FINE-GRAINED SUBUNIT

UCGS UPPER COARSE-GRAINED SUBUNIT

MFGS MIDDLE FINE-GRAINED SUBUNIT

LSGS LOWER SAND AND GRAVEL SUBUNIT

APPROXIMATE BREAK BETWEEN SUBUNITS OF THE UPPER ALLUVIAL UNIT (UAU)

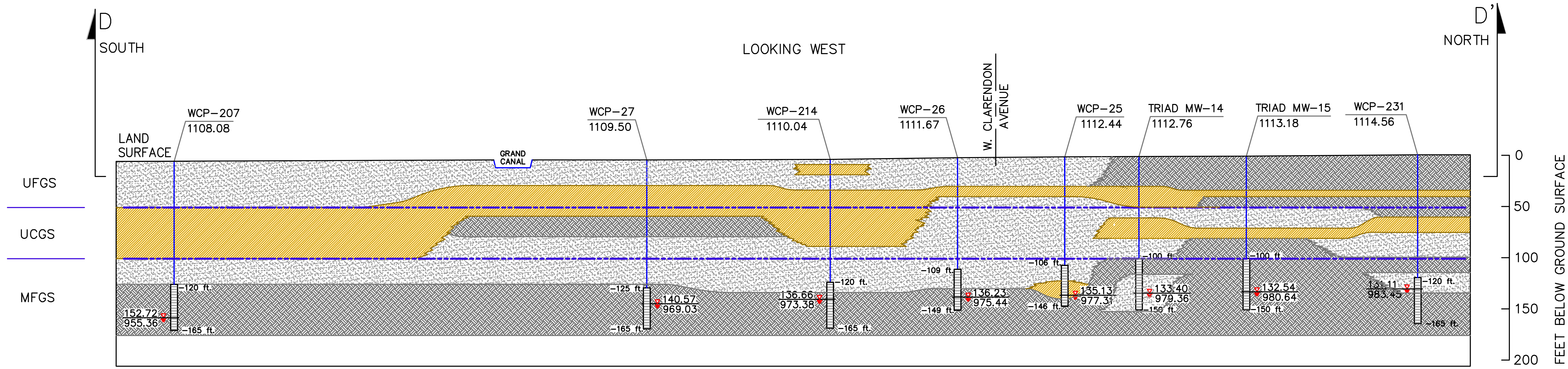
APPROXIMATE SCALE
Measured In Feet
Horizontal Scale
0 100 200

APPROXIMATE SCALE
Measured In Feet
Vertical Scale
0 50 100

HYDRO GEO CHEM, INC.

WEST-EAST STRATIGRAPHIC CROSS SECTION C-C' WITH SELECTED MONITORING WELLS
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
SPS	3/03/15	JAA	3/03/15	2014042005A	7



LEGEND

-120 ft. / -165 ft. MONITOR WELL SCREEN INTERVAL

WCP-207 / 1108.08 MONITOR WELL IDENTIFICATION NUMBER / MEASURING POINT ELEVATION

-165 ft. SCREEN DEPTH

148.13 / 959.95 DEPTH TO GROUNDWATER / GROUNDWATER ELEVATION

NA NOT APPLICABLE

NOTE WATER LEVELS WERE COLLECTED FOR WELLS BETWEEN JANUARY 28, 2015 AND FEBRUARY 12, 2015. CROSS SECTION LOCATION SHOWN ON FIGURE 4.

SILT AND CLAY (CL–ML)

WELL GRADED SAND (SW) AND GRAVEL

SILTY–CLAYEY SAND (SM)

GRAVEL (GM–GW)

UFGS UPPER FINE–GRAINED SUBUNIT

UCGS UPPER COARSE–GRAINED SUBUNIT

MFGS MIDDLE FINE–GRAINED SUBUNIT

LSGS LOWER SAND AND GRAVEL SUBUNIT

APPROXIMATE BREAK BETWEEN SUBUNITS OF THE UPPER ALLUVIAL UNIT (UAU)

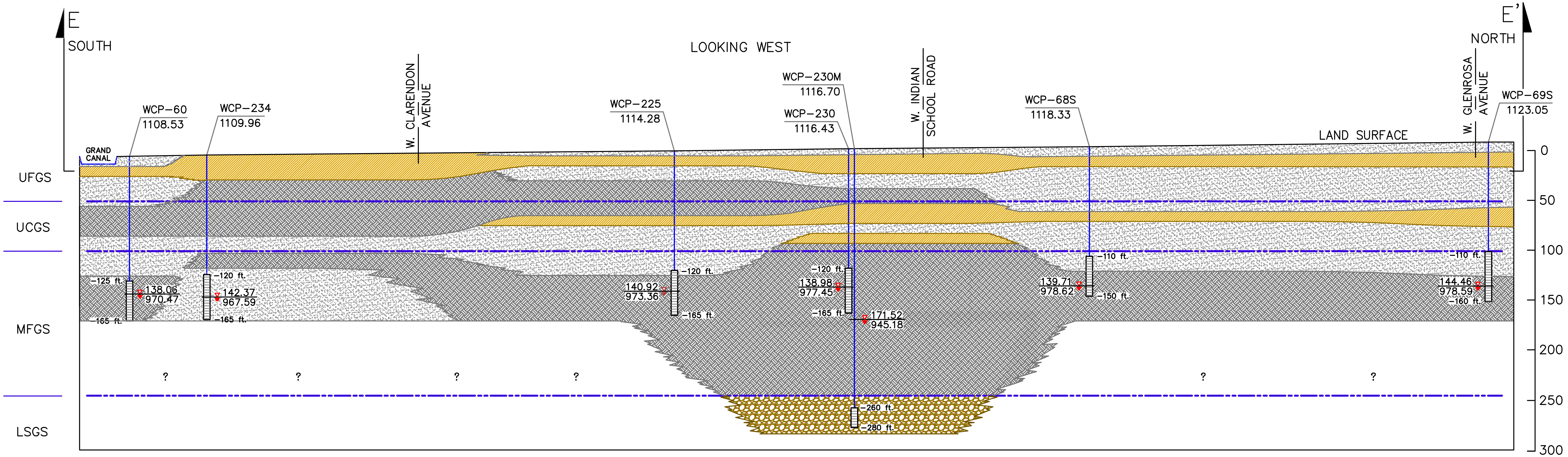
APPROXIMATE SCALE
Measured In Feet
Horizontal Scale
0 100 200

APPROXIMATE SCALE
Measured In Feet
Vertical Scale
0 50 100

HYDRO GEO CHEM, INC.

NORTH-SOUTH STRATIGRAPHIC CROSS SECTION D-D'
WITH SELECTED MONITORING WELLS
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	2/02/17	JAA	2/02/17	2014042001A	8



LEGEND

−120 ft. / −165 ft.	MONITOR WELL SCREEN INTERVAL
WCP−207 / 1108.08	MONITOR WELL IDENTIFICATION NUMBER MEASURING POINT ELEVATION
−165 ft.	SCREEN DEPTH
148.13 / 959.95	DEPTH TO GROUNDWATER GROUNDWATER ELEVATION
NA	NOT APPLICABLE

SILT AND CLAY (CL−ML)

WELL GRADED SAND (SW) AND GRAVEL

SILTY−CLAYEY SAND (SM)

GRAVEL (GM−GW)

UFGS	UPPER FINE−GRAINED SUBUNIT
UCGS	UPPER COARSE−GRAINED SUBUNIT
MFGS	MIDDLE FINE−GRAINED SUBUNIT
LSGS	LOWER SAND AND GRAVEL SUBUNIT

APPROXIMATE BREAK BETWEEN SUBUNITS OF THE UPPER ALLUVIAL UNIT (UAU)

NOTE: WATER LEVELS WERE COLLECTED FOR WELLS BETWEEN JANUARY 28, 2015 AND FEBRUARY 12, 2015 (EXCEPT FOR WCP−230M, COLLECTED ON FEBRUARY 5, 2016). CROSS SECTION LOCATION SHOWN ON FIGURE 4.

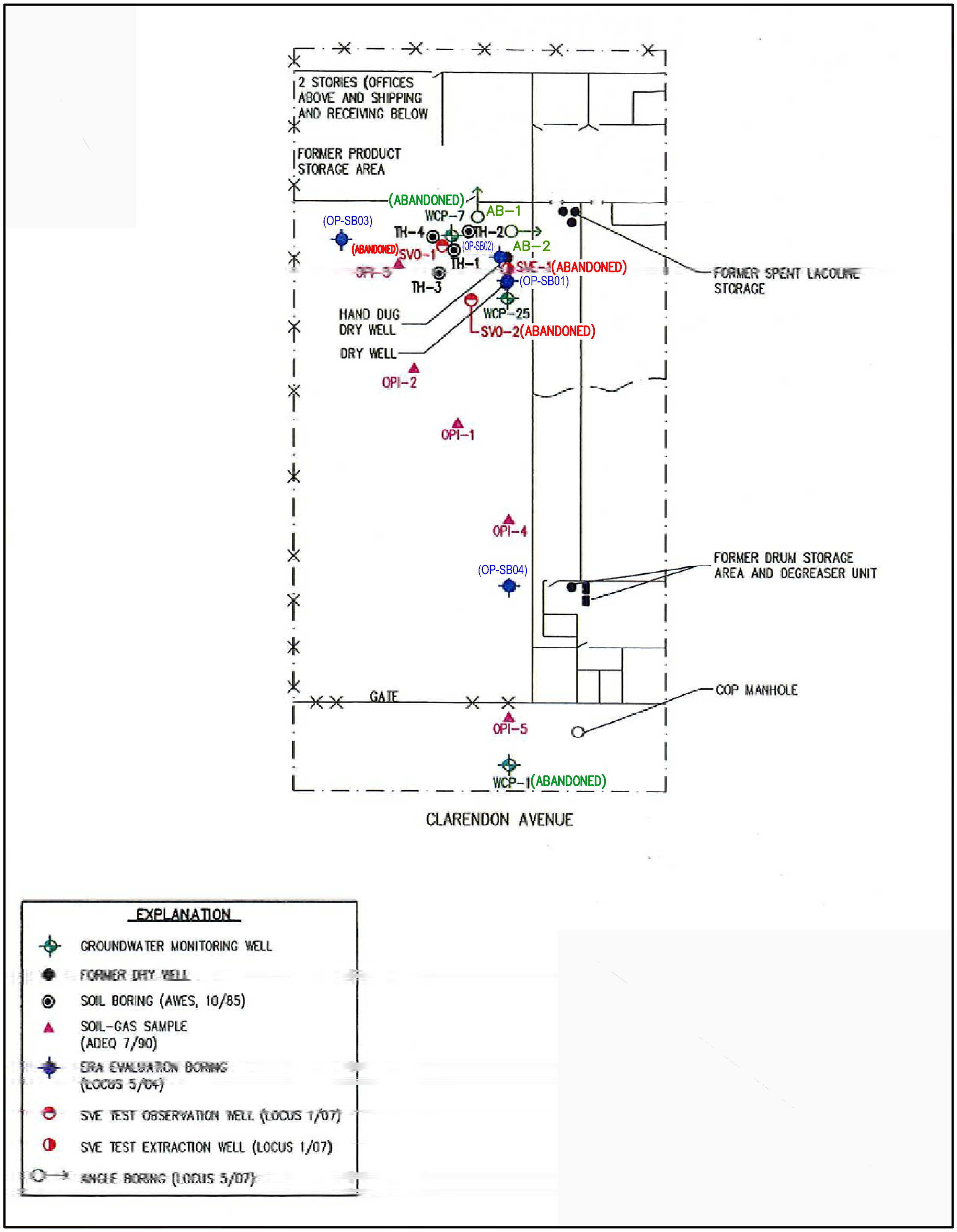
APPROXIMATE SCALE
Measured In Feet
Horizontal Scale
0 100 200

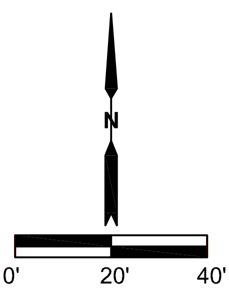
APPROXIMATE SCALE
Measured In Feet
Vertical Scale
0 50 100

HYDRO GEO CHEM, INC.

NORTH-SOUTH STRATIGRAPHIC CROSS SECTION E-E' WITH SELECTED MONITORING WELLS
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
SPS	2/05/16	JAA	2/05/16	2014042002A	9



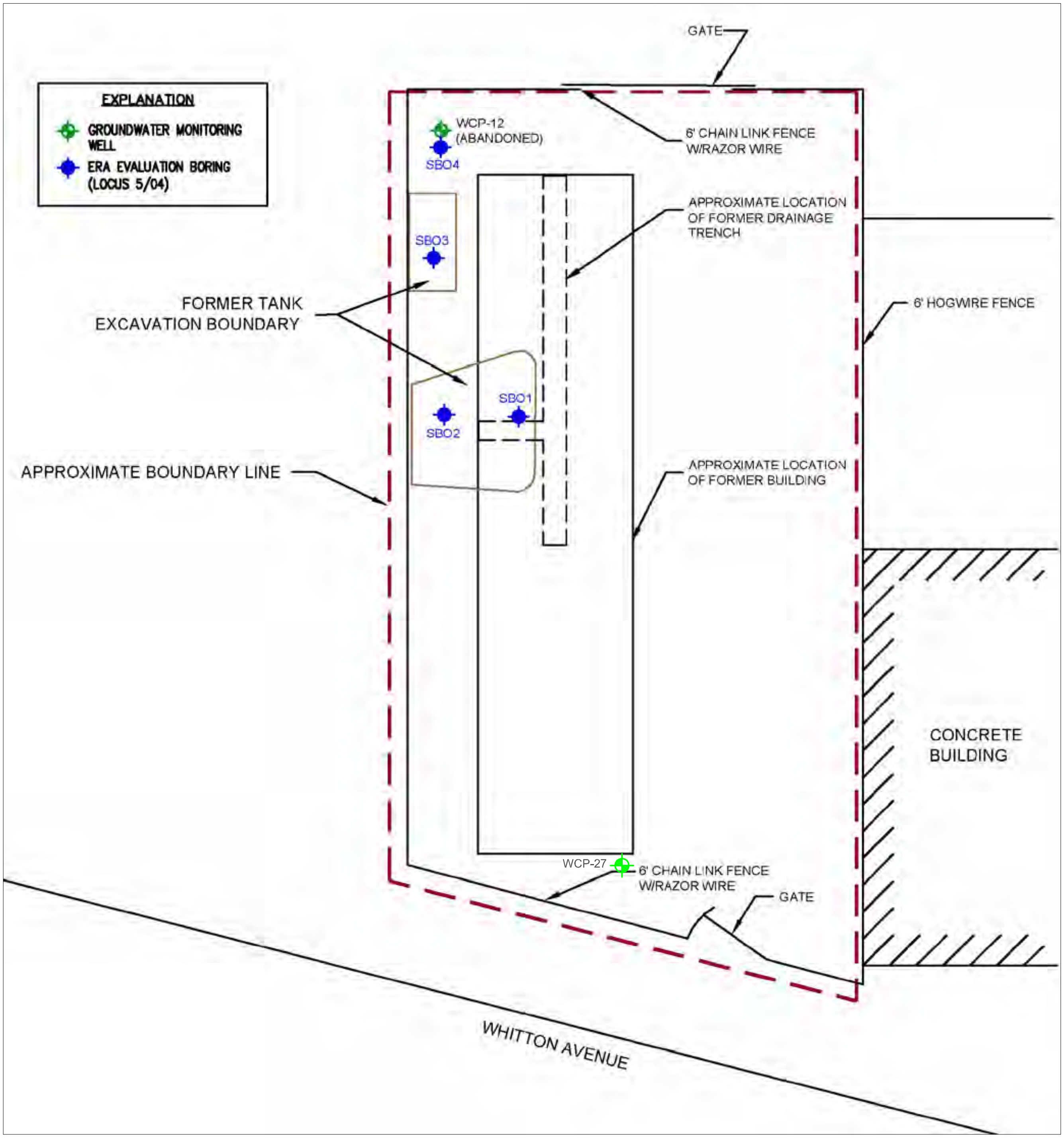


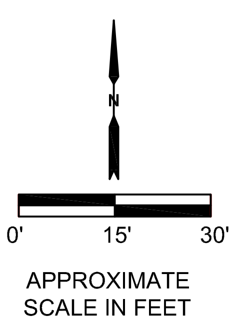
SOURCE: LOCUS TECHNOLOGIES, 2007

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER OSBORN PRODUCTS FACILITY
3632 W. CLARENDON AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Revised	File Name	Figure
FJS	12/20/13	JAA	3/31/16	2013008007A	10



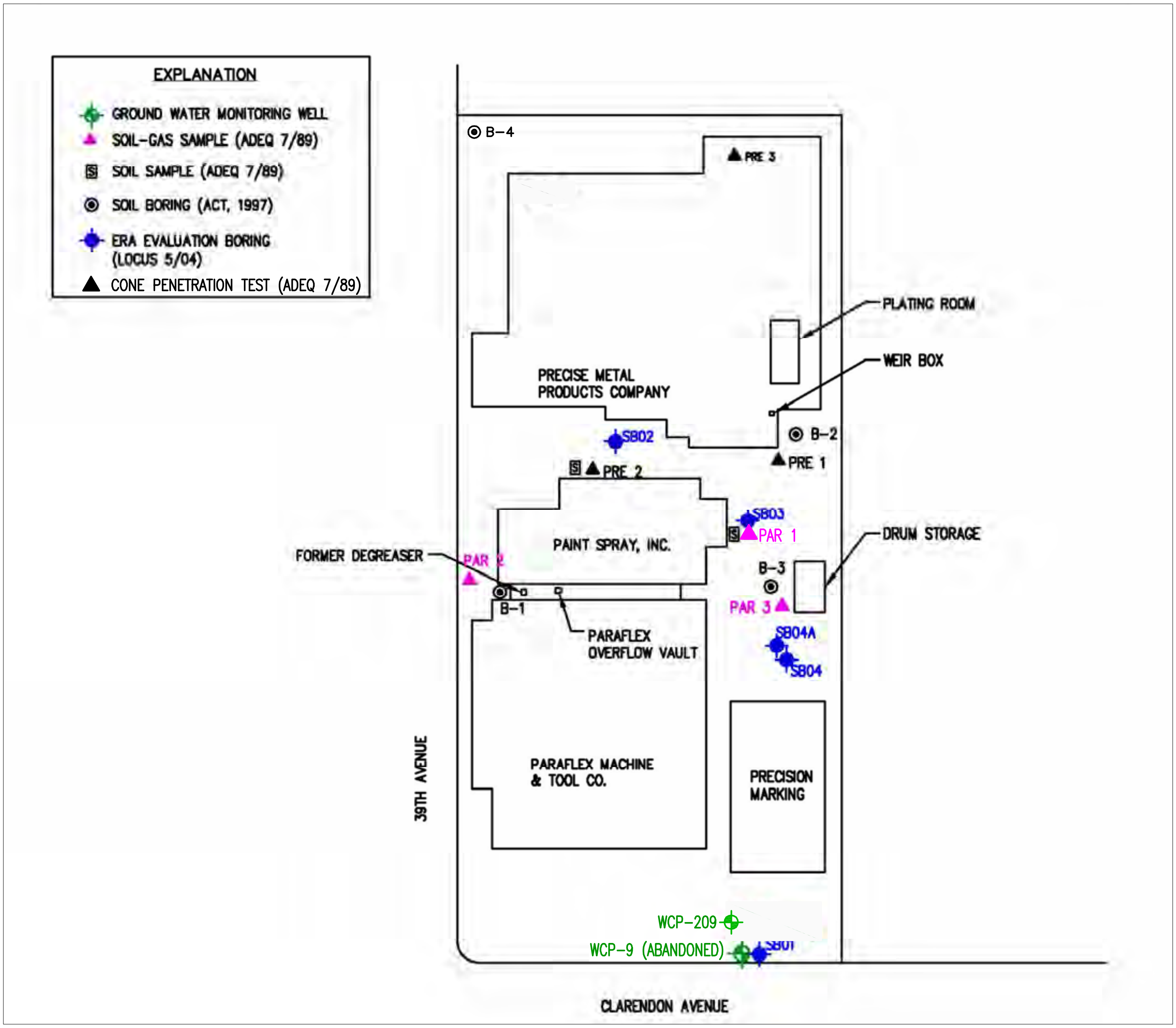


SOURCE: LOCUS TECHNOLOGIES, 2004

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER MAGIC METALS PLATING COMPANY FACILITY
3632 W. WHITTON AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Revised	File Name	Figure
FJS	12/20/13	JAA	1/04/16	2013008008A	11



0' 40' 80'

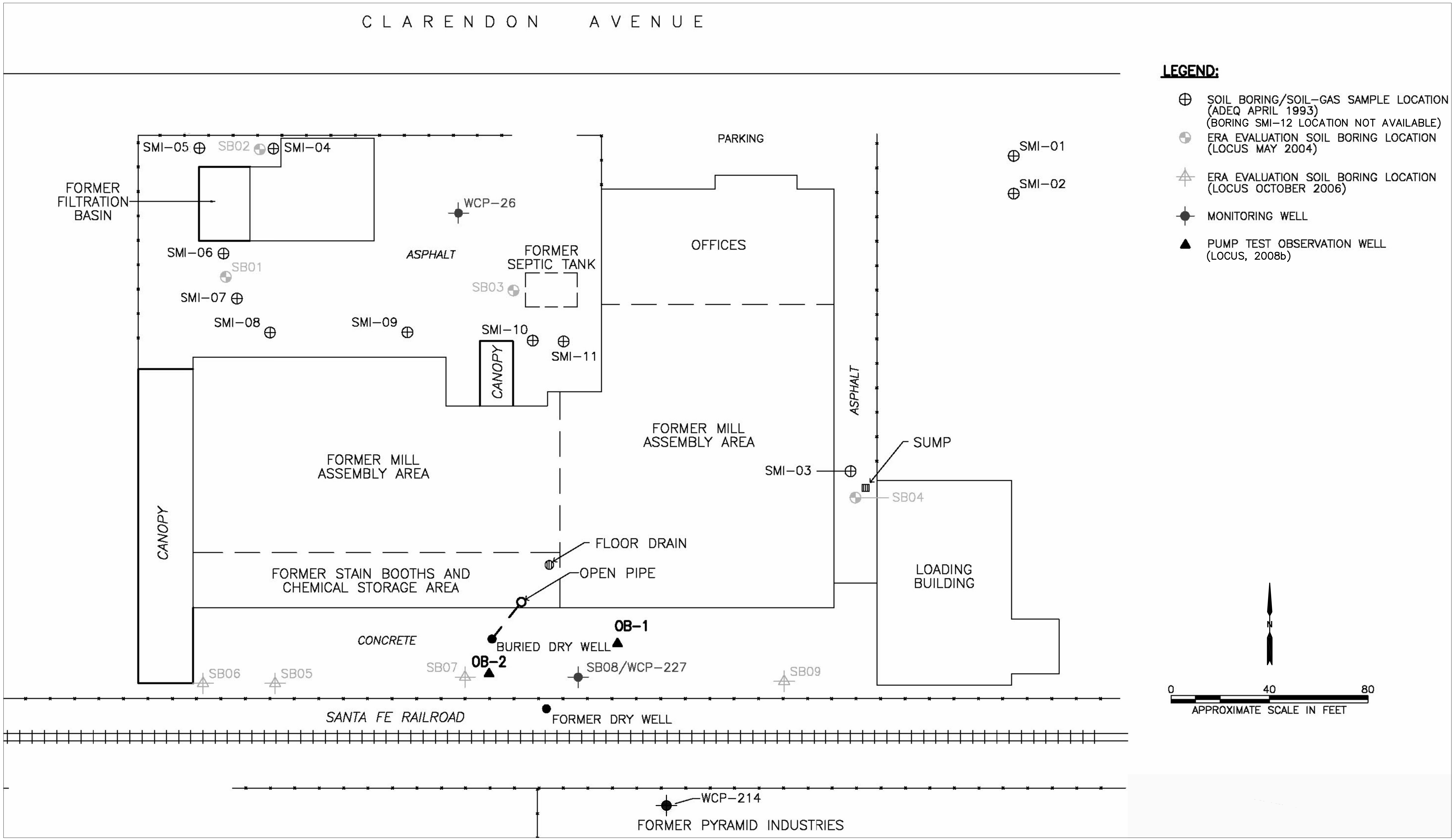
APPROXIMATE SCALE IN FEET

SOURCE: LOCUS TECHNOLOGIES, 2004

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER PRECISE / PARAFLEX FACILITY
3825/3829/3839 N. 39TH AVE & 3856 W. CLARENDON AVE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Revised	File Name	Figure
FJS	12/20/13	JAA	3/31/16	2013008009A	12

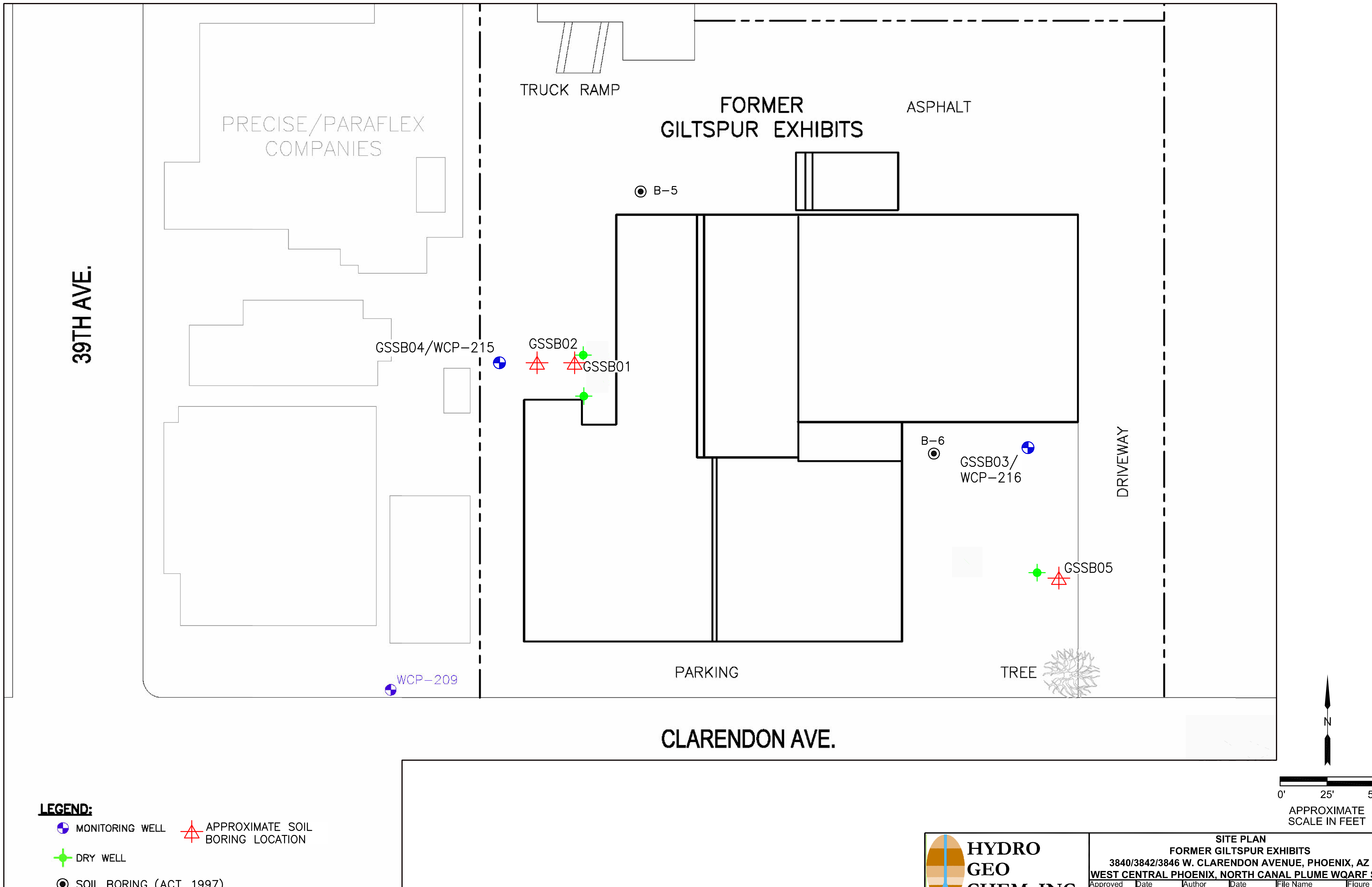


SOURCE: LOCUS TECHNOLOGIES, 2008b

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER SOUTHWEST METAL INDUSTRIES FACILITY
3625/3707 W. CLARENDON AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	3/31/15	JAA	3/31/15	2013008010A	13

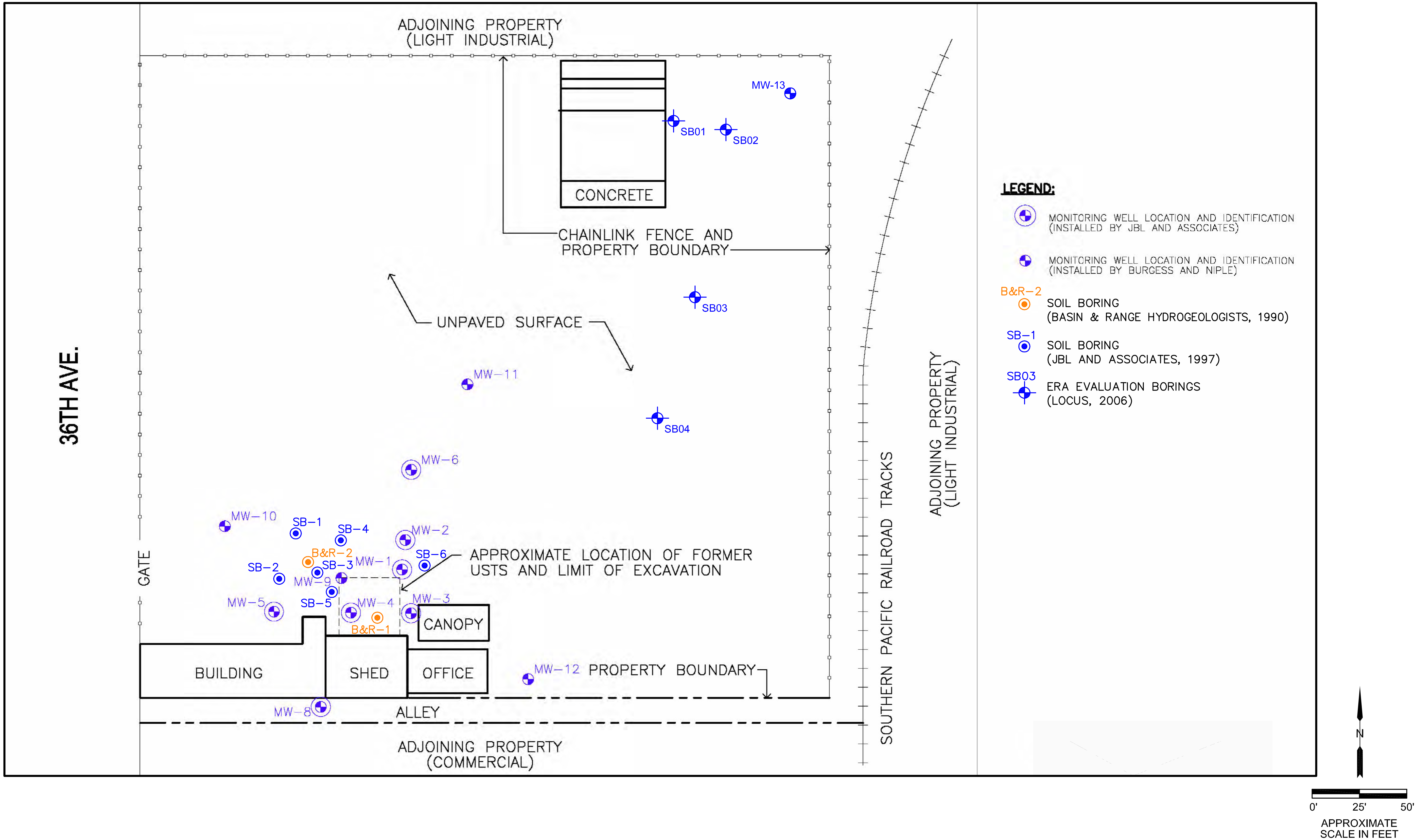


SOURCE: LOCUS TECHNOLOGIES, 2005

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER GILTSPUR EXHIBITS
3840/3842/3846 W. CLARENDON AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	12/20/13	JAA	12/20/13	2013008011A	14

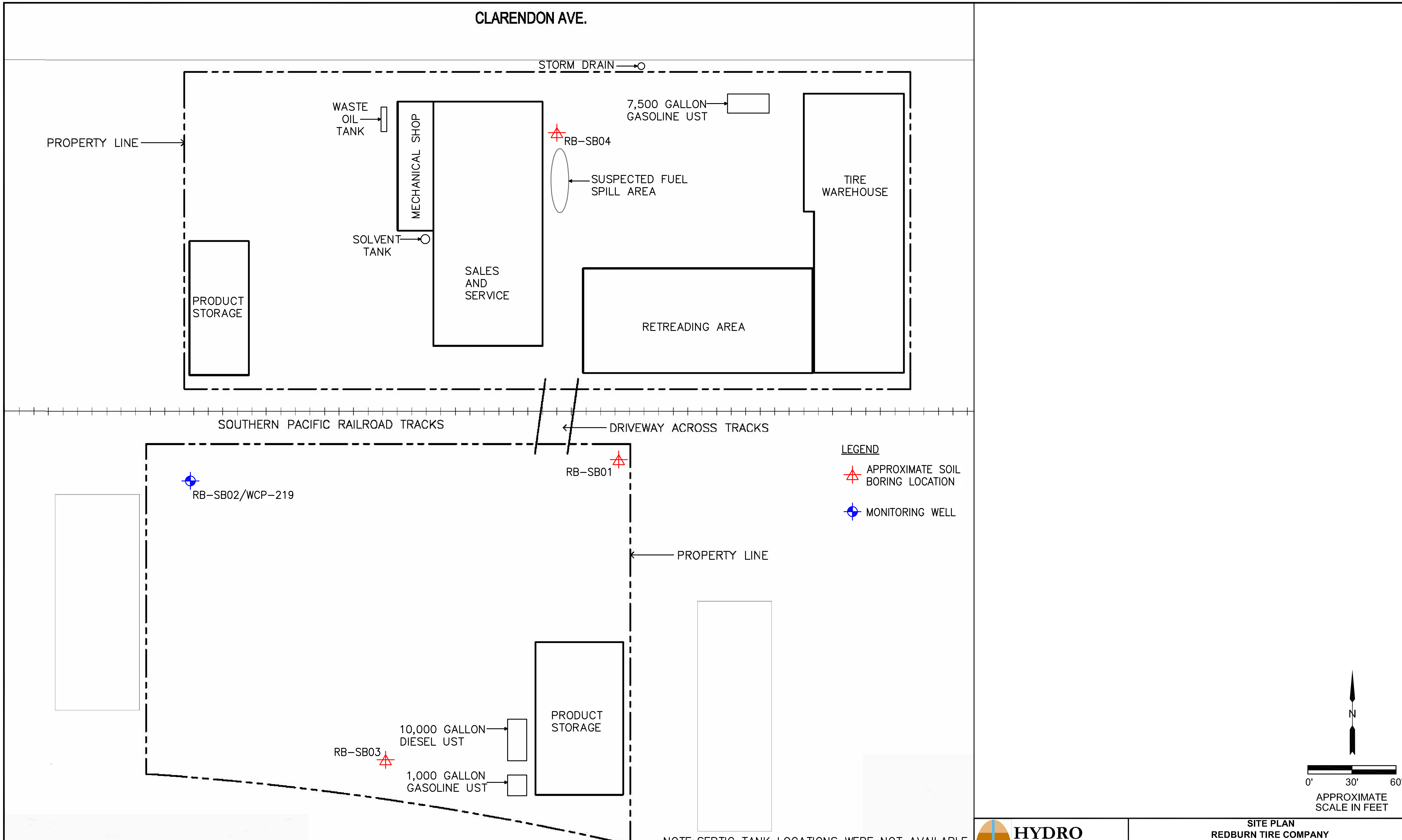


SOURCE: LOCUS TECHNOLOGIES, 2008
AND BURGESS & NIPLE, 2006.

HYDRO
GEO
CHEM, INC.

SITE PLAN
FORMER TRIAD TRUCKING COMPANY
3883 N. 36TH AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	12/20/13	JAA	12/20/13	2013008012A	15



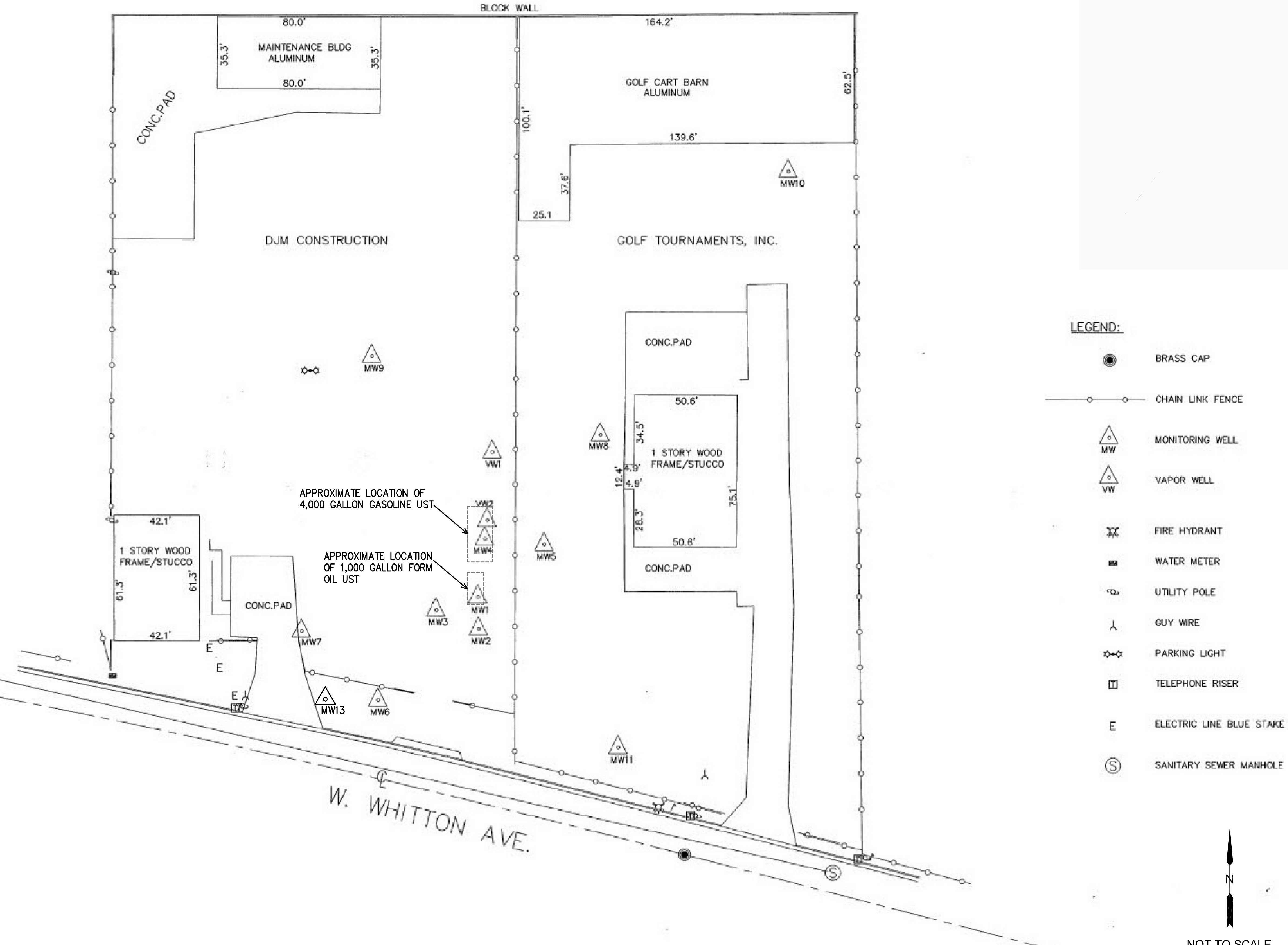
SOURCE: LOCUS TECHNOLOGIES, 2005 AND ADEQ, 1992

HYDRO GEO CHEM, INC.

SITE PLAN
REDBURN TIRE COMPANY
3727/3801/3809/3817 W. CLARENDON AVE & 3800/3802 W. WHITTON AVE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	12/20/13	JAA	12/20/13	2013008013A	16

MONITOR WELL NUMBER	ELEVATION
MW 1	1108.16
MW 2	1108.18
MW 3	1108.16
MW 4	1108.32
MW 5	1108.35
MW 6	1107.62
MW 7	1107.66
MW 8	1108.17
MW 9	1108.39
MW 10	1109.13
MW 11	1107.99
VW 1-NORTH MARK	1108.60
VW 1-SOUTH MARK	1108.58
VW 2-NORTH MARK	1108.51
VW 2-SOUTH MARK	1108.51

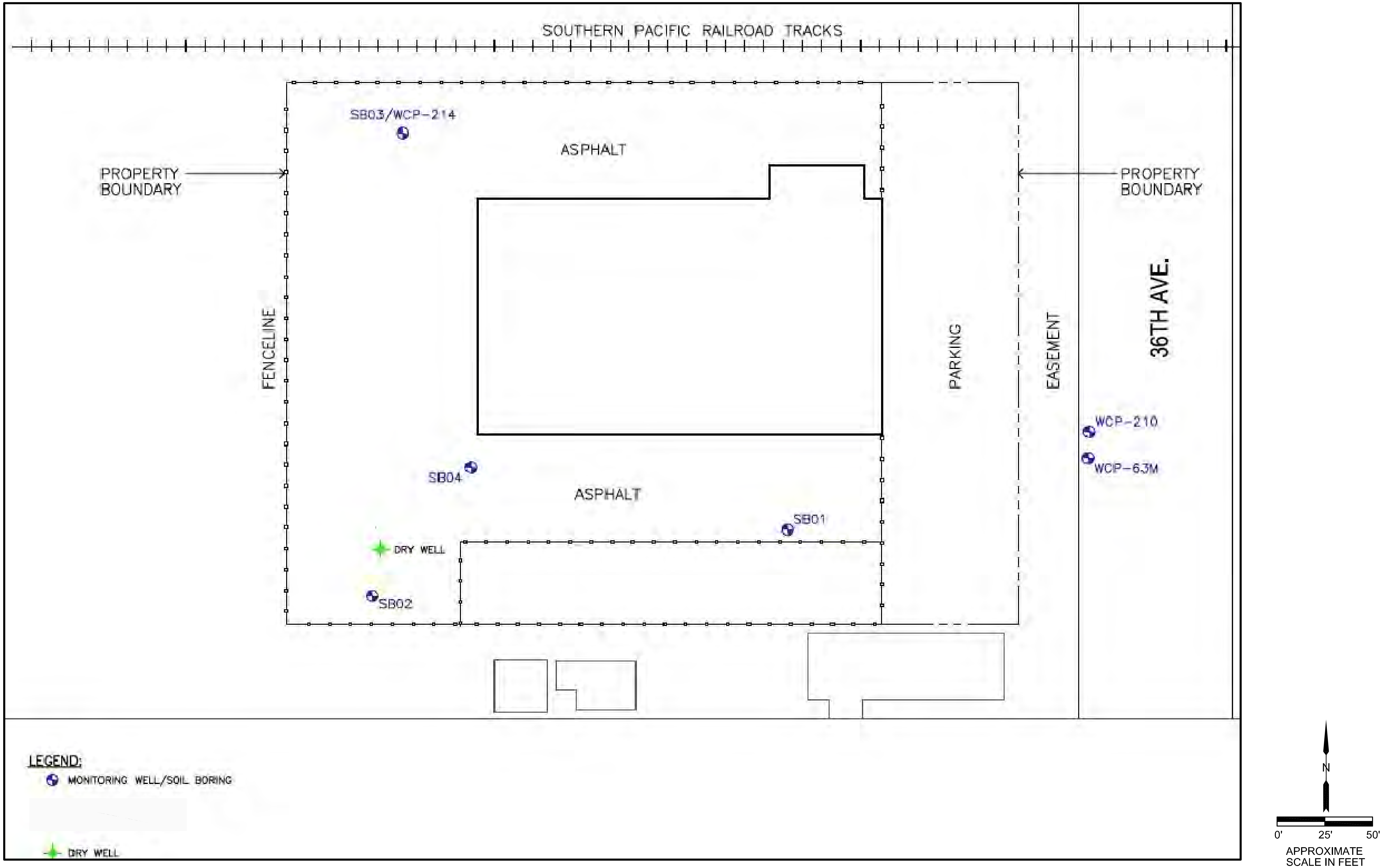


SOURCE: BURGESS & NIPLE, 2006b.

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER DJM CONSTRUCTION COMPANY FACILITY
3720 W. WHITTON AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	12/20/13	JAA	12/20/13	2013008014A	17

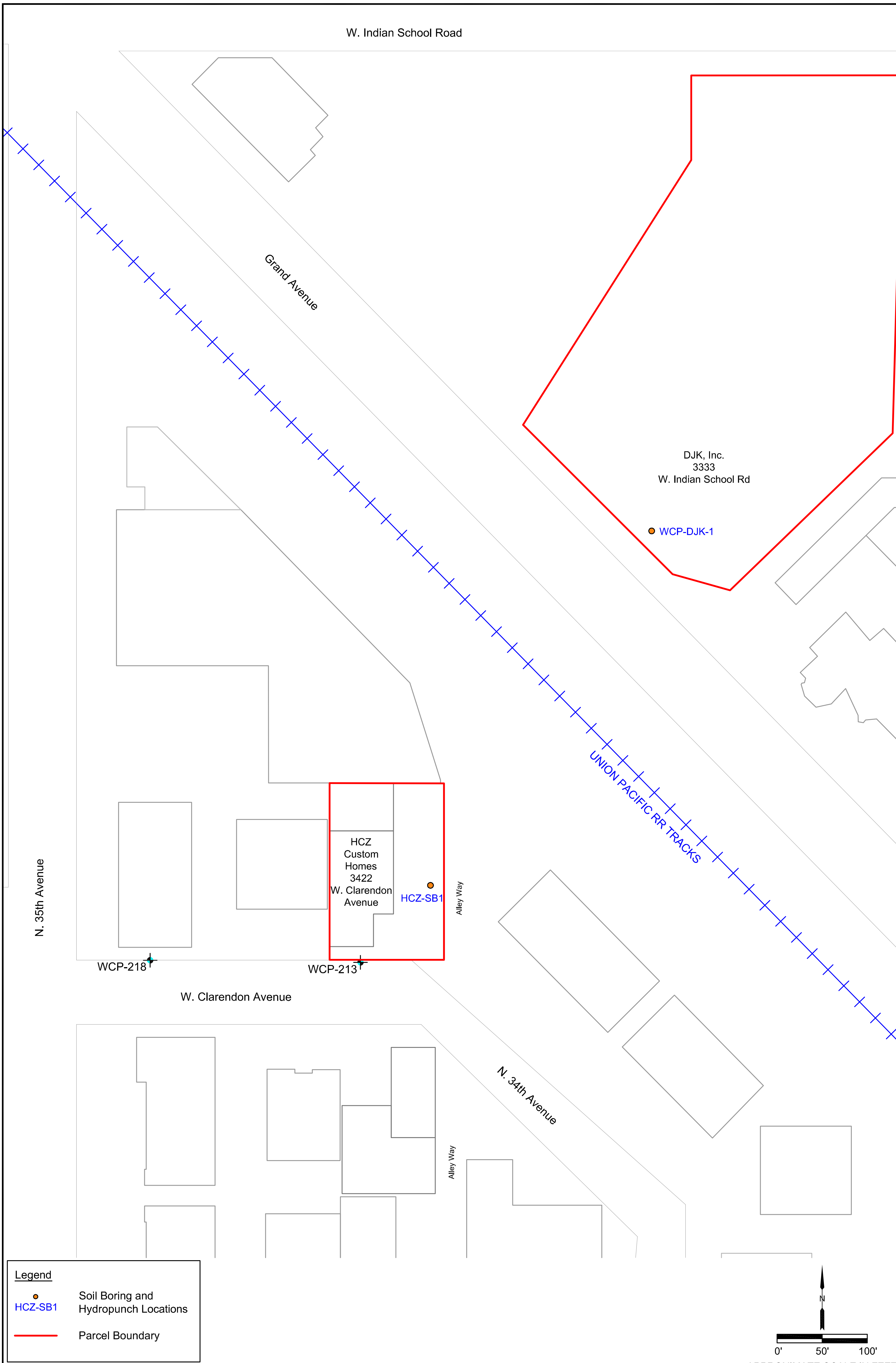


SOURCE: LOCUS TECHNOLOGIES, 2005

HYDRO GEO CHEM, INC.

SITE PLAN
FORMER PYRAMID INDUSTRIES
3700 N. 36th AVENUE, PHOENIX, AZ
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	5/20/15	JAA	5/20/15	2014042012A	18



HYDRO GEO CHEM, INC.

SOIL BORING AND HYDROPUNCH LOCATIONS
WEST CENTRAL PHOENIX,
NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
FJS	4/06/16	JAA	4/06/16	2014042030A	19

NCP-13-10	mg/m³
1,1,1-TCA	**0.198**
1,1-DCA	<0.00405
1,1-DCE	**0.0524**
Chloroform	<0.0488
PCE	<0.136
TCE	<0.0537

NCP-12-10	mg/m³
1,1,1-TCA	<0.00546
1,1-DCA	<0.00405
1,1-DCE	<0.00397
Chloroform	<0.00488
PCE	**0.0199**
TCE	<0.00537

Legend

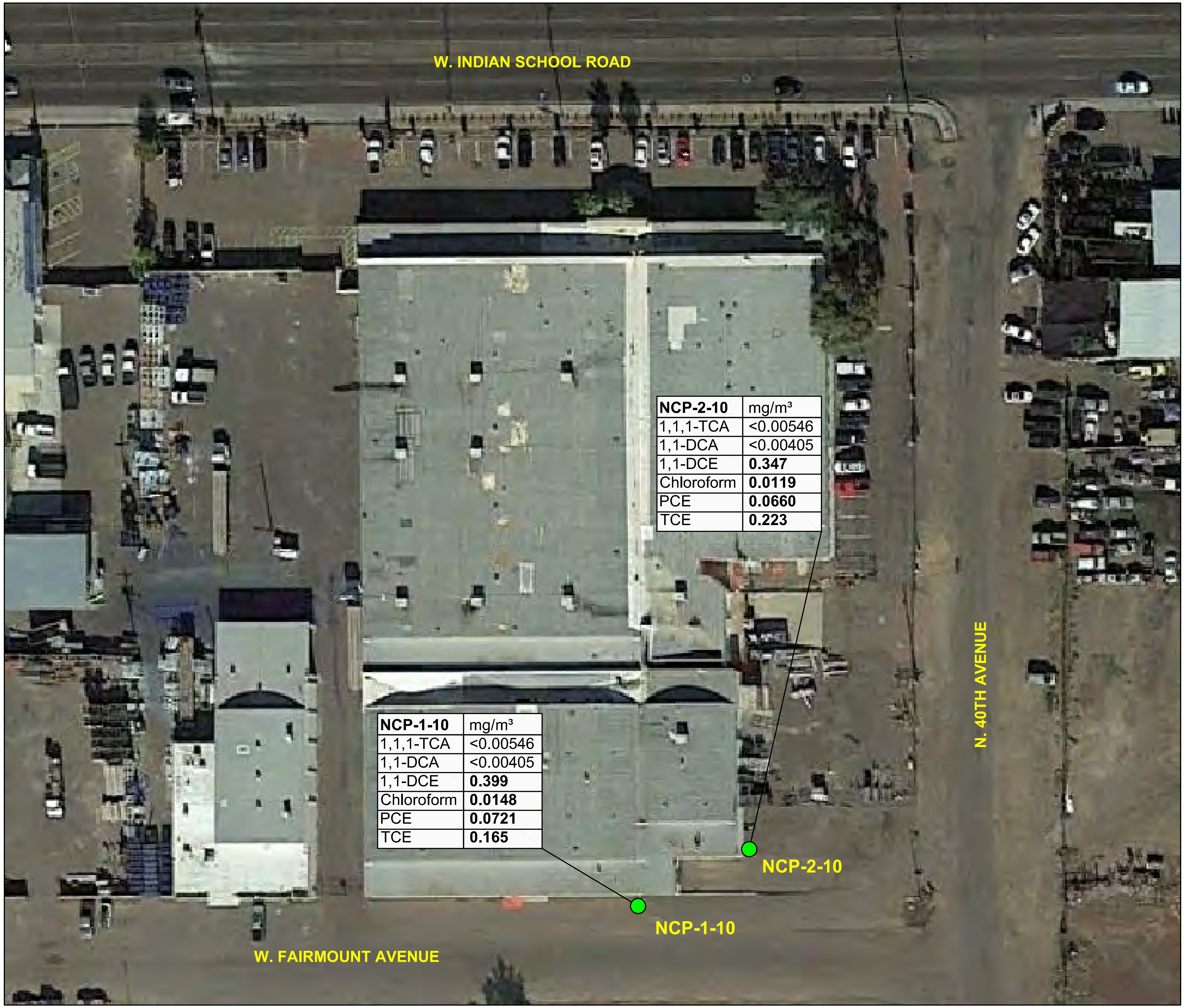
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

GOVWAY BUILDING - 3820 N 38TH AVENUE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042037A	20



NCP-2-10	mg/m³
1,1,1-TCA	<0.00546
1,1-DCA	<0.00405
1,1-DCE	**0.347**
Chloroform	**0.0119**
PCE	**0.0660**
TCE	**0.223**

NCP-1-10	mg/m³
1,1,1-TCA	<0.00546
1,1-DCA	<0.00405
1,1-DCE	**0.399**
Chloroform	**0.0148**
PCE	**0.0721**
TCE	**0.165**

N

0' 30' 60'

APPROXIMATE
SCALE IN FEET

Legend

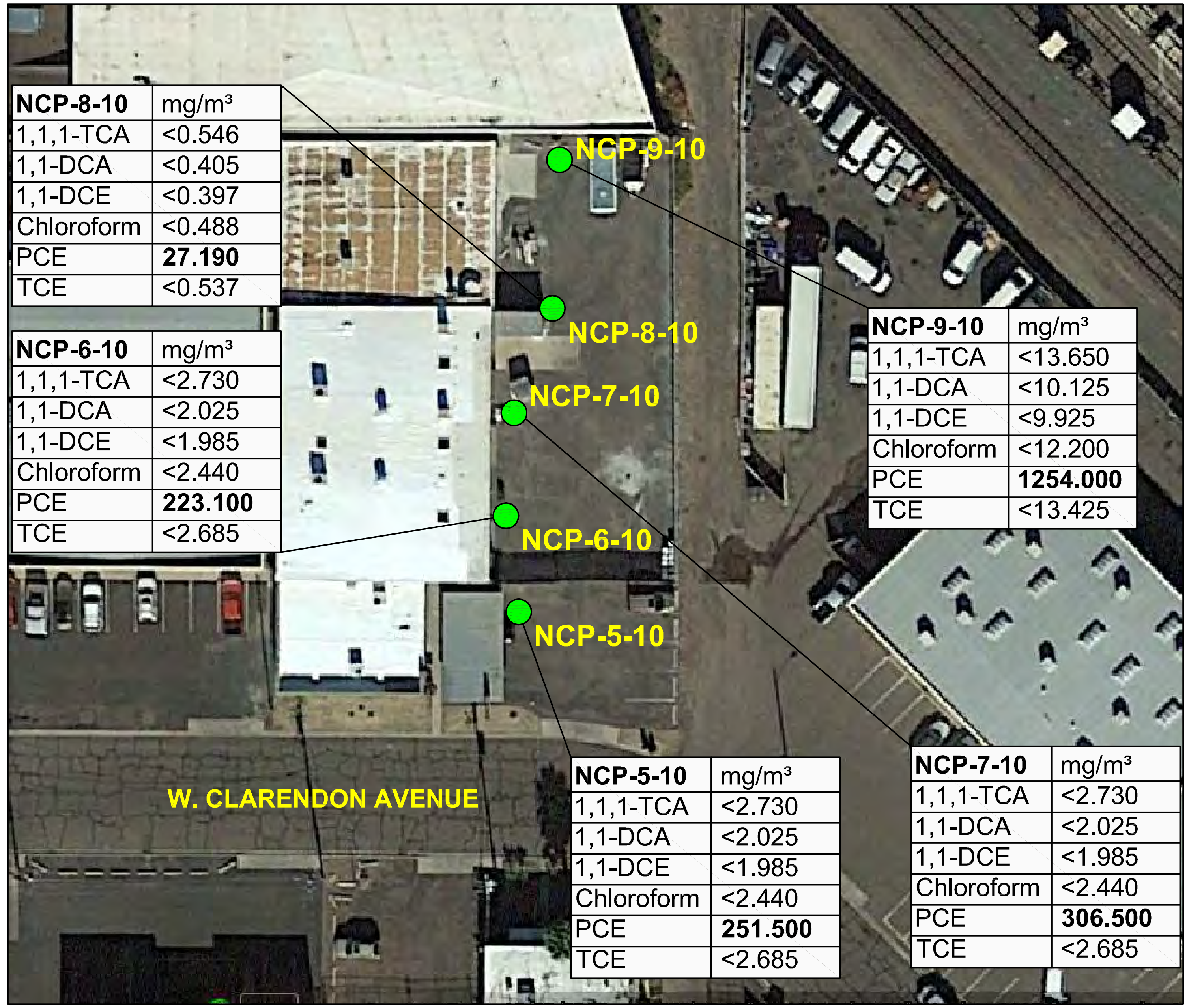
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

FORMER FACILITIES - 4001 W INDIAN SCHOOL RD
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042033A	21



NCP-8-10	mg/m³
1,1,1-TCA	<0.546
1,1-DCA	<0.405
1,1-DCE	<0.397
Chloroform	<0.488
PCE	**27.190**
TCE	<0.537

NCP-6-10	mg/m³
1,1,1-TCA	<2.730
1,1-DCA	<2.025
1,1-DCE	<1.985
Chloroform	<2.440
PCE	**223.100**
TCE	<2.685

NCP-9-10	mg/m³
1,1,1-TCA	<13.650
1,1-DCA	<10.125
1,1-DCE	<9.925
Chloroform	<12.200
PCE	**1254.000**
TCE	<13.425

NCP-5-10	mg/m³
1,1,1-TCA	<2.730
1,1-DCA	<2.025
1,1-DCE	<1.985
Chloroform	<2.440
PCE	**251.500**
TCE	<2.685

NCP-7-10	mg/m³
1,1,1-TCA	<2.730
1,1-DCA	<2.025
1,1-DCE	<1.985
Chloroform	<2.440
PCE	**306.500**
TCE	<2.685

N

0' 25' 50'

APPROXIMATE
SCALE IN FEET

Legend

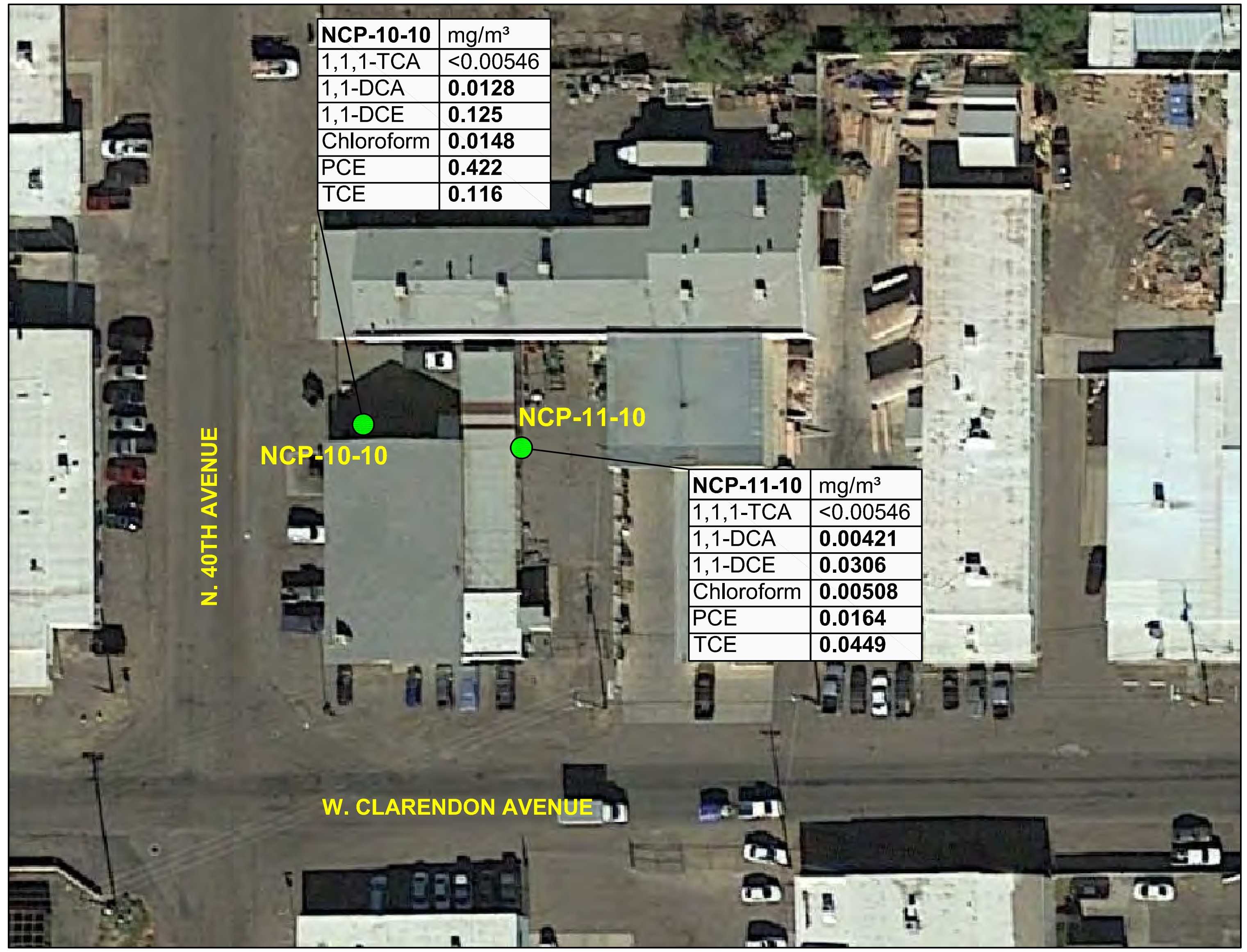
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

HCZ CUSTOM HOMES, INC. - 3422 W CLARENDON AVENUE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042035A	22



NCP-10-10	mg/m³
1,1,1-TCA	<0.00546
1,1-DCA	**0.0128**
1,1-DCE	**0.125**
Chloroform	**0.0148**
PCE	**0.422**
TCE	**0.116**

NCP-11-10	mg/m³
1,1,1-TCA	<0.00546
1,1-DCA	**0.00421**
1,1-DCE	**0.0306**
Chloroform	**0.00508**
PCE	**0.0164**
TCE	**0.0449**

N

0' 30' 60'

APPROXIMATE
SCALE IN FEET

Legend

1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

STEVENS ENGINEERING - 3946 W CLARENDON AVE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042036A	23

NCP-16-10	mg/m³
1,1,1-TCA	<0.00546
1,1-DCA	<0.00405
1,1-DCE	<0.00397
Chloroform	<0.00488
PCE	**0.281**
TCE	**0.0108**

NCP-17-10	mg/m³
1,1,1-TCA	<0.0137
1,1-DCA	<0.0101
1,1-DCE	**0.0141**
Chloroform	<0.0122
PCE	**0.526**
TCE	**0.0760**

N

0' 25' 50'

APPROXIMATE SCALE IN FEET

Legend

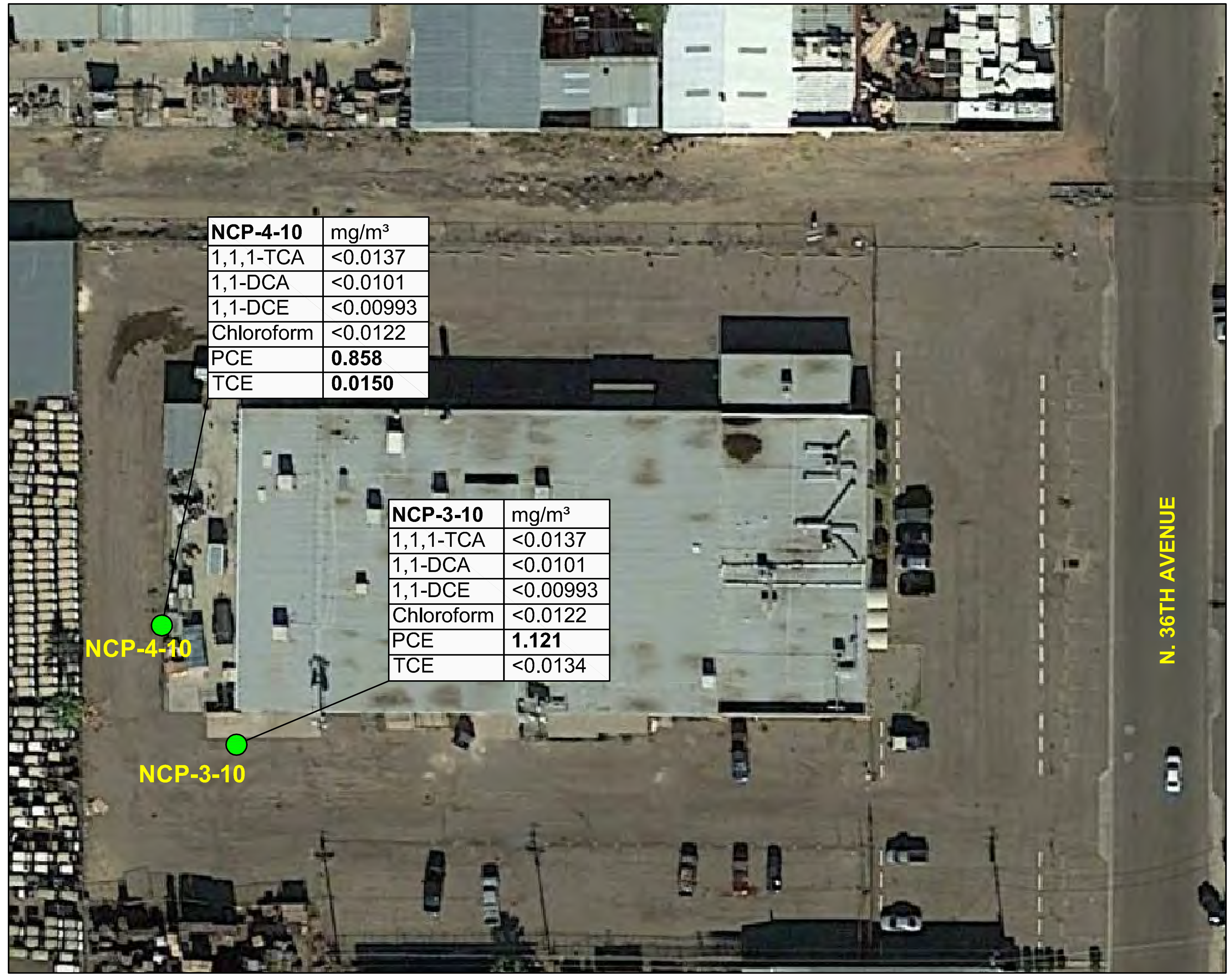
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

FORMER SOUTHWEST METALS - 3628 W CLARENDON AVENUE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042039A	24



NCP-4-10	mg/m³
1,1,1-TCA	<0.0137
1,1-DCA	<0.0101
1,1-DCE	<0.00993
Chloroform	<0.0122
PCE	**0.858**
TCE	**0.0150**

NCP-3-10	mg/m³
1,1,1-TCA	<0.0137
1,1-DCA	<0.0101
1,1-DCE	<0.00993
Chloroform	<0.0122
PCE	**1.121**
TCE	<0.0134

N

0' 30' 60'

APPROXIMATE SCALE IN FEET

Legend

1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

FORMER PYRAMID INDUSTRIES - 3648-3700 N 36TH AVENUE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042034A	25

NCP-15-10	mg/m³
1,1,1-TCA	<0.0546
1,1-DCA	<0.0405
1,1-DCE	<0.0397
Chloroform	<0.0488
PCE	**1.833**
TCE	**0.275**

NCP-14-10	mg/m³
1,1,1-TCA	<0.0273
1,1-DCA	<0.0203
1,1-DCE	**0.211**
Chloroform	**0.0566**
PCE	**0.407**
TCE	**1.221**

N

0' 25' 50'

APPROXIMATE SCALE IN FEET

Legend

1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

FORMER OSBORN PRODUCTS - 3702 W CLARENDON AVENUE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042038A	26

NCP-18-10	mg/m³
1,1,1-TCA	<0.546
1,1-DCA	<0.405
1,1-DCE	<0.397
Chloroform	<0.488
PCE	**65.290**
TCE	<0.537

NCP-19-10	mg/m³
1,1,1-TCA	<0.0137
1,1-DCA	<0.0101
1,1-DCE	<0.00993
Chloroform	<0.0122
PCE	**0.0342**
TCE	<0.0134

N

0' 30' 60'

APPROXIMATE SCALE IN FEET

Legend

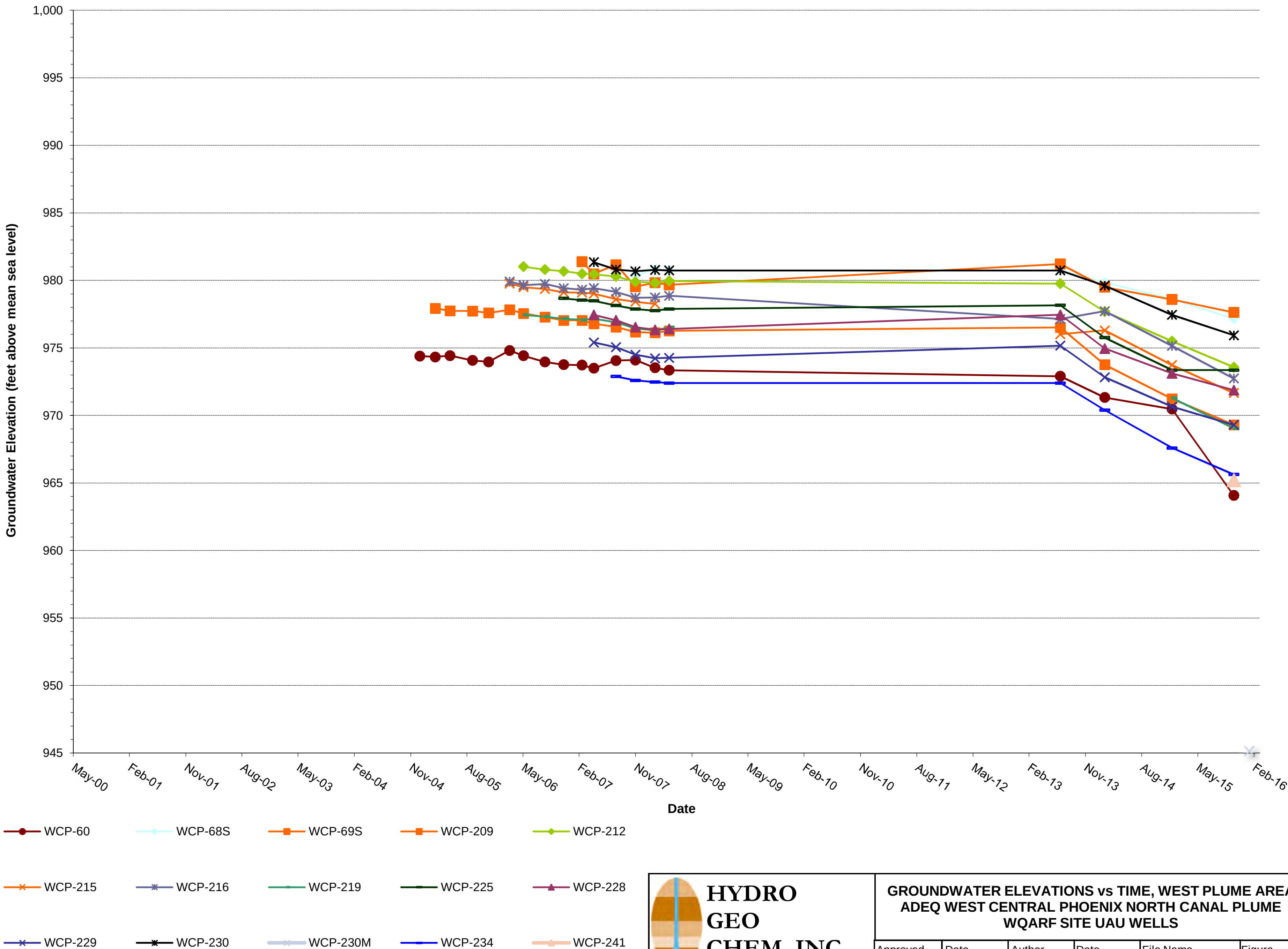
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene

Note: Bold indicates detected quantity.

HYDRO GEO CHEM, INC.

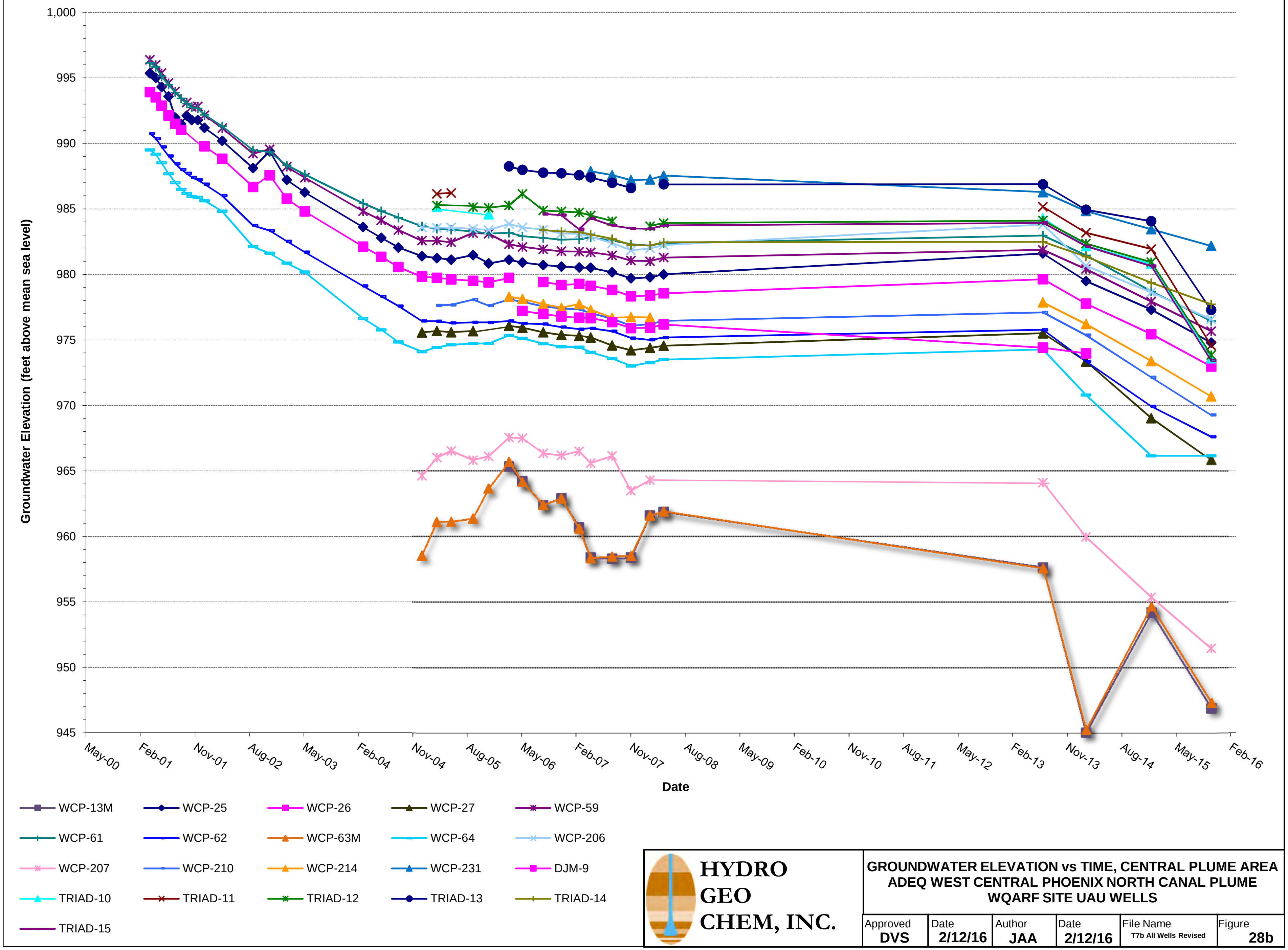
FORMER TRIAD TRUCKING COMPANY- 3883 N 36TH AVENUE
2016 SUPPLEMENT SOIL VAPOR INVESTIGATION
CHLORINATED VOCs
WEST CENTRAL PHOENIX, NORTH CANAL PLUME WQARF SITE

Approved	Date	Author	Date	File Name	Figure
DVS	12/07/16	JAA	12/07/16	2014042040A	27

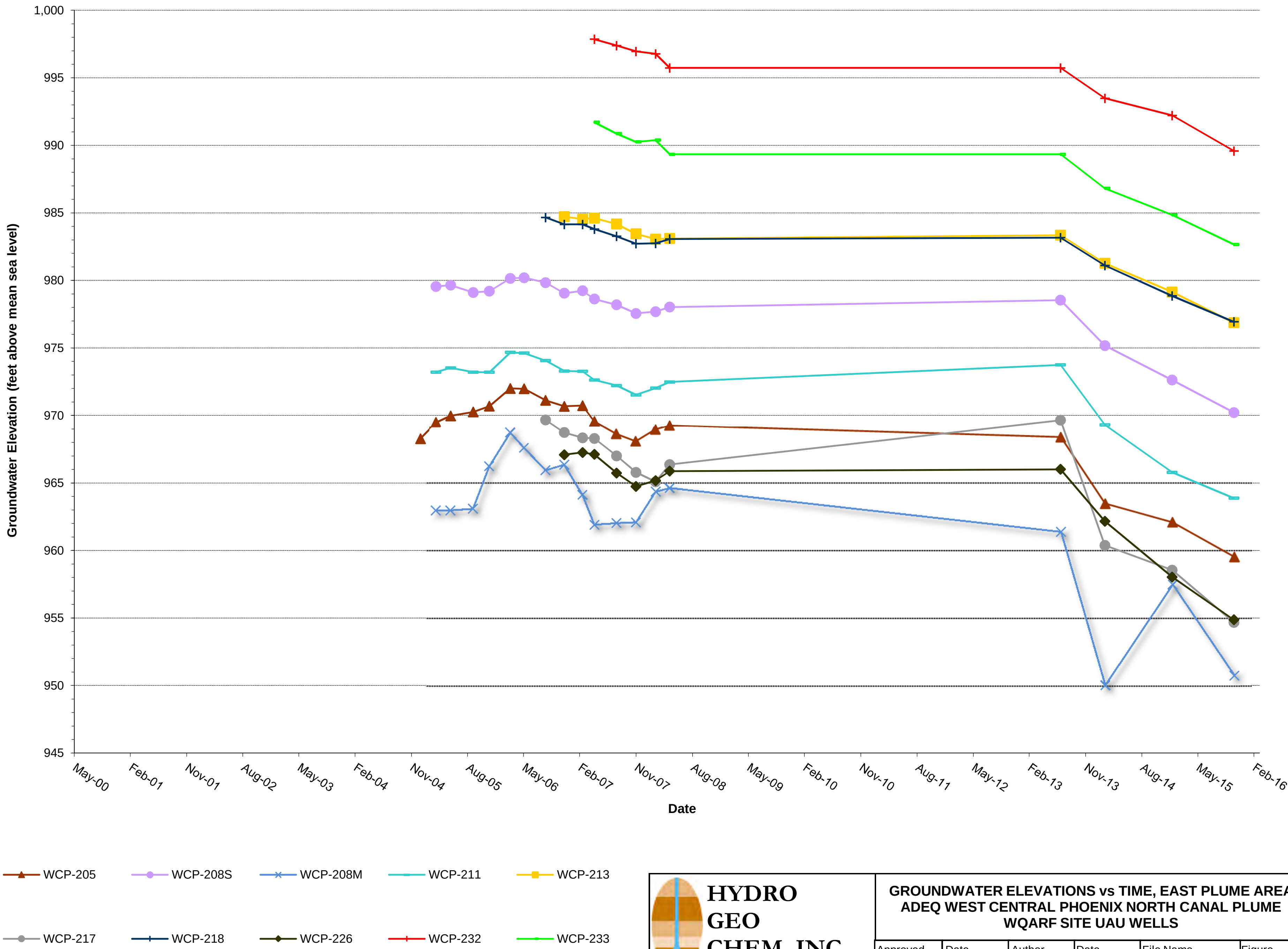


HYDRO GEO CHEM, INC.	GROUNDWATER ELEVATIONS vs TIME, WEST PLUME AREA ADEQ WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE UAU WELLS					
	Approved DVS	Date 2/12/16	Author JAA	Date 2/12/16	File Name T7b All Wells Revised	Figure 28a

H:\2014042.10 ADEQ WCP NCP FY16\GW Monitoring\4Q2015\Tables\Table 7b All Wells Graph: WestPlumeWells



HYDRO GEO CHEM, INC.	GROUNDWATER ELEVATION vs TIME, CENTRAL PLUME AREA ADEQ WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE UAU WELLS					
	Approved DVS	Date 2/12/16	Author JAA	Date 2/12/16	File Name T7b All Wells Revised	Figure 28b

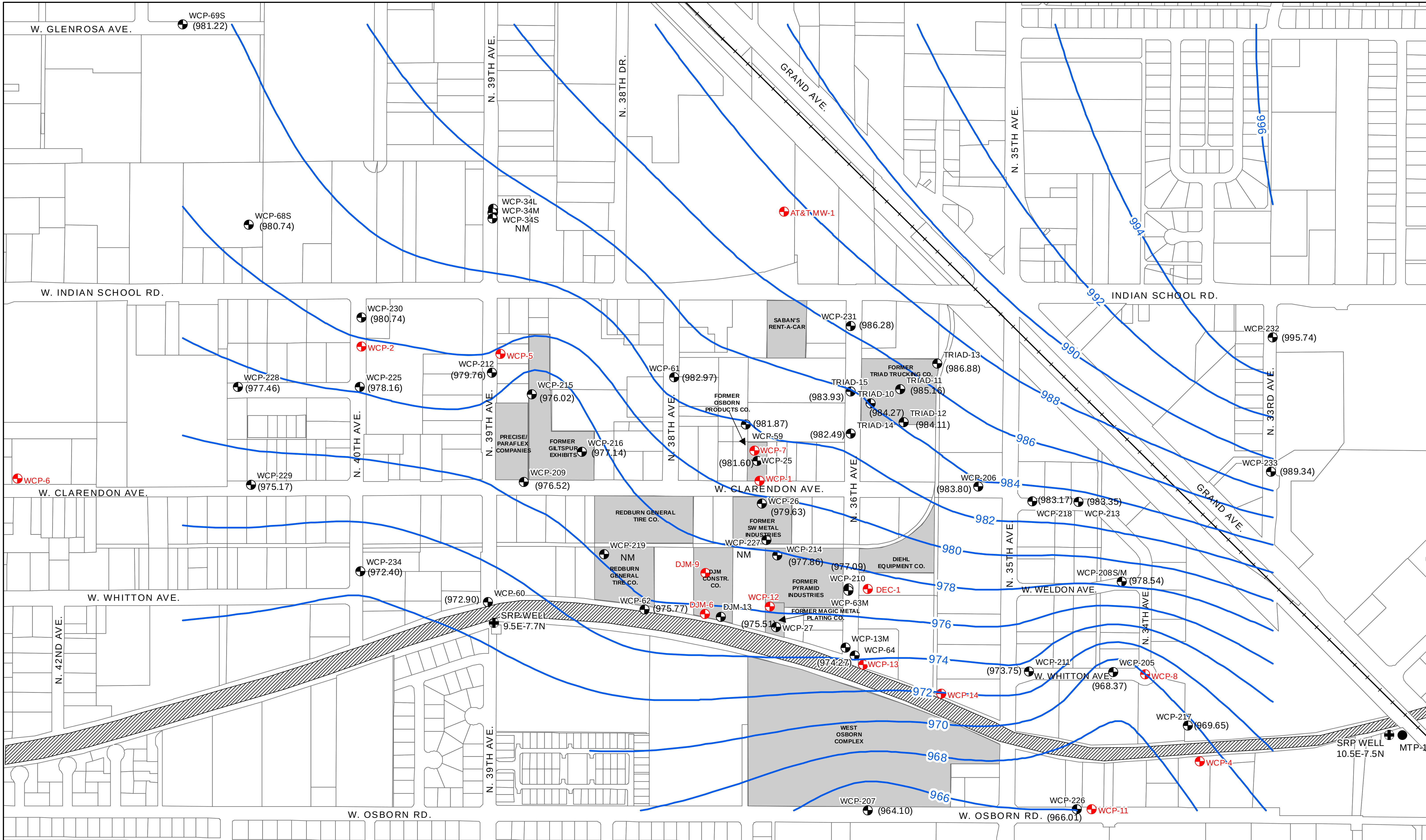


HYDRO GEO CHEM, INC.

GROUNDWATER ELEVATIONS vs TIME, EAST PLUME AREA
ADEQ WEST CENTRAL PHOENIX NORTH CANAL PLUME
WQARF SITE UAU WELLS

Approved	Date	Author	Date	File Name	Figure
DVS	2/12/16	JAA	2/12/16	T7b All Wells Revised	28c

H:\2014042.10 ADEQ WCP NCP FY16\GW Monitoring\4Q2015\Tables\Table 7b All Wells Graph: EastPlumeWells



WCP-59 (981.87) Monitoring Well with Well ID and Groundwater Elevation in Feet Above Mean Sea Level (ft amsl)

WCP-12 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Estimated Groundwater Elevation Contours

Irrigation Canal

Railroad Tracks

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

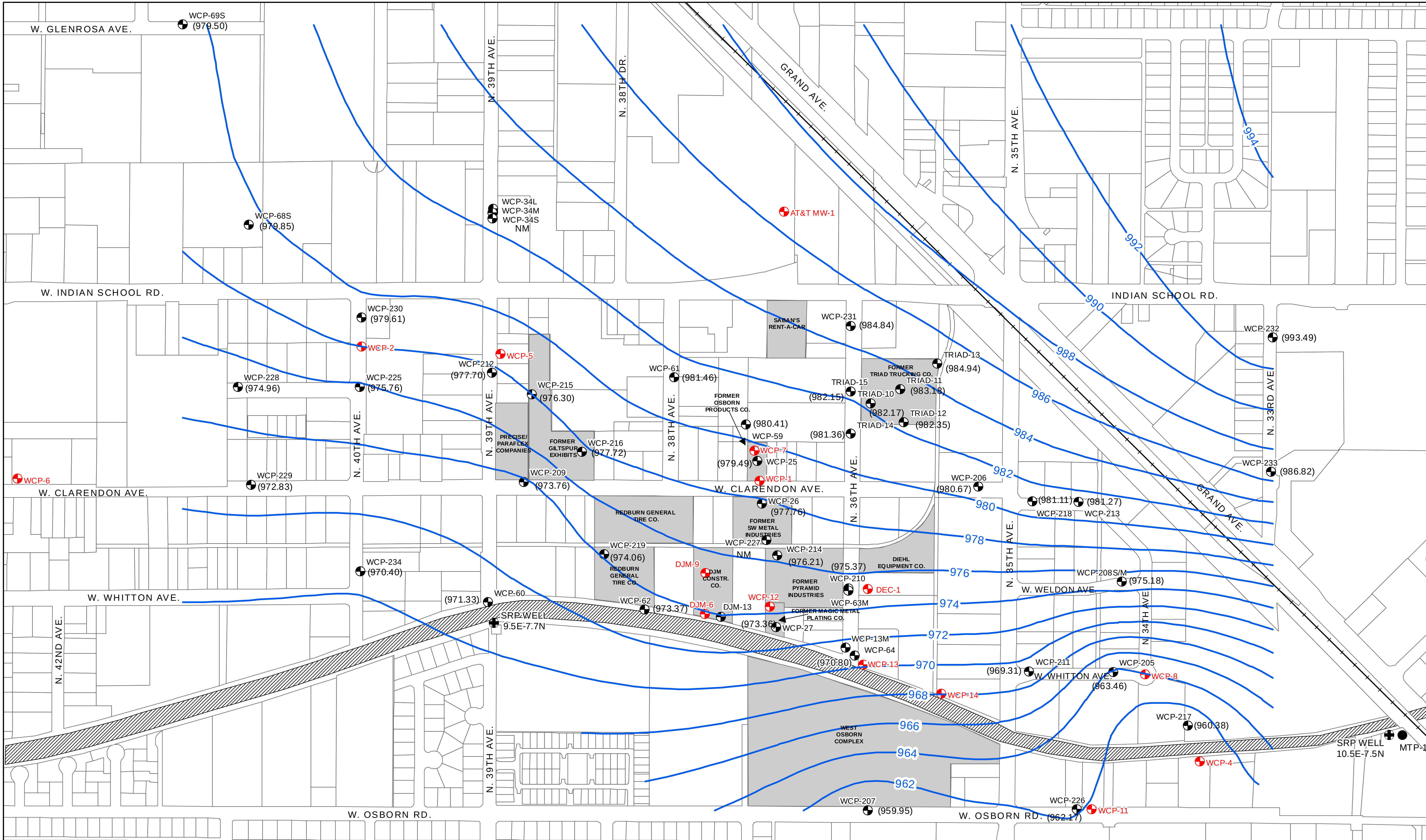
Note: DJM-13, WCP-13M, WCP-63M, WCP-34L, WCP-34M, WCP-208M were not used for contouring.
NM = not measured

N

HYDRO GEO CHEM, INC.

GROUNDWATER ELEVATIONS FOR JULY 2013
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300801G	29



- WCP-59 (980.41) Monitoring Well with Well ID and Groundwater Elevation in Feet Above Mean Sea Level (ft amsl)
- WCP-12 Monitoring Well with Well ID (abandoned or dry)
- SRP Production Well
- Other Production Well
- Estimated Groundwater Elevation Contours
- Irrigation Canal
- Railroad Tracks

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500
APPROXIMATE SCALE IN FEET

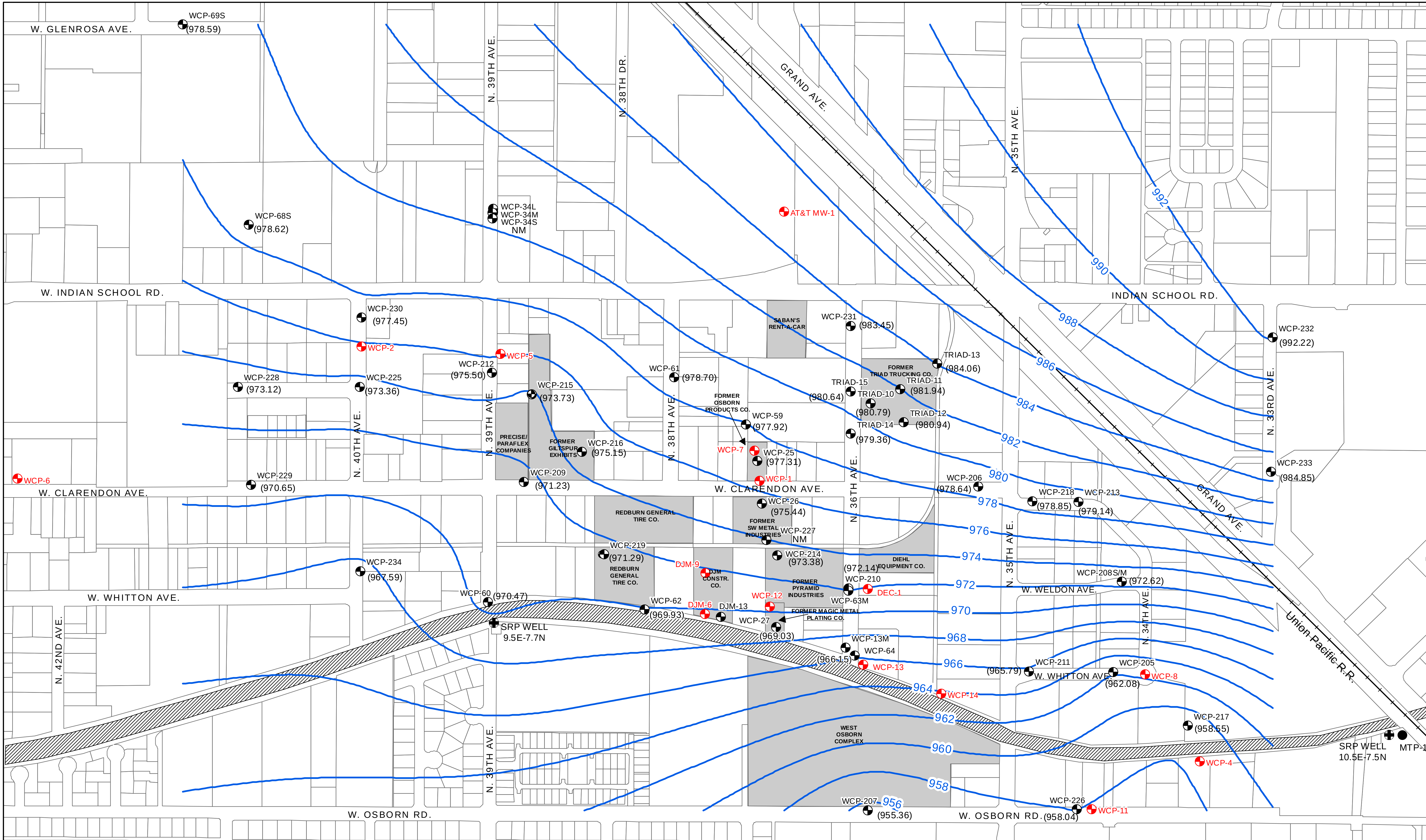
Note: DJM-13, WCP-13M, WCP-63M, WCP-34L, WCP-34M, WCP-208M were not used for contouring.
NM = not measured

N

HYDRO GEO CHEM, INC.

GROUNDWATER ELEVATIONS FOR FEBRUARY 2014
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300808G	30



WCP-59 (977.92) Monitoring Well with Well ID and Groundwater Elevation in Feet Above Mean Sea Level (ft amsl)

WCP-12 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Estimated Groundwater Elevation Contours

Irrigation Canal

Railroad Tracks

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

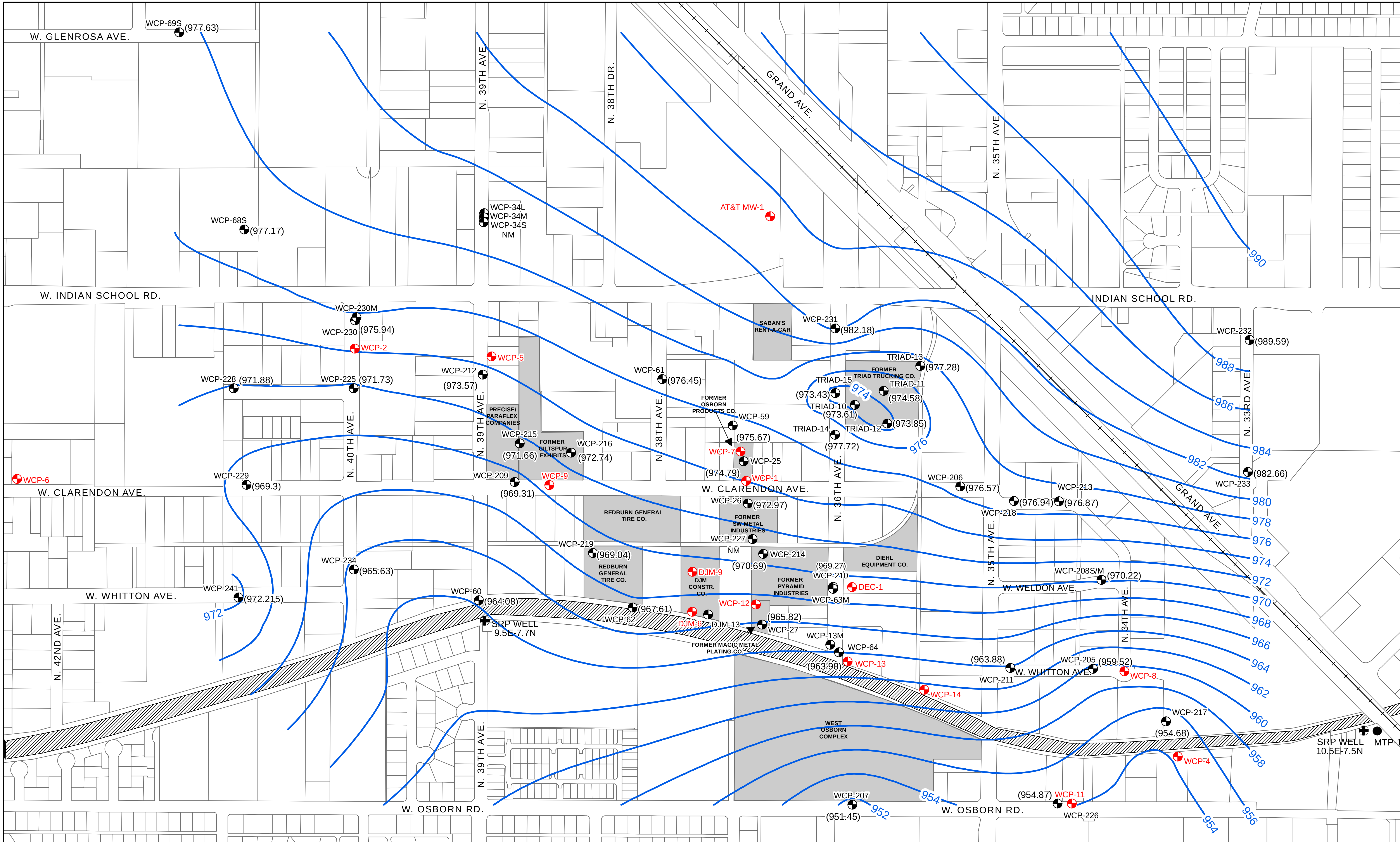
Note: DJM-13, WCP-13M, WCP-63M, WCP-34L, WCP34M, WCP-208M were not used for contouring.
NM = not measured

N

HYDRO GEO CHEM, INC.

GROUNDWATER ELEVATIONS FOR FEBRUARY 2015
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201404208G.mxd	31



WCP-59 (975.67)	Monitoring Well with Well ID and Groundwater Elevation in Feet Above Mean Sea Level (ft amsl)	✚	SRP Production Well
WCP-12	Monitoring Well with Well ID (abandoned or dry)	●	Other Production Well
			Irrigation Canal
			Railroad Tracks

Estimated Groundwater Elevation Contours

Note: DJM-13, WCP-13M, WCP-63M, WCP-34L, WCP-34M, WCP-208M, and WCP-230M were not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
NM = not measured

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

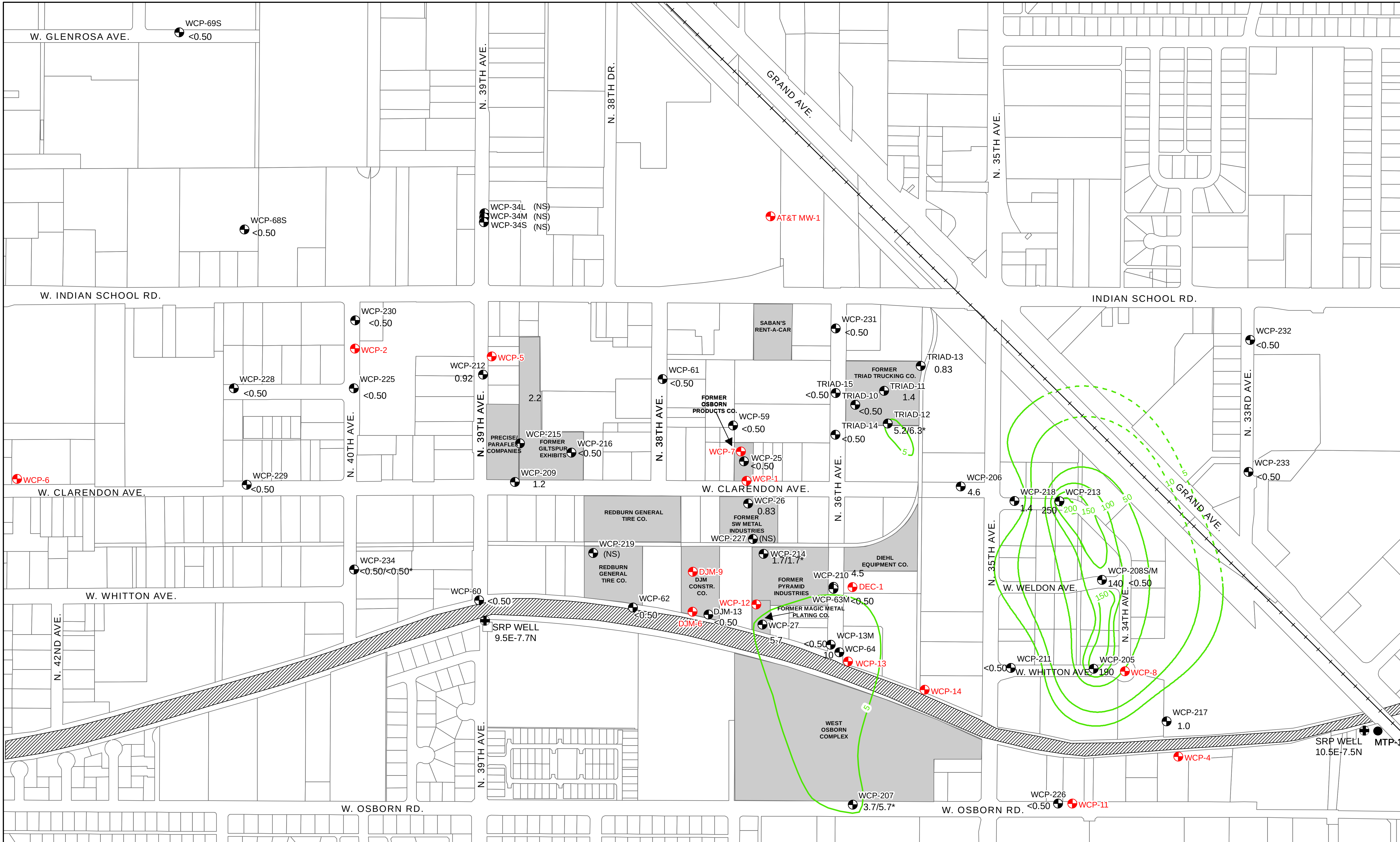
0 250 500
APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

GROUNDWATER ELEVATIONS FOR NOVEMBER 2015
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
MJB	03/14/16	2014042029G	32



WCP-205 86 — Monitoring Well with Well ID and PCE Concentration (ug/L)

DEC-1 — Monitoring Well with Well ID (abandoned or dry)

✚ SRP Production Well

Estimated PCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

● Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
(NS) = not sampled

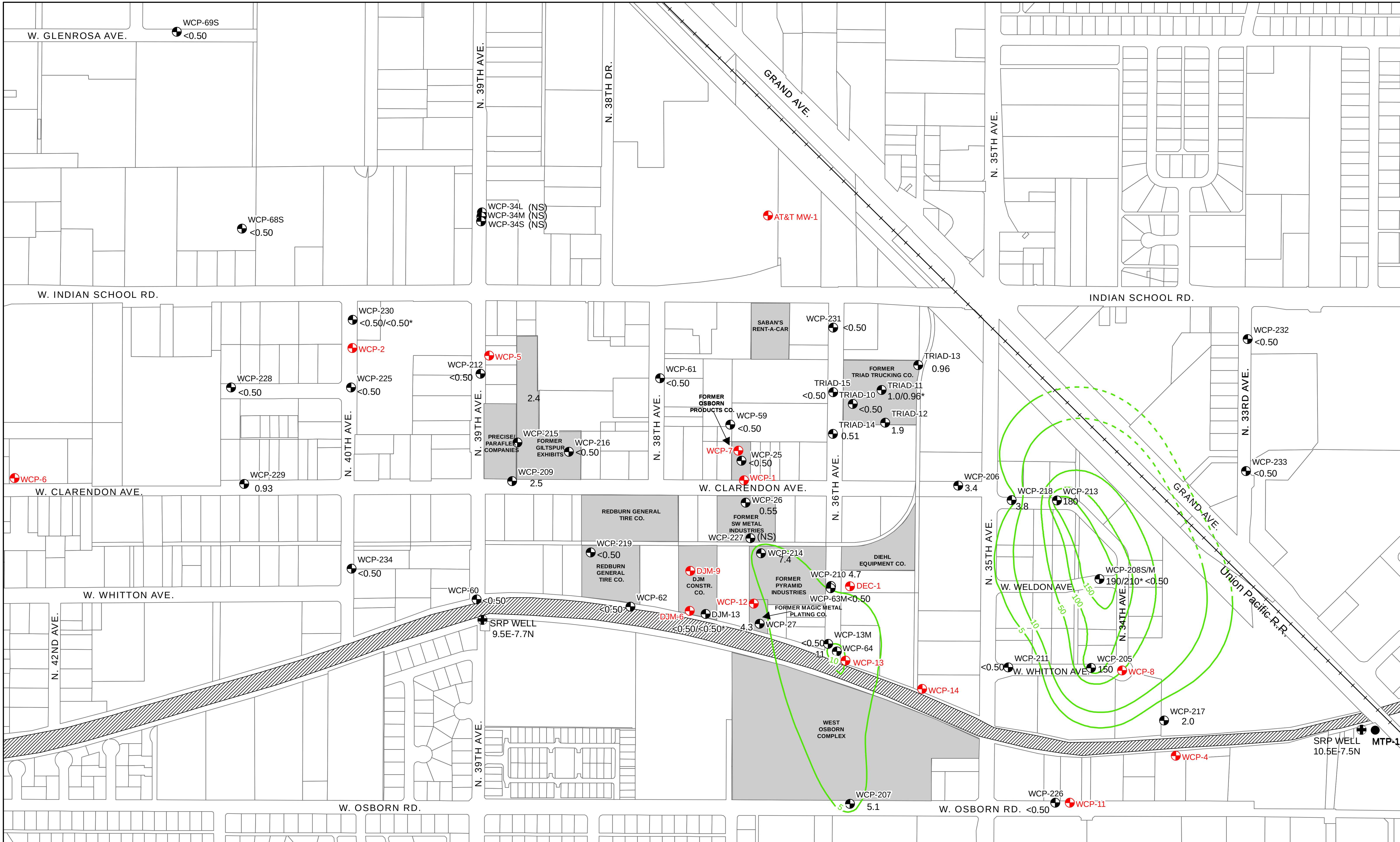
ADEQ Aquifer Water Quality Standard = 5 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER PCE CONCENTRATIONS FOR JULY 2013
SAMPLING EVENT, WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	10/03/13	201300803G	33



WCP-205 150 Monitoring Well with Well ID and PCE Concentration (ug/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated PCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
(NS) = not sampled

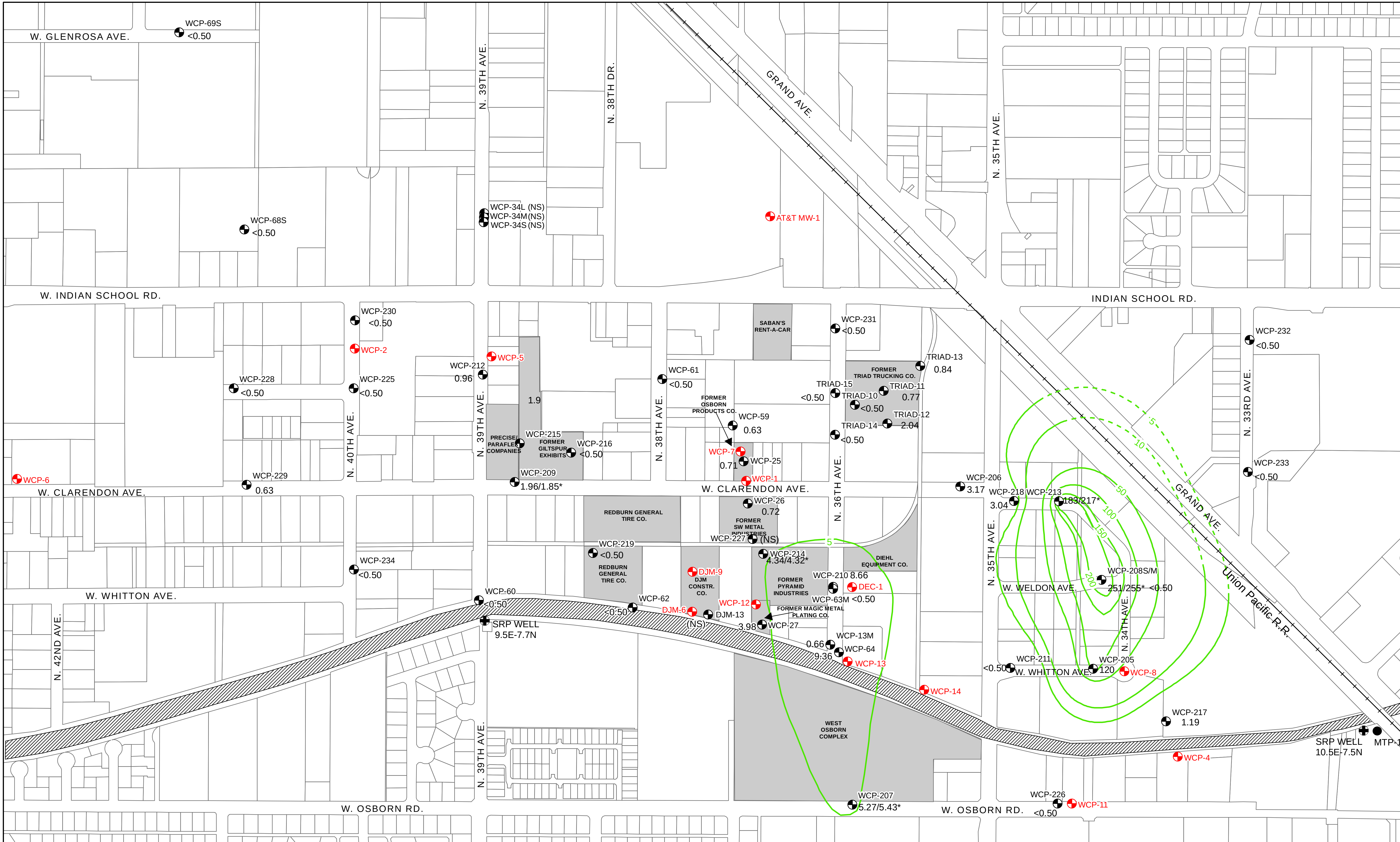
ADEQ Aquifer Water Quality Standard = 5 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER PCE CONCENTRATIONS FOR FEBRUARY 2014 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300809G	34



WCP-205 120 — Monitoring Well with Well ID and PCE Concentration (ug/L)

DEC-1 — Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated PCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
(NS) = not sampled

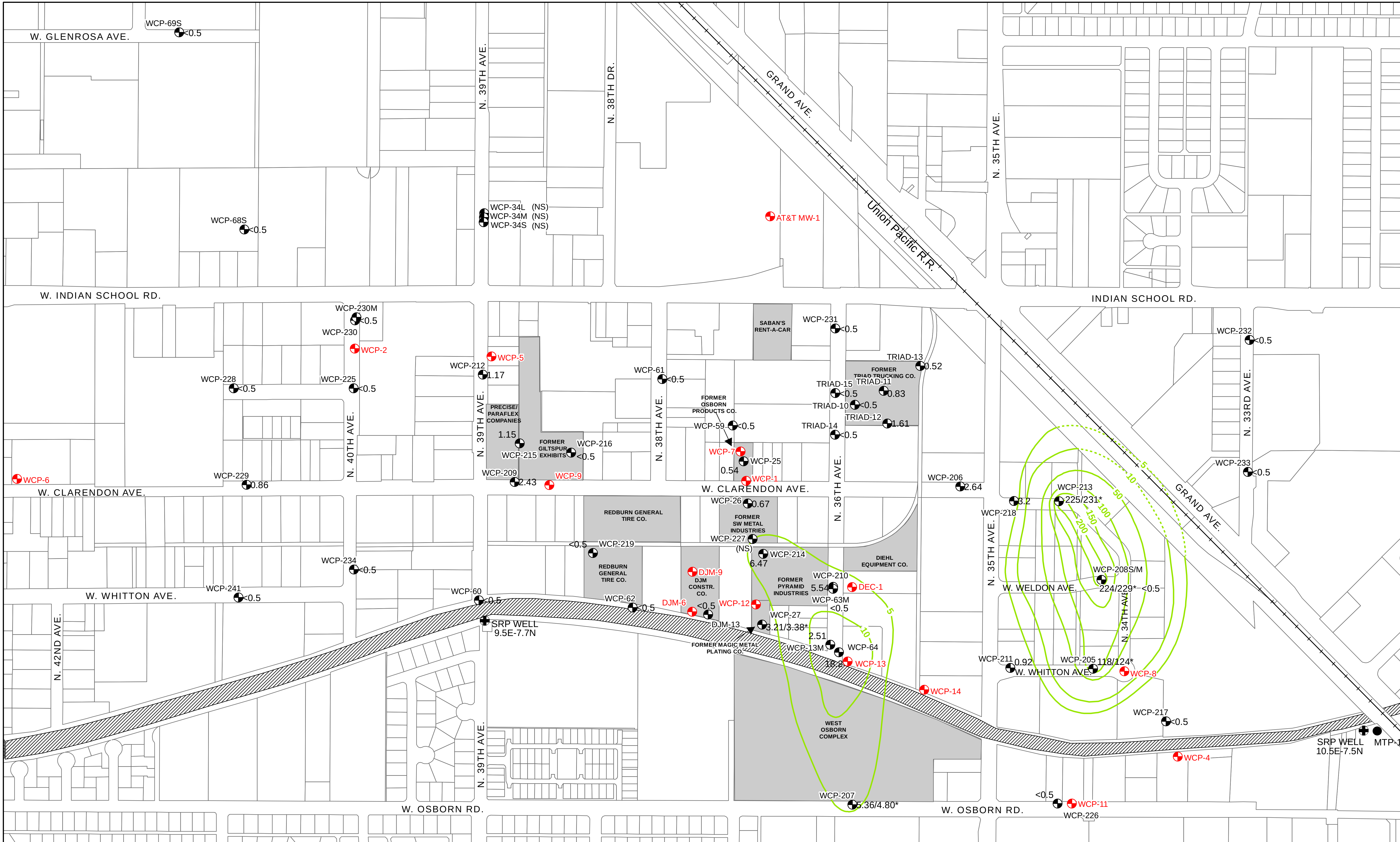
ADEQ Aquifer Water Quality Standard = 5 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER PCE CONCENTRATIONS FOR FEBRUARY 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201404209G	35



WCP-59 <0.5 Monitoring Well with Well ID and PCE Concentration (µg/L)

WCP-12 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

Estimated PCE Concentration Contours (µg/L)

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

Note: * indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled
ADEQ Aquifer Water Quality Standard = 5 µg/L

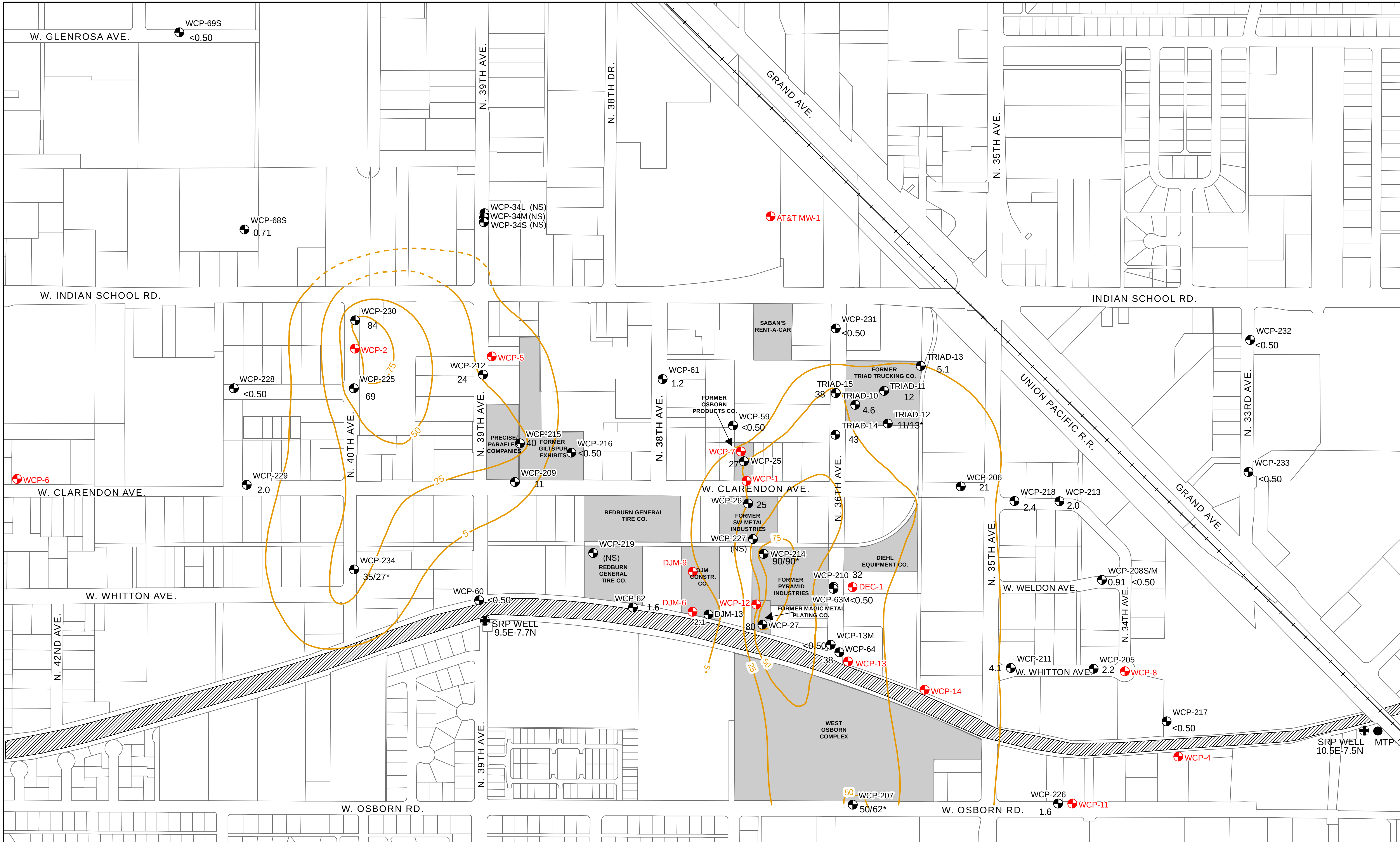
0 250 500
APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

GROUNDWATER PCE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	03/08/17	2014042030G	36



WCP-205 2.2 Monitoring Well with Well ID and TCE Concentration (ug/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated TCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500
APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

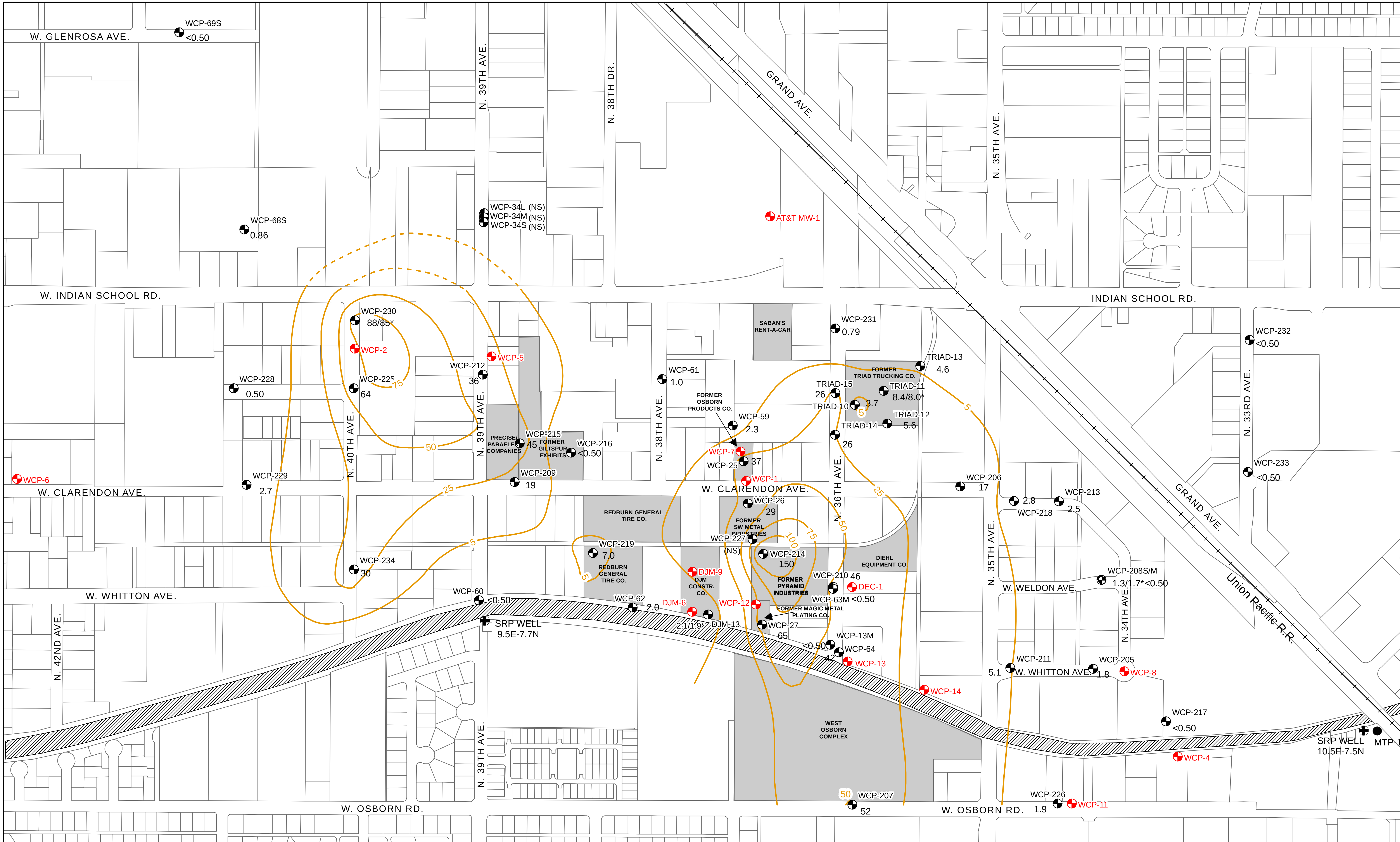
ADEQ Aquifer Water Quality Standard = 5 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER TCE CONCENTRATIONS FOR JULY 2013 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300804G	37



WCP-205 1.8 — Monitoring Well with Well ID and TCE Concentration (ug/L)

DEC-1 — Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated TCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

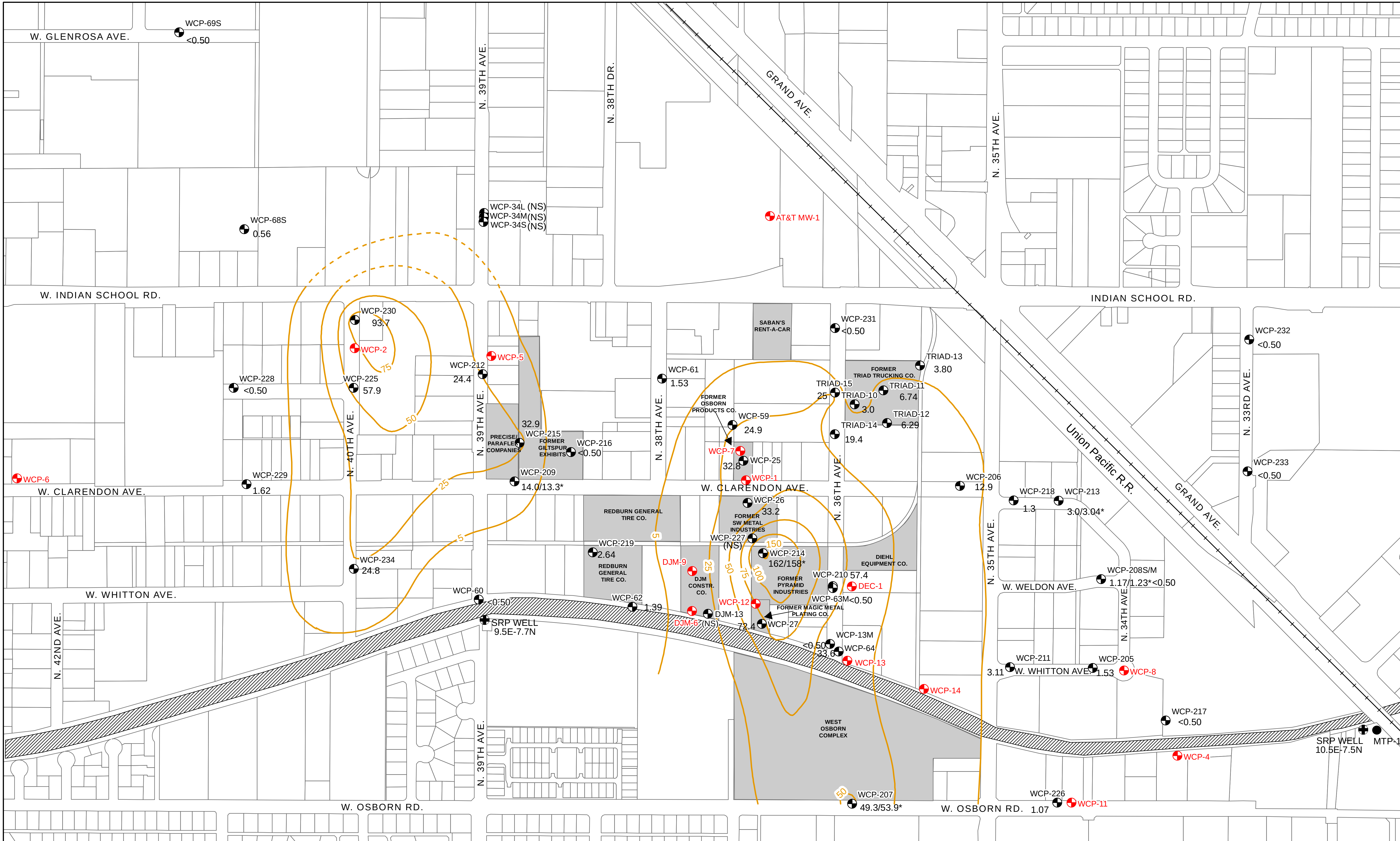
ADEQ Aquifer Water Quality Standard = 5 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER TCE CONCENTRATIONS FOR FEBRUARY 2014 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300810G	38



WCP-205 1.53 — Monitoring Well with Well ID and TCE Concentration (ug/L)

DEC-1 — Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated TCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500
APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

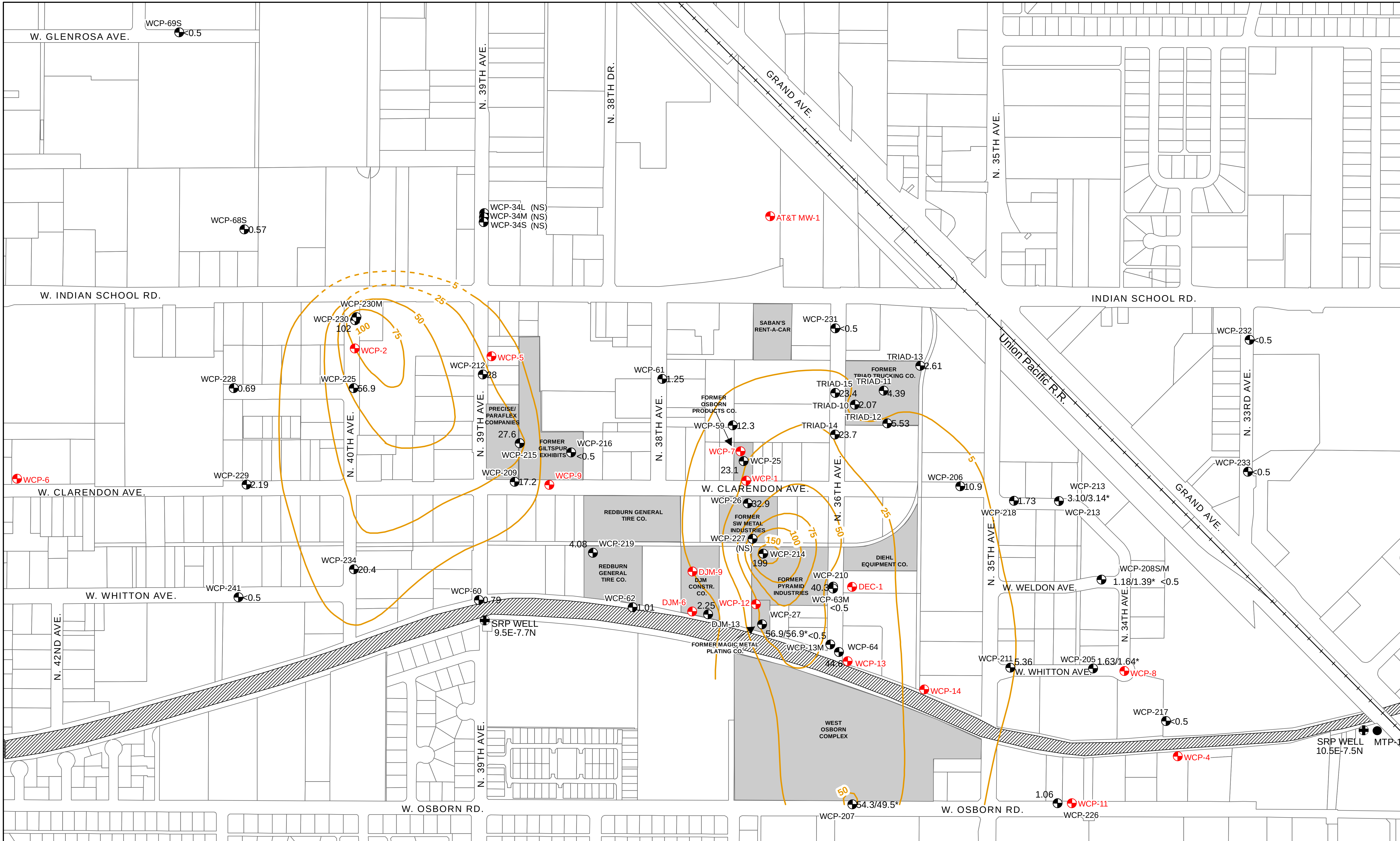
ADEQ Aquifer Water Quality Standard = 5 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER TCE CONCENTRATIONS FOR FEBRUARY 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201404210G	39



WCP-59 12.3 Monitoring Well with Well ID and TCE Concentration (µg/L)

WCP-12 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

Estimated TCE Concentration Contours (µg/L)

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

Note: * indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled
ADEQ Aquifer Water Quality Standard = 5 µg/L

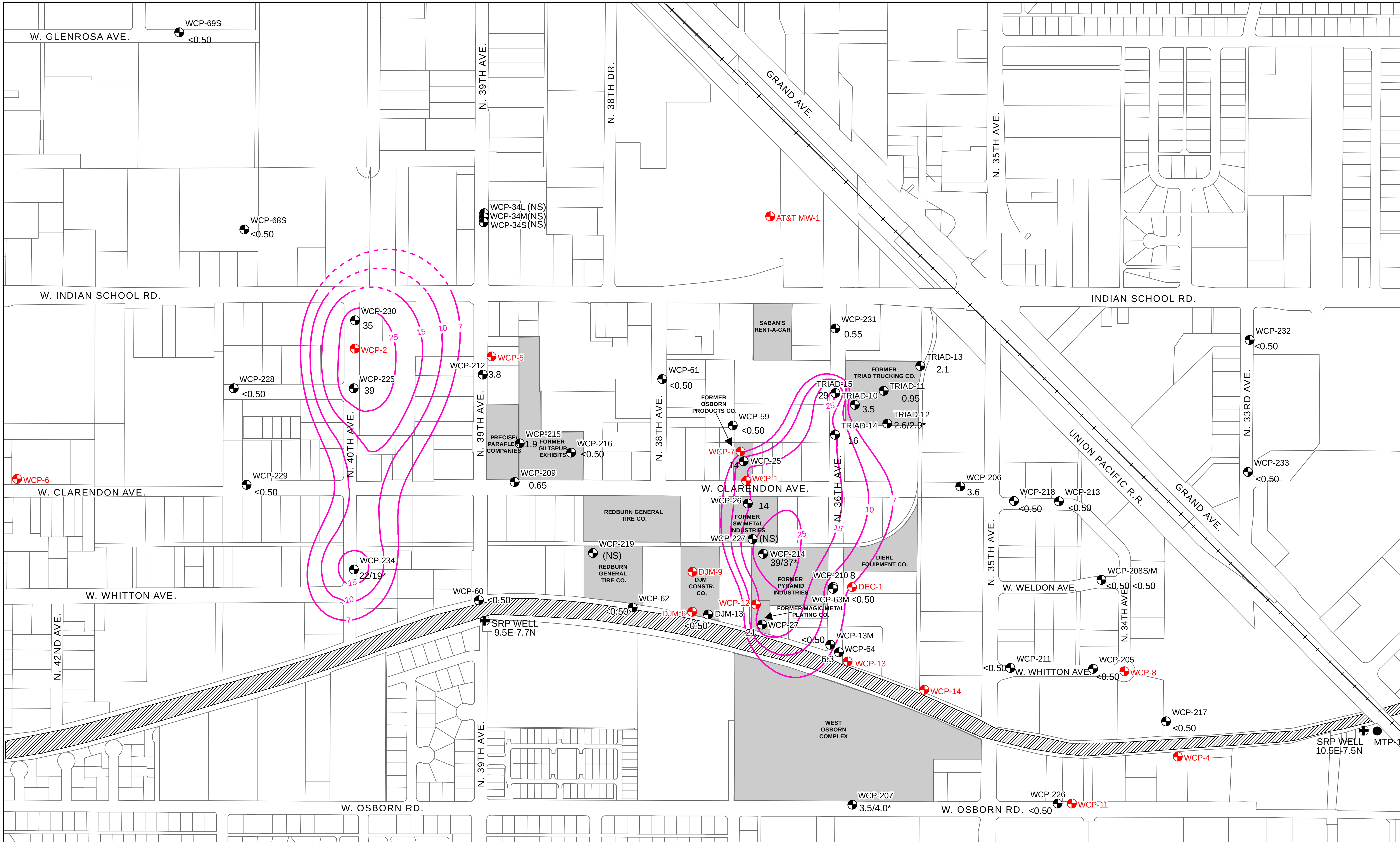
0 250 500
APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

GROUNDWATER TCE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	03/08/17	2014042031G	40



WCP-205 <0.50 Monitoring Well with Well ID and 1,1-DCE Concentration (ug/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated 1,1-DCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

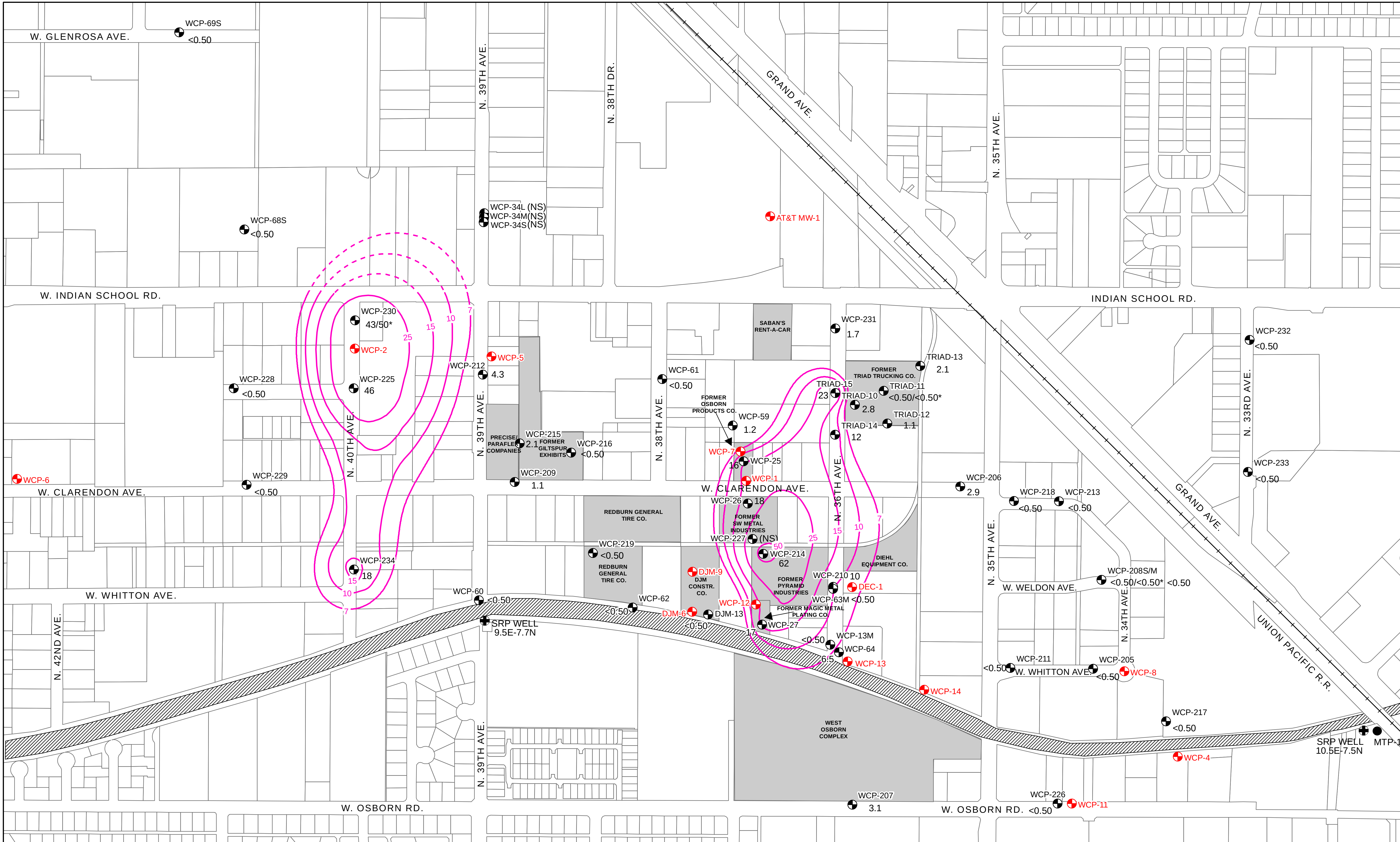
NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

ADEQ Aquifer Water Quality Standard = 7 µg/L

HYDRO GEO CHEM, INC.

GROUNDWATER 1,1-DCE CONCENTRATIONS FOR JULY 2013 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300806G	41



WCP-205 <0.50 Monitoring Well with Well ID and 1,1-DCE Concentration (ug/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated 1,1-DCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

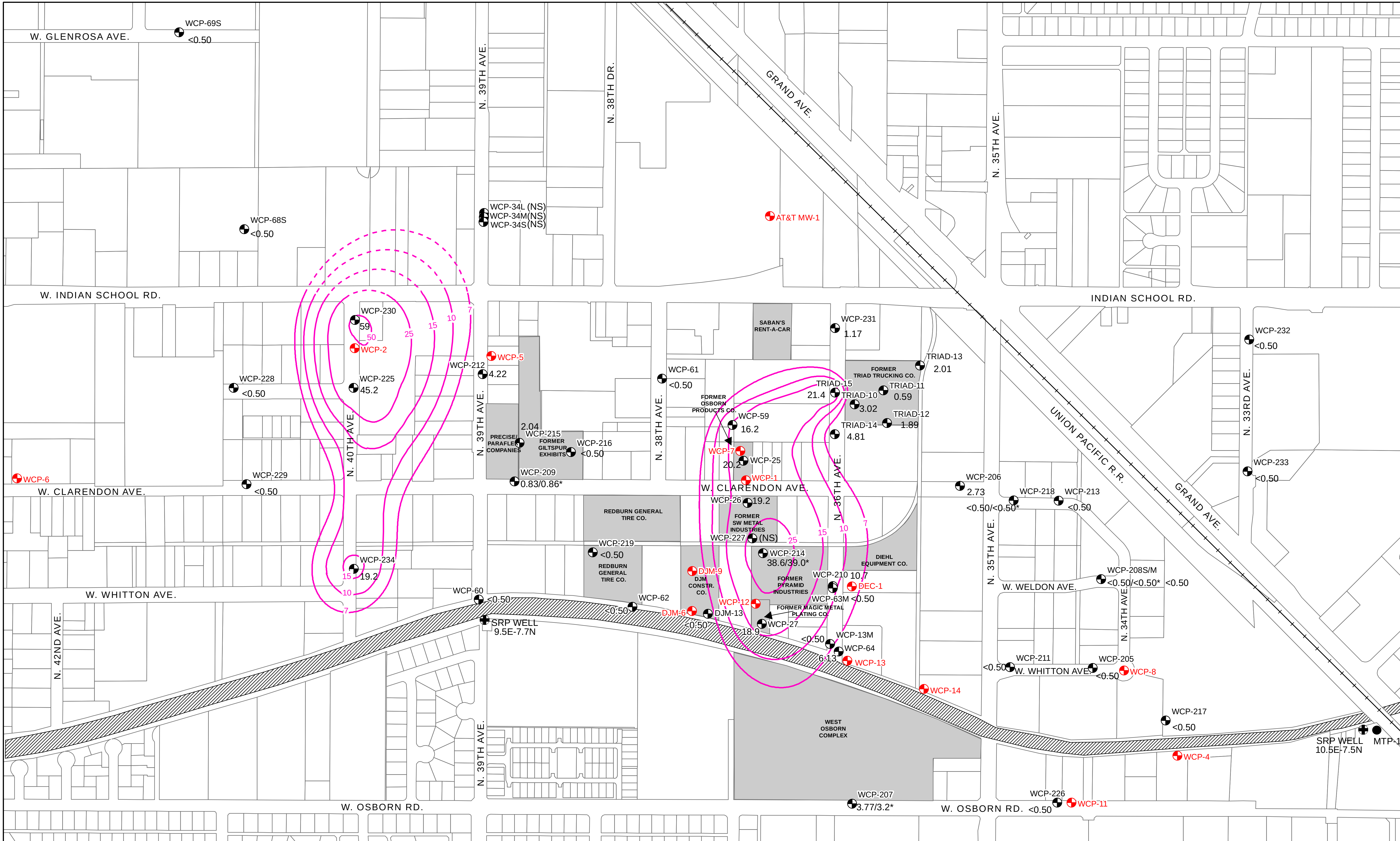
ADEQ Aquifer Water Quality Standard = 7 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER 1,1-DCE CONCENTRATIONS FOR FEBRUARY 2014 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300812G	42



WCP-205 <0.50 — Monitoring Well with Well ID and 1,1-DCE Concentration (ug/L)

DEC-1 — Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated 1,1-DCE Concentration Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

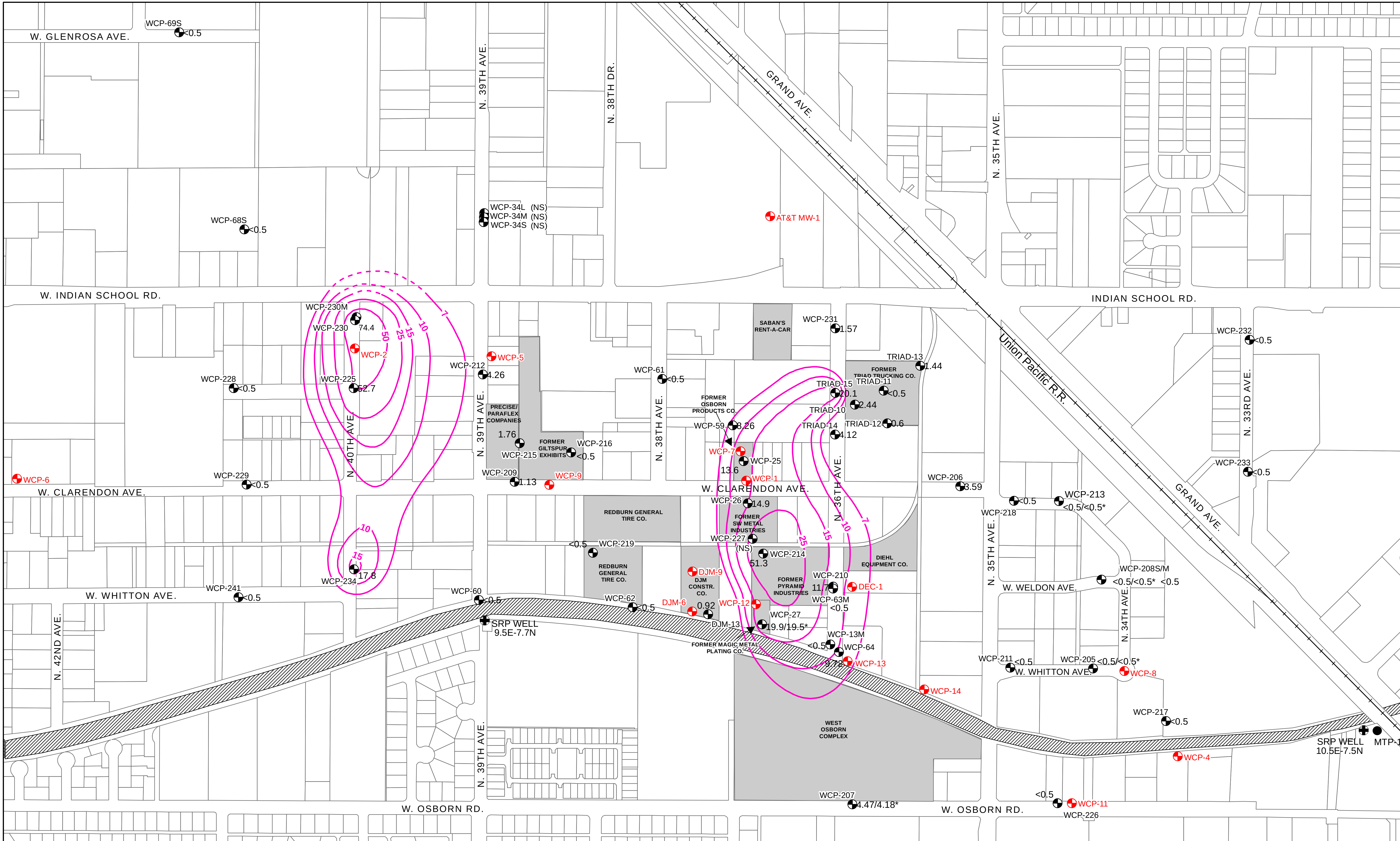
ADEQ Aquifer Water Quality Standard = 7 µg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER 1,1-DCE CONCENTRATIONS FOR FEBRUARY 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201404212G	43



WCP-59 8.26 — Monitoring Well with Well ID and 1,1-DCE Concentration (µg/L)

WCP-12 — Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

Estimated 1,1-DCE Concentration Contours (µg/L)

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

Note: * indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled
ADEQ Aquifer Water Quality Standard = 7 µg/L

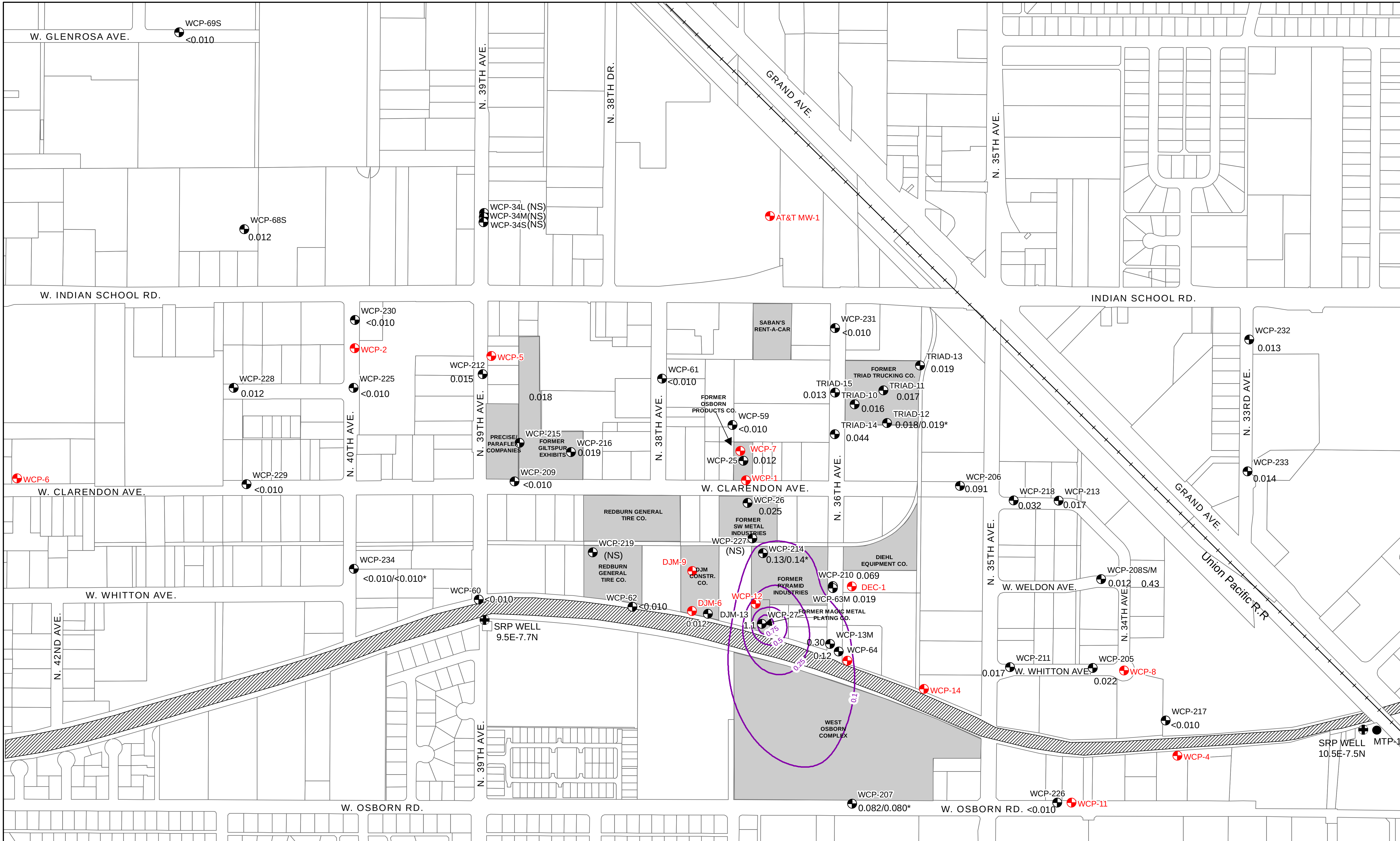
0 250 500
APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

GROUNDWATER 1,1-DCE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	03/08/17	2014042032G	44



WCP-205 0.022 — Monitoring Well with Well ID and Total Chromium Concentration (mg/L)
DEC-1 — Monitoring Well with Well ID (abandoned or dry)
SRP Production Well
Estimated Total Chromium Concentration Contours (mg/L)
Irrigation Canal
Railroad Tracks
Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500
APPROXIMATE SCALE IN FEET

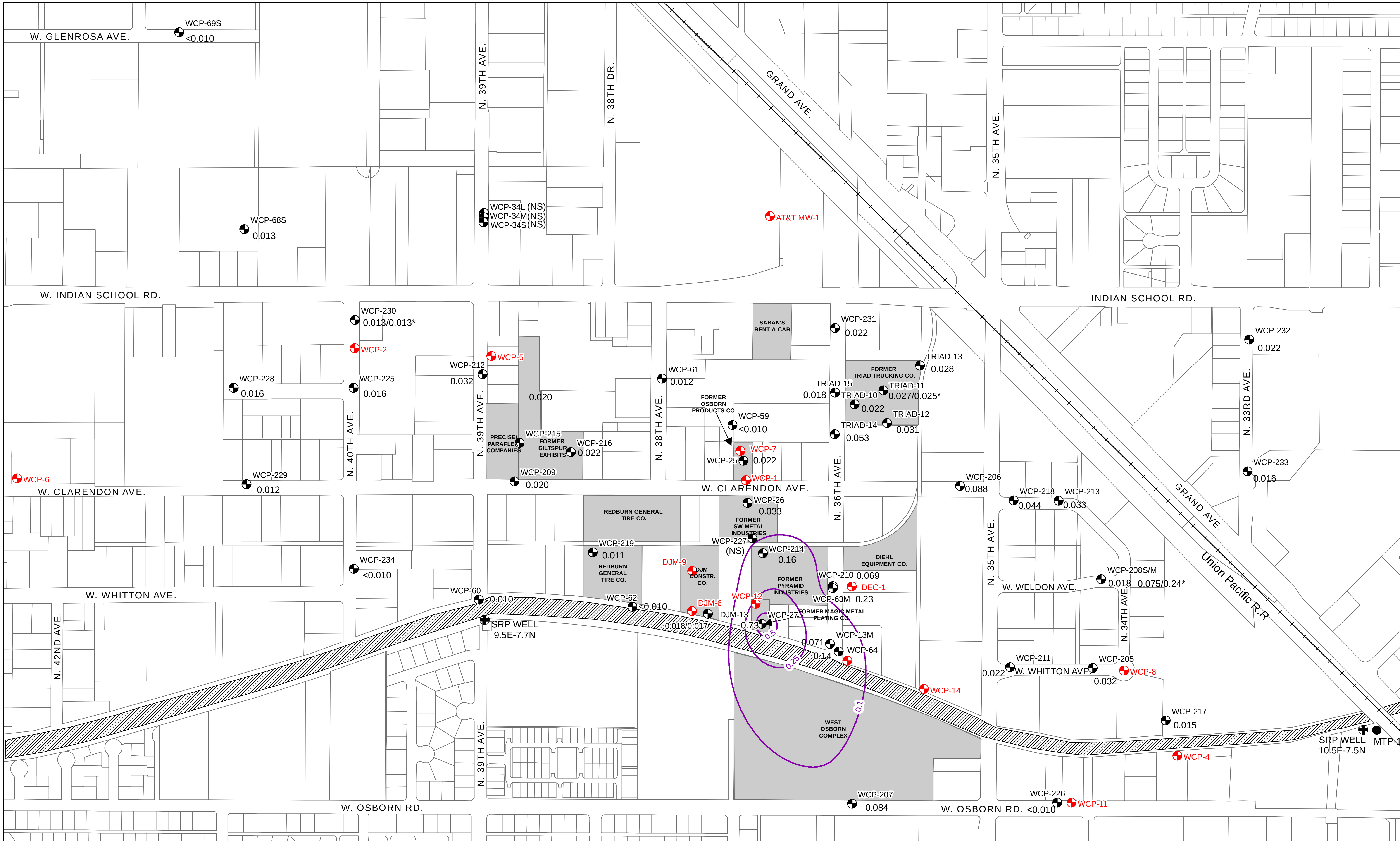
NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled
ADEQ Aquifer Water Quality Standard = 0.1 mg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER TOTAL CHROMIUM CONCENTRATIONS FOR JULY 2013 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300805G	45



WCP-205 0.032 Monitoring Well with Well ID and Total Chromium Concentration (mg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated Total Chromium Concentration Contours (mg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken (listed after /).
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-212 not used for contouring.
(NS) = not sampled

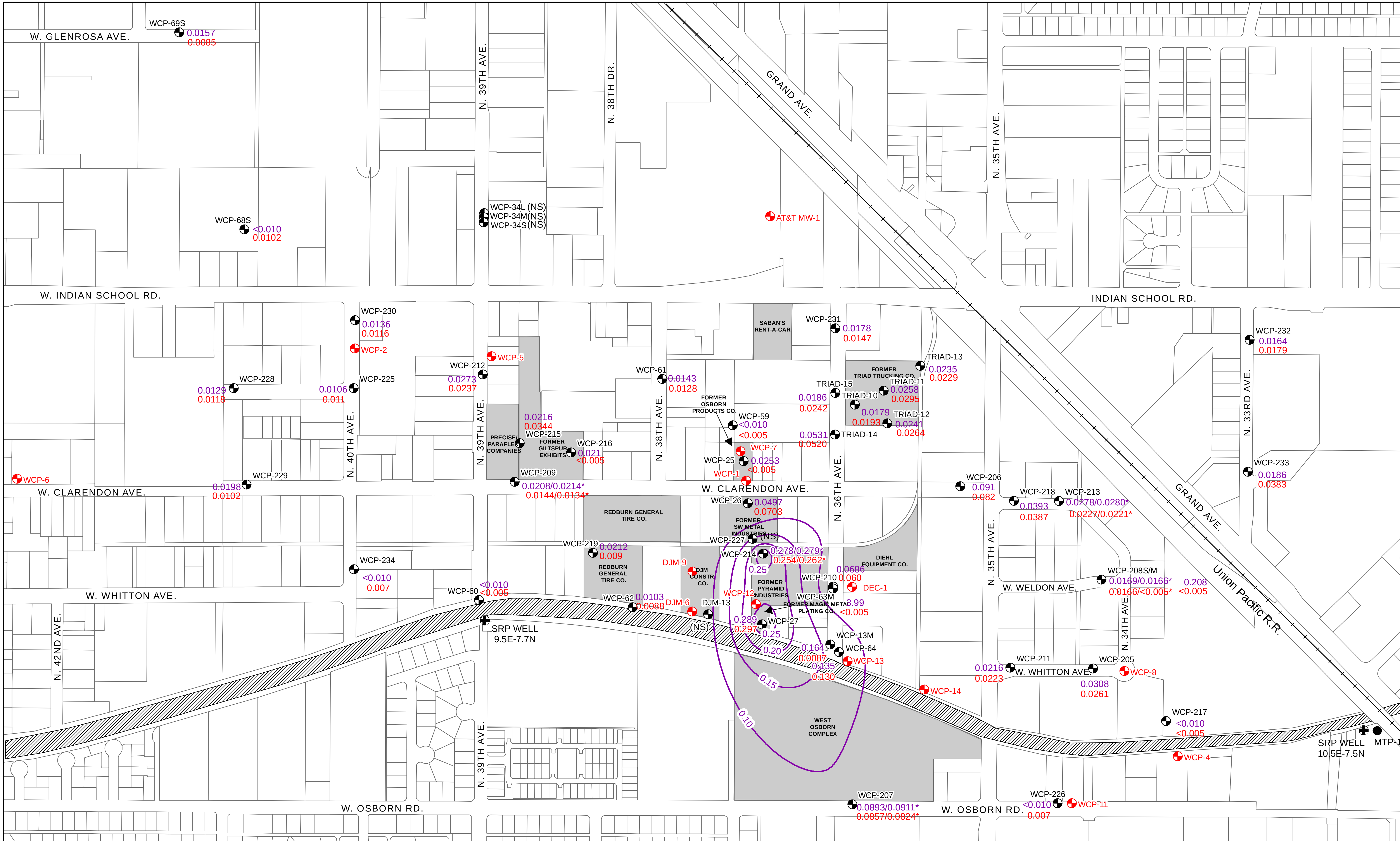
ADEQ Aquifer Water Quality Standard = 0.1 mg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER TOTAL CHROMIUM CONCENTRATIONS FOR FEBRUARY 2014 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201300811G	46



WCP-205 Monitoring Well with Well ID and
0.0308 Total Chromium Concentration (mg/L) and
0.0261 Hexavalent Chromium Concentration (mg/L)
DEC-1 Monitoring Well with Well ID (abandoned or dry)
SRP Production Well

Estimated Total Chromium Concentration Contours (mg/L)
Irrigation Canal
Railroad Tracks
Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500
APPROXIMATE SCALE IN FEET

ADEQ Aquifer Water Quality Standard = 0.1 mg/L (Total Chromium)

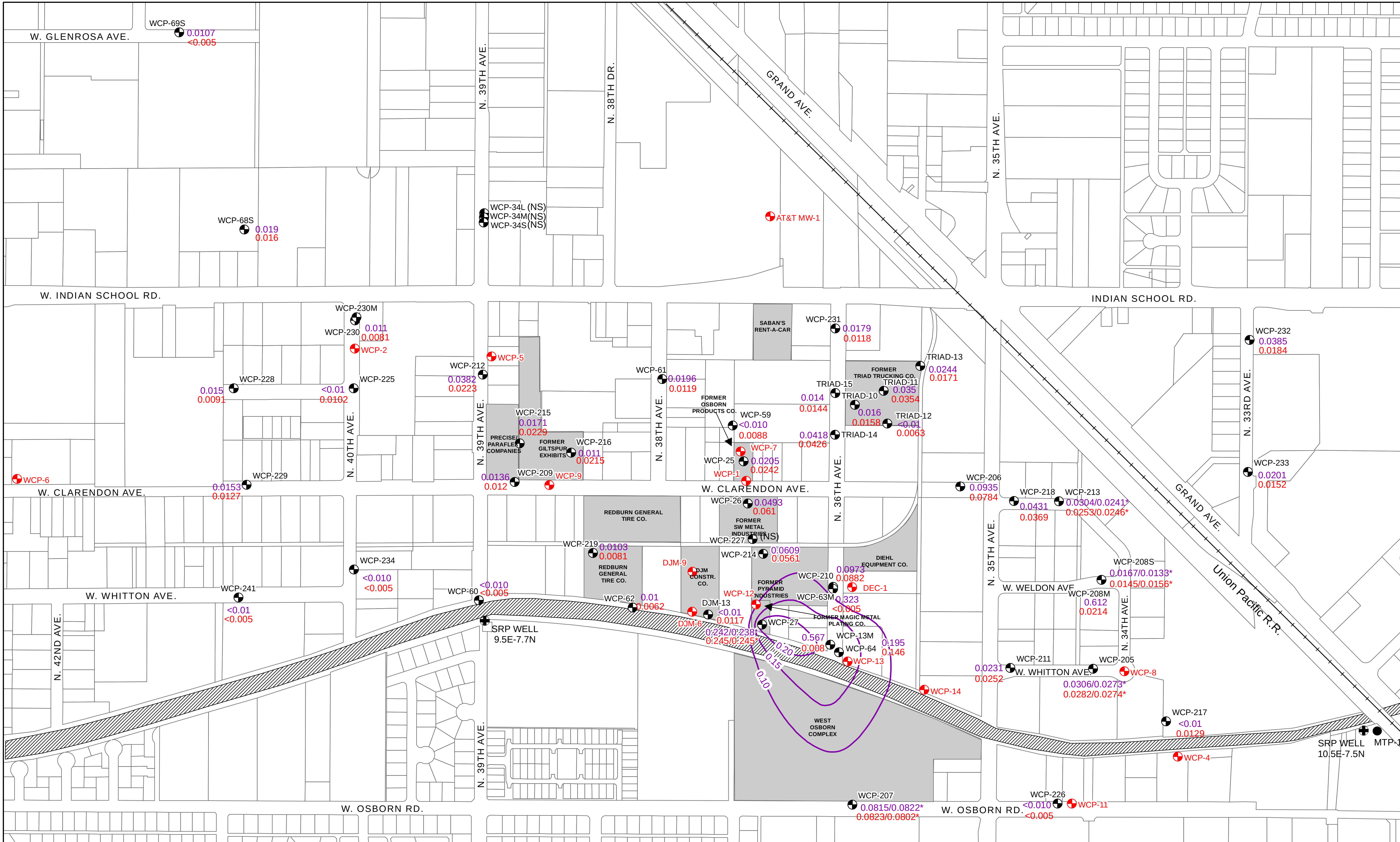
NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
(NS) = not sampled

N

HYDRO GEO CHEM, INC.

GROUNDWATER TOTAL CHROMIUM AND HEXAVALENT CHROMIUM CONCENTRATIONS FOR FEBRUARY 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	06/03/15	201404211G	47



WCP-206 Monitoring Well with Well ID and
0.0935 Total Chromium Concentration (mg/L) and
0.0784 Hexavalent Chromium Concentration (mg/L)
DEC-1 Monitoring Well with Well ID (abandoned or dry)
SRP Production Well

Estimated Total Chromium Concentration Contours (mg/L)
Irrigation Canal
Railroad Tracks
Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500
APPROXIMATE SCALE IN FEET

ADEQ Aquifer Water Quality Standard = 0.1 mg/L (Total Chromium)

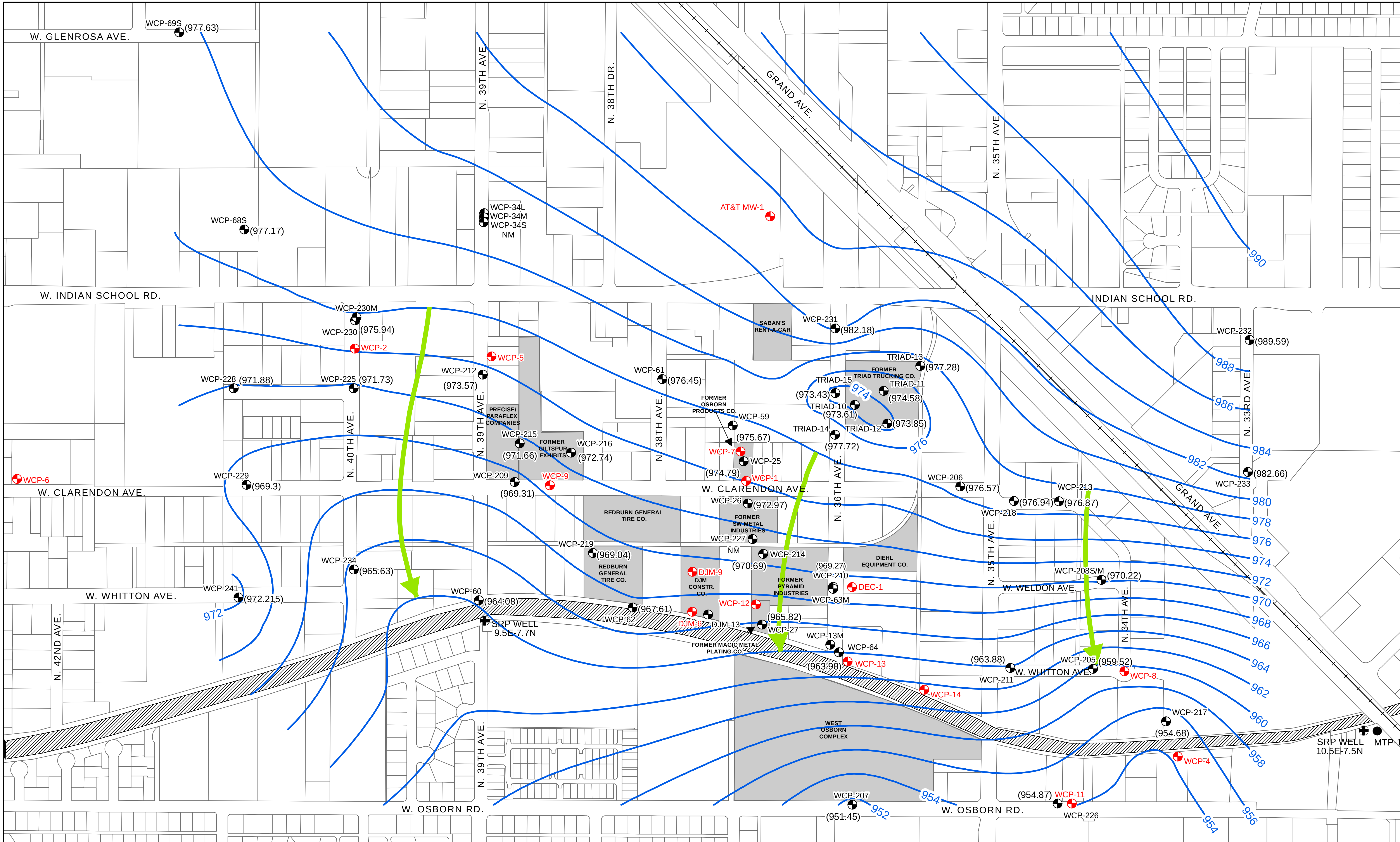
NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

N

HYDRO GEO CHEM, INC.

GROUNDWATER TOTAL CHROMIUM AND HEXAVALENT CHROMIUM CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	03/08/17	2014042033G	48



WCP-59 (975.67) Monitoring Well with Well ID and Groundwater Elevation in Feet Above Mean Sea Level (ft amsl)

WCP-12 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

Estimated Groundwater Elevation Contours

Estimated Groundwater Flow Paths

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

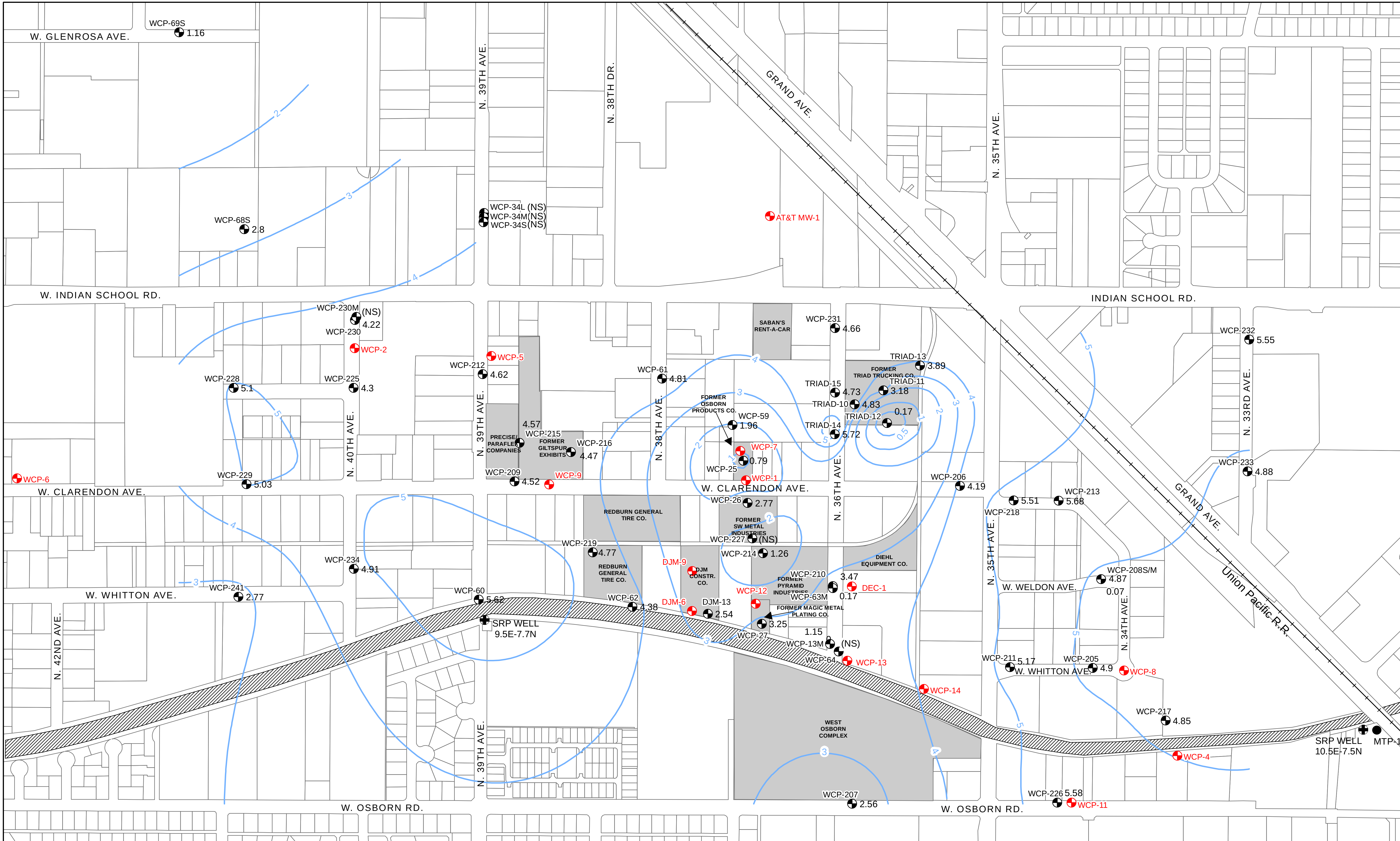
Note: DJM-13, WCP-13M, WCP-63M, WCP-34L, WCP-34M, WCP-208M, WCP-230M were not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
NM = not measured

N

HYDRO GEO CHEM, INC.

GROUNDWATER ELEVATIONS AND FLOW PATHS
NOVEMBER 2015
WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
MJB	02/01/17	2014042038G	49



WCP-205 4.9	Monitoring Wells with Well ID and Dissolved Oxygen Concentration (mg/L)		Estimated Dissolved Oxygen Contours (mg/L)
DEC-1	Monitoring Well with Well ID (abandoned or dry)		Irrigation Canal
	SRP Production Well		Railroad Tracks
			Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

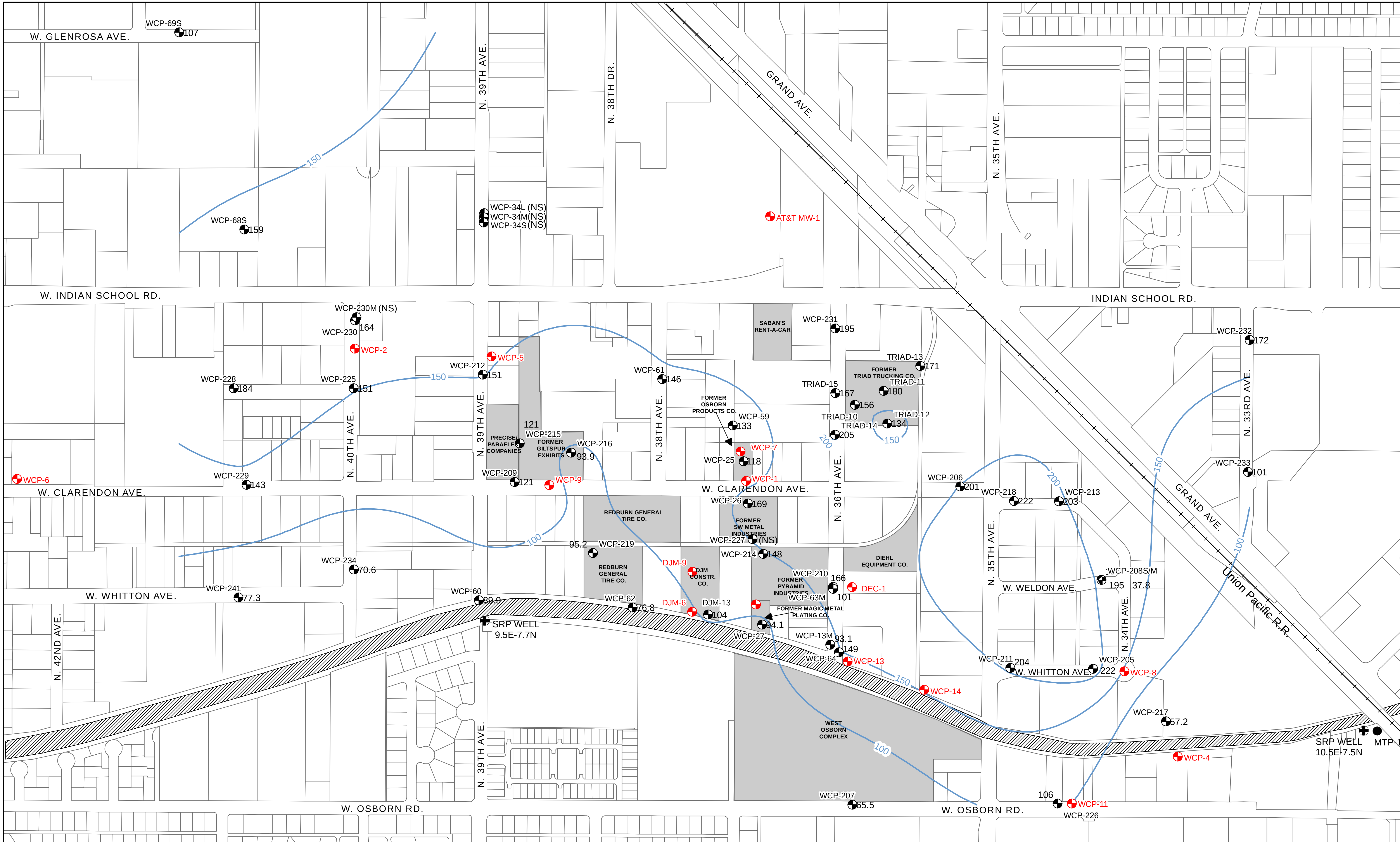
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER DISSOLVED OXYGEN CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/17/16	2014042046G	50



WCP-205 222 — Monitoring Wells with Well ID and Sulfate Concentration (mg/L)

DEC-1 — Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated Sulfate Contours (mg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

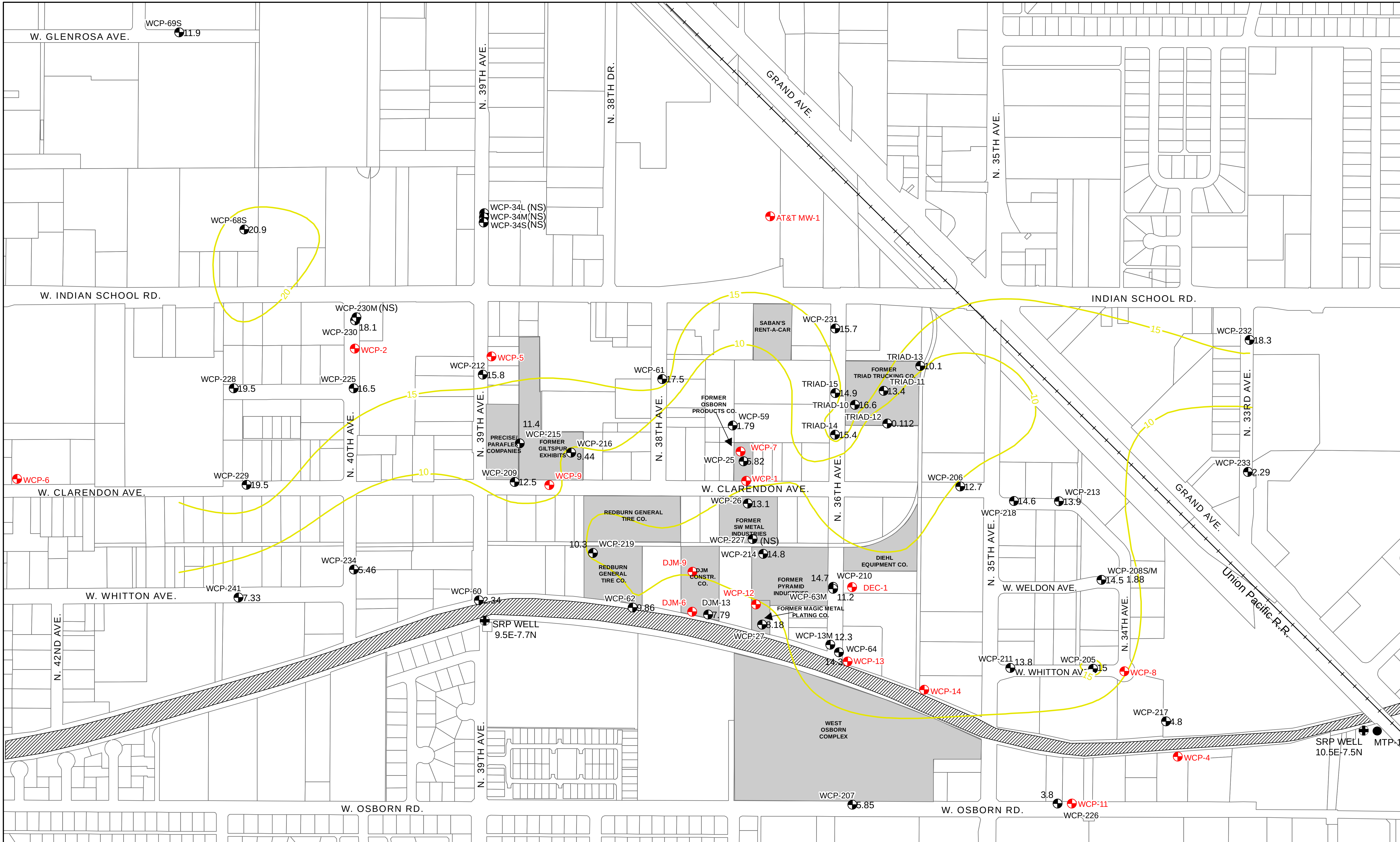
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER SULFATE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/17/16	2014042035G	51



WCP-205 15.0 Monitoring Wells with Well ID and Nitrate as N Concentration (mg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated Nitrate as N Contours (mg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

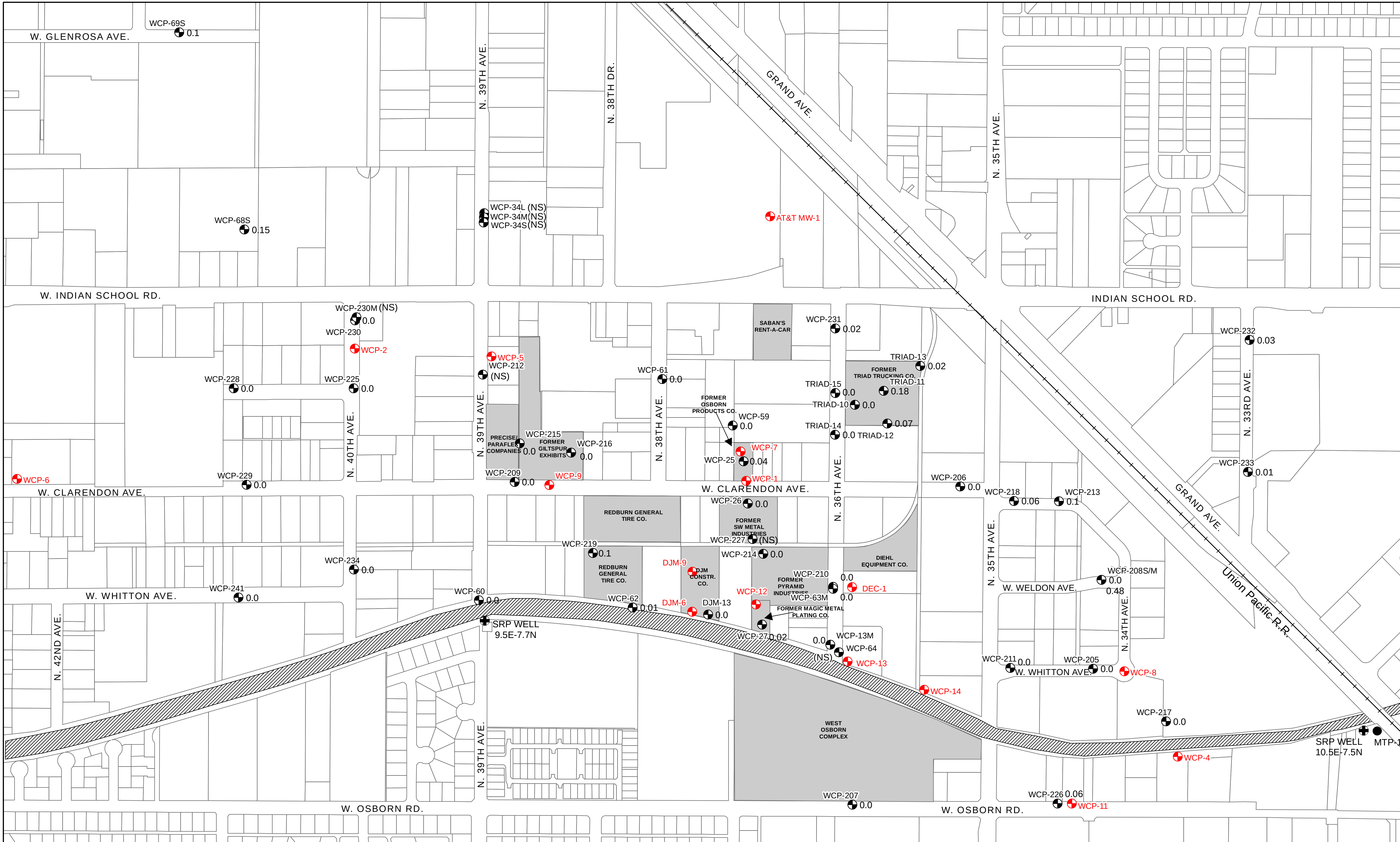
ADEQ Aquifer Water Quality Standard = 10 mg/L

N

HYDRO GEO CHEM, INC.

GROUNDWATER NITRATE AS NITROGEN CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/17/16	2014042034G	52



WCP-205 0.0 Monitoring Wells with Well ID and Ferrous Iron Concentration (mg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

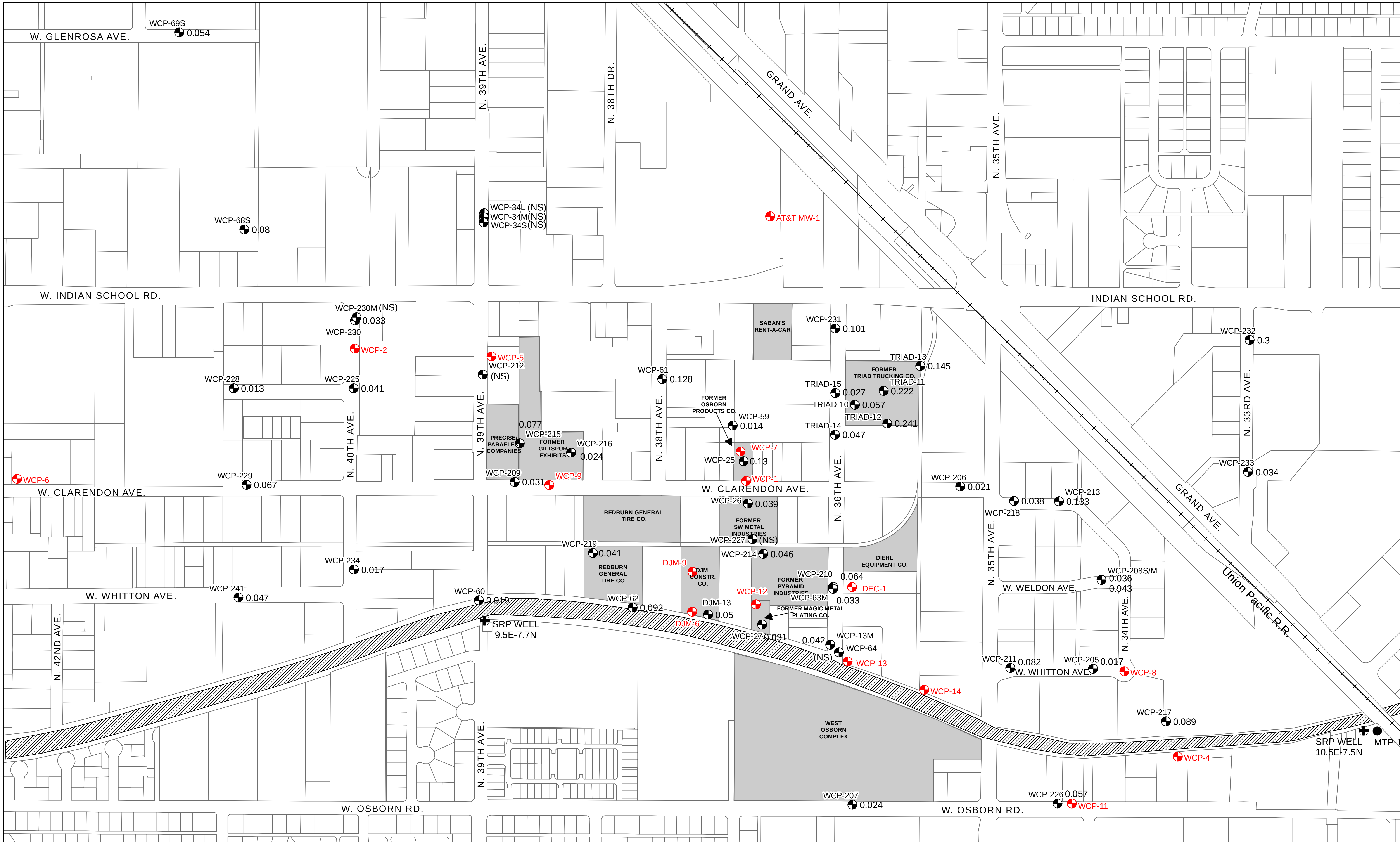
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER FERROUS IRON CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/24/16	2014042044G	53



WCP-205 0.017 Monitoring Wells with Well ID and Sulfide Concentration (mg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

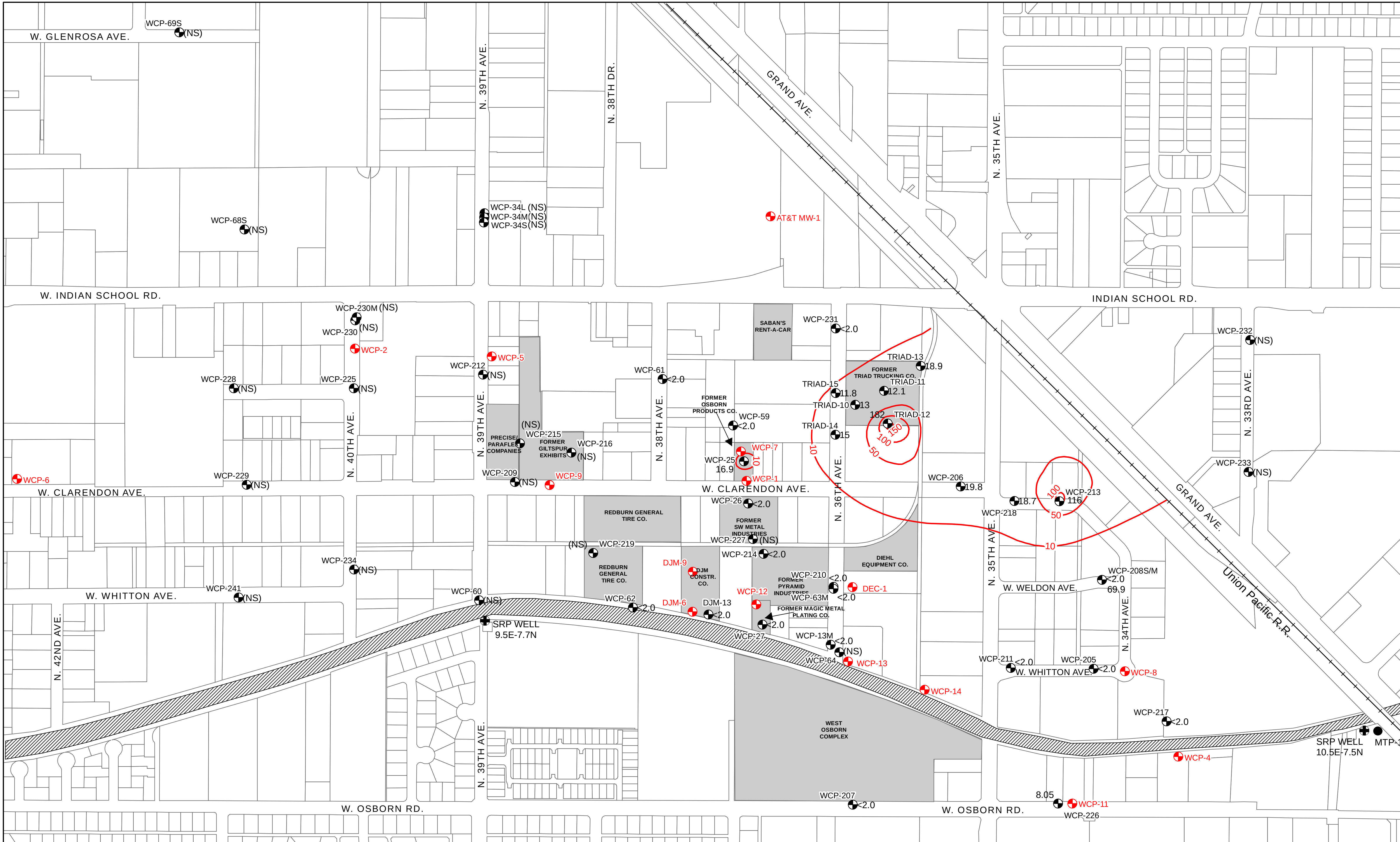
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER SULFIDE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	03/08/17	2014042045G	54



WCP-205 <2.0 Monitoring Wells with Well ID and Methane Concentration (µg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated Methane Contours (µg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, WCP-208M and WCP-230M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

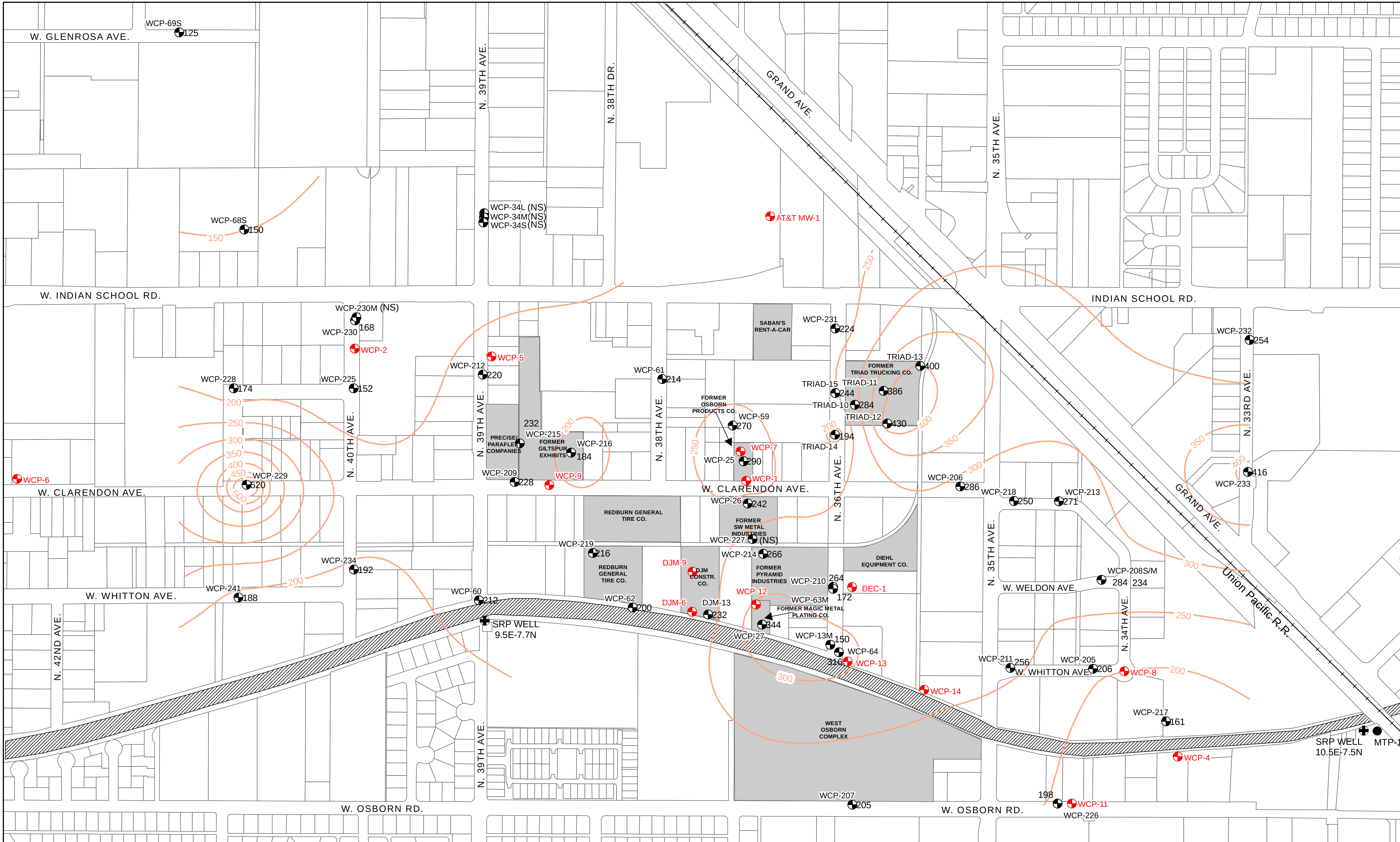
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER METHANE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
DVS	03/08/17	2014042043G	55



WCP-205 206 Monitoring Wells with Well ID and Alkalinity (mg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated Alkalinity Contours (mg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

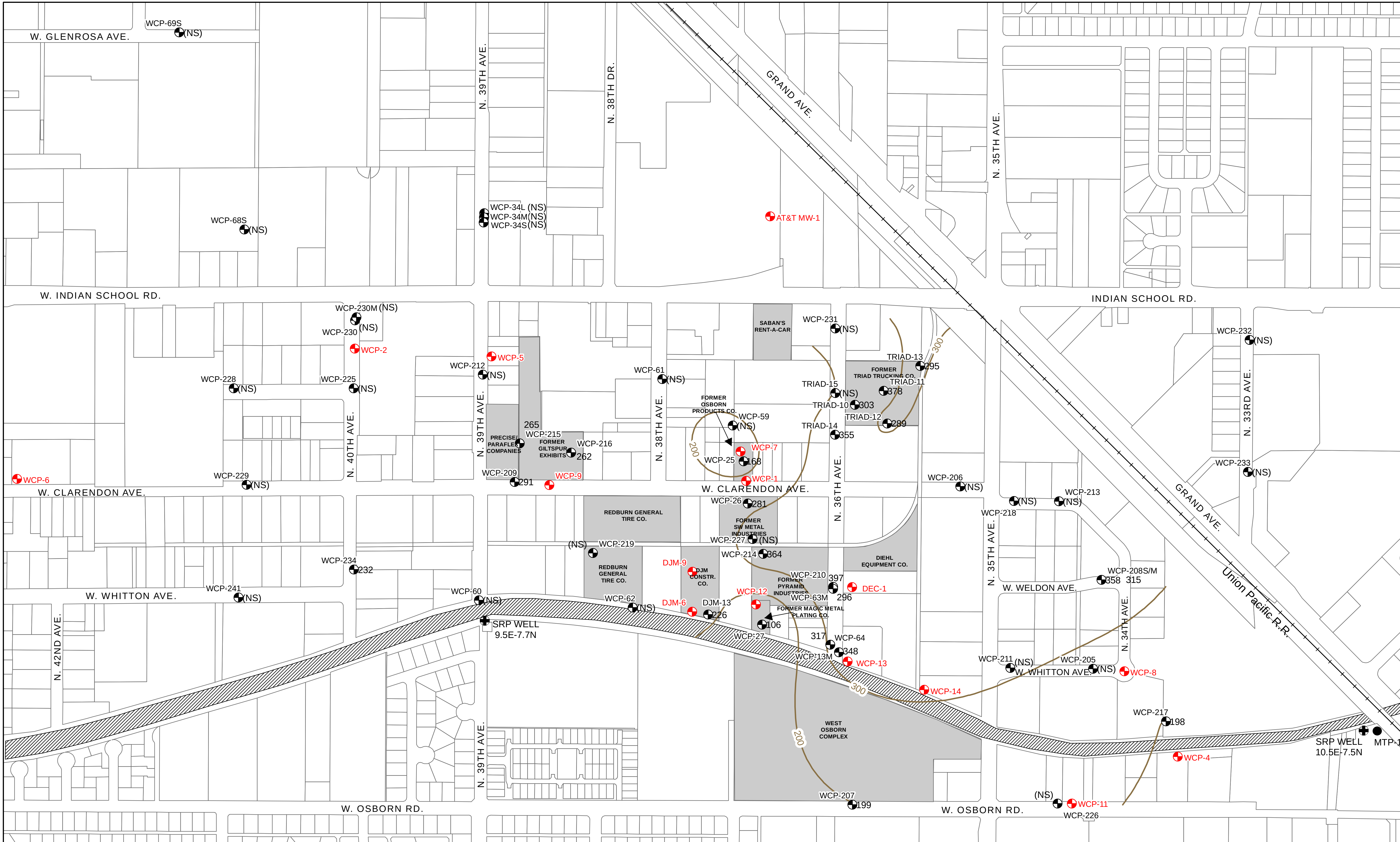
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER ALKALINITY FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/17/16	2014042037G	56



WCP-205 (NS) Monitoring Wells with Well ID and Chloride Concentration (mg/L)

DEC-1 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Estimated Chloride Contours (mg/L)

Irrigation Canal

Railroad Tracks

Other Production Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 250 500

APPROXIMATE SCALE IN FEET

NOTE: * Indicates duplicate samples taken.
Higher of the two samples used for contouring.
WCP-13M, WCP-63M, and WCP-208M not used for contouring.
Abandoned monitoring wells WCP-3 and WCP-10 located south of figure extent.
(NS) = not sampled

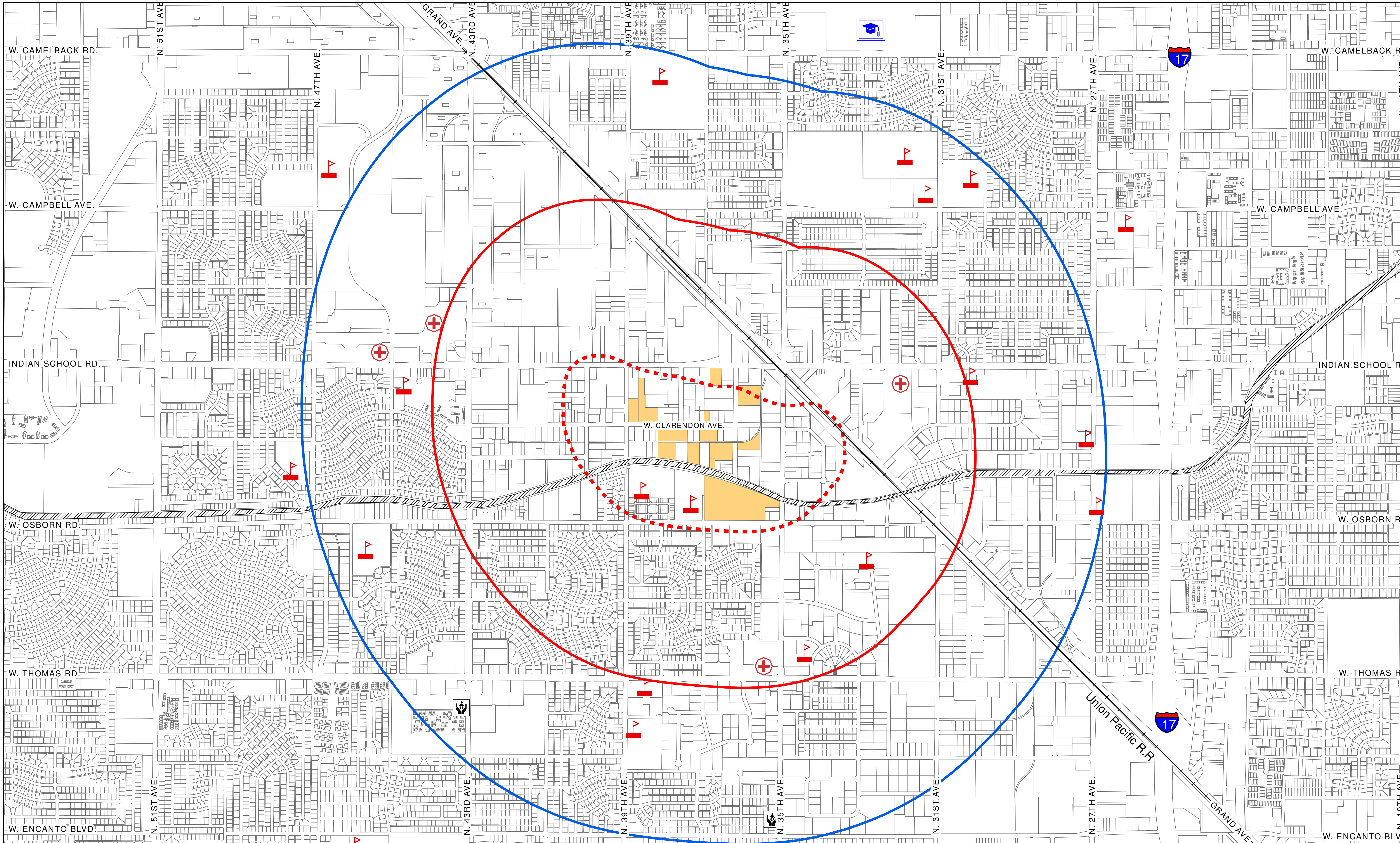
ADEQ Aquifer Water Quality Standard Not Established

N

HYDRO GEO CHEM, INC.

GROUNDWATER CHLORIDE CONCENTRATIONS FOR NOVEMBER 2015 SAMPLING EVENT, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/17/16	2014042036G	57



November 2015 Estimated Plume Boundary
0.5 Mile Radius, Estimated Plume
1.0 Mile Radius, Estimated Plume
Irrigation Canal
Railroad Tracks
Medical Facility
School
Childcare Facility
Grand Canyon University

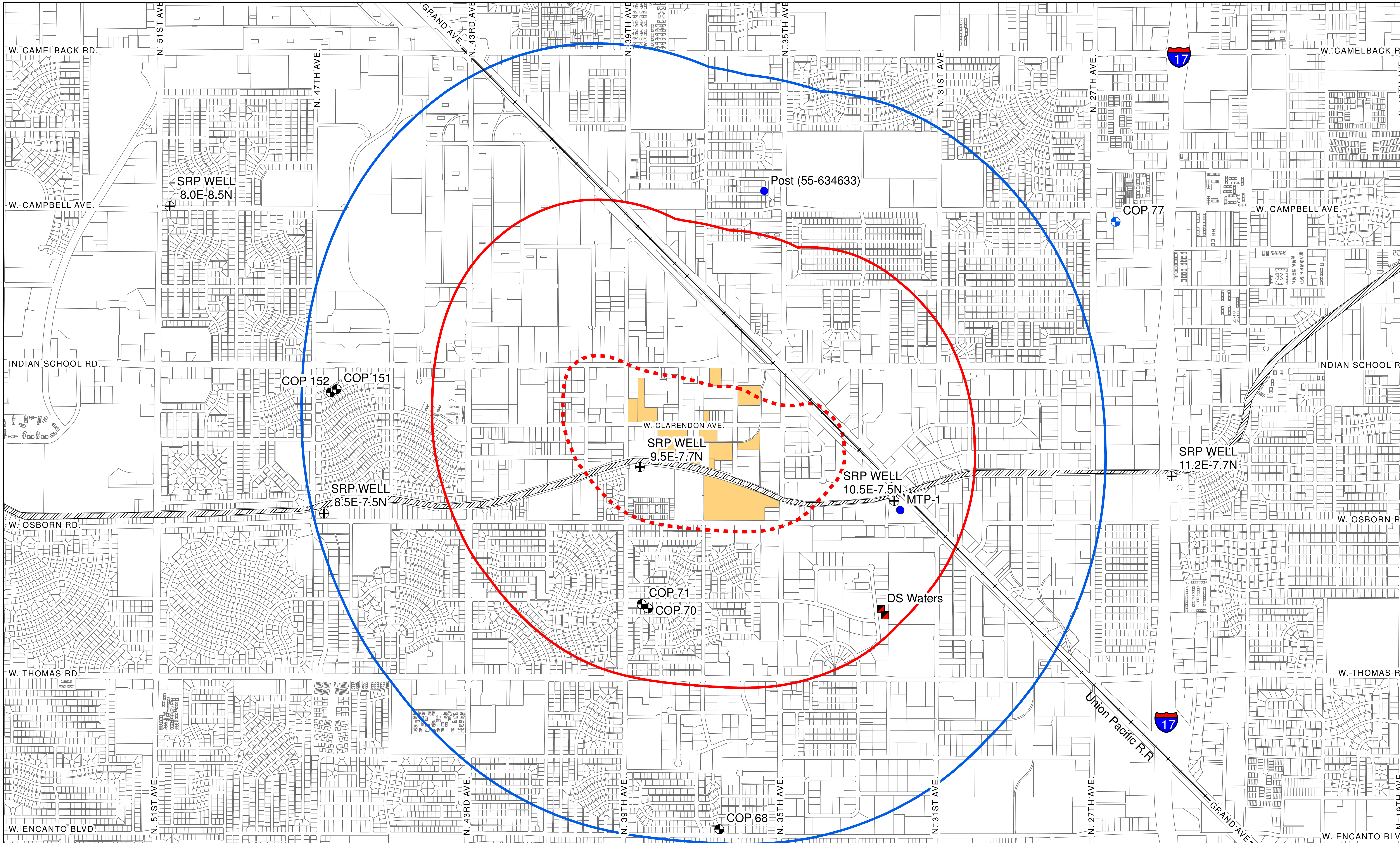
Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

0 0.25 0.5
APPROXIMATE SCALE IN MILES

HYDRO GEO CHEM, INC.

POTENTIAL SENSITIVE RECEPTORS
VICINITY OF WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	04/01/16	2014042047G	58



November 2015 Estimated Plume Boundary
0.5 Mile Radius, Estimated Plume
1.0 Mile Radius, Estimated Plume
Irrigation Canal
Railroad Tracks
Domestic Supply Well
DS Waters Commercial Supply Well
City of Phoenix Inactive Supply Well
City of Phoenix Active Supply Well
Salt River Project Irrigation Well

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

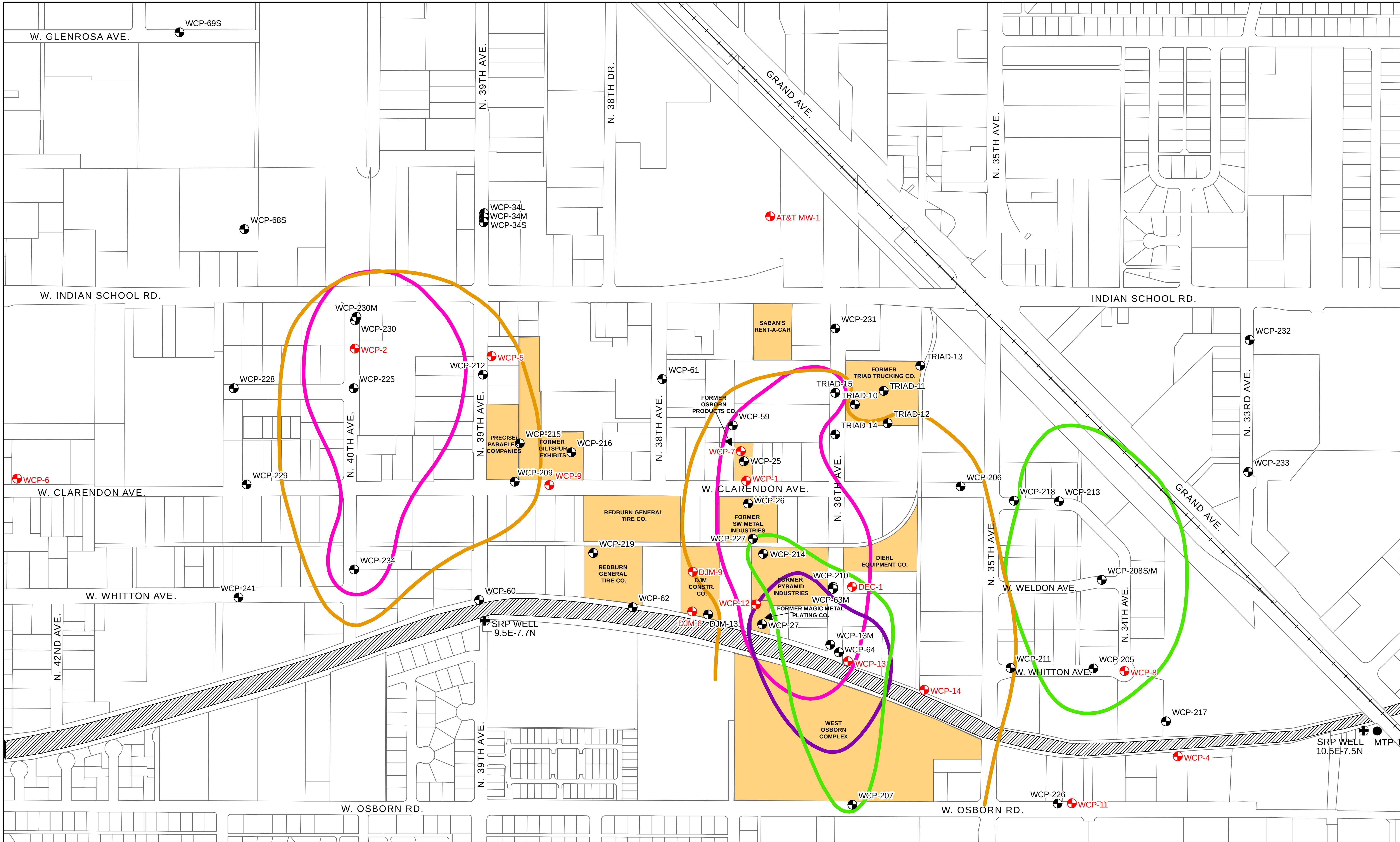
0 0.25 0.5
APPROXIMATE SCALE IN MILES

N

HYDRO GEO CHEM, INC.

PUMPING WELLS
VICINITY OF WEST CENTRAL PHOENIX
NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	04/01/16	2014042048G	59



WCP-27 Monitoring Well with Well ID

WCP-6 Monitoring Well with Well ID (abandoned or dry)

SRP Production Well

Other Production Well

Irrigation Canal

Railroad Tracks

PCE Plume Extent above ADEQ AWQS

TCE Plume Extent above ADEQ AWQS

1,1-DCE Plume Extent above ADEQ AWQS

Total Chromium Plume Extent above ADEQ AWQS

Spatial Reference: NAD 1983 HARN State Plane Arizona Central FIPS 0202 Feet Intl

NOTE: Contours generated from groundwater sample results - November 2015

0 250 500

APPROXIMATE SCALE IN FEET

N

HYDRO GEO CHEM, INC.

NOVEMBER 2015 ESTIMATED GROUNDWATER SOLUTE PLUME EXTENTS, WEST CENTRAL PHOENIX NORTH CANAL PLUME WQARF SITE

Approved	Date	File	Figure
SPS	03/21/16	2014042040G	60