

REMEDIAL INVESTIGATION REPORT

East Central Phoenix 40th Street and Osborn Road Water Quality Assurance Revolving Fund Site Phoenix, Arizona

Prepared on Behalf of:



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Arizona Department of Environmental Quality 1110 West Washington Street Phoenix, Arizona 85007

Attn: Lisa Kowalczyk

Re: Remedial Investigation Report 40th Street and Osborn Road WQARF Registry Site Phoenix, Arizona

We certify that this document and attachments presented in this report are accurate and complete. This report was prepared by the staff of Wood Environment and Infrastructure Solutions, Inc. (Wood) under our supervision to ensure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who are directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate and complete.

If you have any questions or comments regarding this report, please contact Jim Clarke at (602) 733-6055.

Respectfully submitted,

Wood Environment & Infrastructure Solutions, Inc.

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ACRONYMS AND ABBREVIATIONS

μg	micrograms
µg/L	micrograms per liter
°F	degrees Fahrenheit
%	percent
Site	40 Street and Osborn Road WQARF site
48th & IS site	48 Street and Indian School Road WQARF site
A.A.C.	Arizona Administrative Code
A.R.S.	Arizona Revised Statutes
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AMA	Active Management Area
amsl	above mean sea level
AWQS(s)	Aquifer Water Quality Standard(s)
bgs	below ground surface
btoc	below top of casing
САР	Central Arizona Project
CAS	Corrective Action Section
CEV	Camelback East Village
cis-1,2-DCE	cis-1,2-dichloroethene
сос	contaminant of concern
СОР	City of Phoenix
Earth Tech	Earth Technologies, Inc
ECP	East Central Phoenix
FS	Feasibility Study
ft	feet
ft/ft	feet per foot
gpm	gallons per minute
H+A	Hargis + Associates, Inc.
IAQ	indoor air quality
LAU	Lower Alluvial Unit
LRL(s)	Laboratory reporting limit(s)
LUST	leaking underground storage tank
MAU	middle alluvial unit
MTBE	methyl tert-butyl-ether
ng	nanograms
NRCS	National Resources Conservation Service
PCE	tetrachloroethene
PDB	passive diffusive bag
PSG	passive soil gas

QAPP	Quality Assurance Project Plan
RI	remedial investigation
ROs	remedial objectives
Sandy's Cleaners	Sandy's Magic Touch Cleaners
SRP	Salt River Project
TCE	trichloroethene
UAU	upper alluvial unit
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Society
VI	vapor intrusion
VPS	vertical profile sample
VOC	volatile organic compound
Wood	Wood Environment & Infrastructure Solutions, Inc.
WQARF	Water Quality Assurance Revolving Fund
WSRV	western portion of the Salt River Valley

EXECUTIVE SUMMARY

This report summarizes the findings of remedial investigation (RI) activities conducted by the Arizona Department of Environmental Quality (ADEQ) at the 40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF) site (herein referred to as the Site; **Figure 1**) located in the City of Phoenix (COP), Arizona. As of October 2019, the groundwater "plume," which consists of elevated concentrations of tetrachloroethene (PCE), extends to the southwest as depicted on **Figure 2**.

The investigation of the Site began in 1983 when Salt River Project (SRP) collected groundwater samples from several wells that they were pumping in the Salt River Valley. This included SRP Well 17.9E-7.5N, which is located west of the intersection of 40th Street and Osborn Road and within the Site (**Figures 1 and 2**). PCE was detected at a concentration of 53 micrograms per liter (μ g/L) in the sample collected from SRP Well 17.9E-7.5N, which is above the Aquifer Water Quality Standard (AWQS) of 5.0 μ g/L. Based on the results of this sampling event, ADEQ established the East Central Phoenix (ECP) Study Area, which included the Site. SRP took the well off-line in 1990 but continued operating the well periodically to collect water quality samples. The maximum PCE concentration of 210 μ g/L was reported in the 1998 sample collected from SRP Well 17.9E-7.5N. (ADEQ, 2019) (**Table 3**). The Site was placed on the WQARF registry in May 2000 (ADEQ, 2000).

Dissolved PCE is present at the Site above the AWQS of 5.0 μ g/L. Three separate PCE plumes were identified during the RI, two shallow PCE plumes and a deeper PCE plume (**Figures 2-5**). ADEQ is investigating the shallow PCE plumes separately; therefore, they are identified as off-site shallow PCE plumes and are not included in this RI. Therefore, the RI is focused on the deep dissolved PCE plume, which is referred to as the Site (**Figure 2**).

Groundwater flows in a southwesterly direction (**Figure 6**). The maximum dissolved PCE concentration detected in a groundwater sample collected at the Site was 210 µg/L in the wellhead sample collected from SRP Well 17.9E-7.5N on September 28, 1998 (**Table 3**). This sample was collected from the wellhead and did not represent a specific sample depth. The highest depth-specific dissolved PCE concentrations have historically been detected in groundwater samples collected from boring BMW-02D and monitoring wells BMW-02C and BMW-02E (maximum 360 µg/L in vertical profile sample BMW-02E-220) (**Tables 3 and 4**). However, the dissolved PCE plume above 5.0 µg/L is located nearly 70 feet (ft) below the 2019 water table. Groundwater samples collected from monitoring wells and borings located upgradient (northeast) of BMW-02C/E (**Figure 2**), primarily associated with the adjacent 48th Street and Indian School Road WQARF site (48th & IS site), have been reported with PCE lower than the PCE concentrations reported in the October 2019 samples collected from BMW-02C/E (from 11 µg/L at 130.5 ft below ground surface (bgs) at BMW-02C to 120 µg/L at BMW-02E at 160 and 260 ft bgs).

The eastern portion of the Site near the intersection of 40th Street and Osborn Road to the upgradient (northeast) Site boundary at 42nd Street is developed with single family residences. Therefore, there are no identified potential source facilities for the PCE in this area. However, the adjacent 48th & IS site has historically contained dry cleaning facilities, service stations, and printing shops, with some of the dry cleaners operating since 1962. In 1989, ADEQ performed soil vapor sampling at several facilities within the ECP study area, including facilities within the 48th & IS site. Though the dissolved PCE within the Site possibly originated from the 48th & IS site, the plumes are currently depicted as separate plumes and the

source facility of the dissolved PCE at the Site remains unknown. Considering that a source facility has not been identified within the Site boundaries, a soil investigation was not performed. Therefore, the RI was focused on the groundwater.

As shown in **Table 3**, PCE, TCE, chloroform, carbon disulfide and toluene are the only VOCs that have been detected in groundwater samples collected from the Site wells. However, with the exception of TCE in the November 14, 1996 sample collected from SRP Well 17.9E-7.5N (9.9 μ g/L), PCE has been the only VOC detected above the AWQS in groundwater samples collected from monitoring wells and borings at the Site. Therefore, PCE is identified as the contaminant of concern (COC) in the groundwater.

As previously stated, the maximum dissolved PCE concentration detected in a groundwater sample collected at the Site was 210 μ g/L in the September 28, 1998 sample collected from SRP Well 17.9E-7.5N (**Table 3**). However, this sample was collected from the wellhead. The maximum depth-specific PCE concentration was reported in VPS BMW-02E-220 (360 μ g/L). The maximum PCE concentration reported in a compliance groundwater sample was 170 μ g/L in sample BMW-02E-160 collected on April 23, 2019. At BMW-02C/E, the dissolved PCE plume above 5.0 μ g/L is approximately 150 ft thick and confined vertically by underlying bedrock. As shown on **Figure 4**, the Site PCE plume becomes deeper and thinner with distance from BMW-02C/E. At BMW-16D, the upper boundary of the PCE plume is located at approximately 200 ft bgs and the PCE plume is approximately 50 ft thick. Monitoring well BMW-16D is the furthest downgradient monitoring well for the Site. The maximum PCE concentration in the October 2019 samples collected from BMW-16D is 10 μ g/L in sample BMW-16D-225. Though above the AWQS of 5.0 μ g/L, no additional downgradient monitoring wells are necessary to complete the RI and to evaluate the remedy during the FS. Future monitoring wells may be installed as part of the selected remedy in the event Site conditions change.

For the purposes of the RI and evaluation of the remedy in the FS, the southeastern extent of the Site PCE plume is adequately defined. However, there are only two monitoring wells located along the northwest inferred extent of the Site PCE plume. PCE was reported at 5.3 μ g/L in sample BMW-18D-240 collected on October 16, 2019. However, samples collected from planned lateral extent monitoring well BMW-17D were detected with PCE above 5.0 μ g/L, maximum 120 μ g/L in sample BMW-17D-140 collected on October 16, 2019. Additional lateral extent monitoring wells will be installed to adequately define the contaminant plume. These wells are identified as BMW-20D and BMW-21D on **Figure 1** and are being installed in March 2020. The results of the well installation and sampling will be presented in the FS Report.

Dissolved PCE in groundwater can also represent a vapor intrusion (VI) risk to indoor air under certain conditions. These conditions typically consist of elevated dissolved PCE concentrations at or near a source, shallow groundwater is present, and the dissolved PCE is present near the surface of the water table. Under these conditions, PCE can volatilize to the vadose zone at the water table and the vapor-phase PCE can migrate upward and potentially into buildings above risk-based air concentrations. However, at the Site, the dissolved PCE is deep, greater than 110 ft below top of casing (btoc) at the shallowest point in the plume and greater than 200 ft btoc at BMW-16D. The PCE plume is also approximately 70 ft below the water table at BMW-02C and BMW-17D and is approximately 125 ft below the water table at BMW-16D. With the exception of the two shallow, off-site PCE plumes, dissolved PCE concentrations are non-detect in Site VPSs and groundwater samples collected near the water table. Therefore, vapor-phase PCE is not present at the water table, which ranges from approximately 41 ft btoc at BMW-02E to approximately 83 ft

btoc and BMW-16D. A source facility for the Site PCE plume was not identified. Therefore, a VI investigation was not performed at the Site. As discussed in **Section 3.3**, a comprehensive VI assessment was performed at the adjacent 48th & IS site, where conditions susceptible to VI existed. The 48th & IS site VI assessment demonstrated that a VI risk did not exist. A limit PSG survey was performed at the Site in the vicinity of SRP Well 17.9E-7.5N. The results of the limited PSG survey performed at the Site were compared to the results of the comprehensive VI assessment performed at the adjacent 48th & IS site. The results of the comparison indicate that a VI risk to indoor air originating from the Site PCE plume is not present.

The conclusions of the RI are summarized as follows:

- The COC at the Site is dissolved PCE in the groundwater. The source of the PCE is currently unknown.
- Based on the October 2019 groundwater sampling event, the maximum concentration of PCE at the Site is 120 μ g/L.
- The vertical extent of groundwater impact has been characterized to impermeable bedrock.
- Though PCE concentrations are slightly above the AWQS of 5.0 µg/L in groundwater samples collected from the furthest downgradient monitoring well BMW-16D, it has been determined that the downgradient extent of the PCE is adequately defined to complete the RI.
- The boundary of the Site plume is adequately defined for the purposes of the RI. Additional monitor wells will be installed to define the contaminant plume.

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Draft Remedial Investigation (RI) Report for the East Central Phoenix (ECP) 40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF) site (herein referred to as the Site) located in Phoenix, Arizona (**Figure 1**).

The Site extends to the southwest from near the intersection of 40th Street and Osborn Road to near the intersection of 25th Street and Oak Street. The boundary line between the Site and the adjacent (east) 48th Street and Indian School Road WQARF site (herein referred to as the 48th & IS site) is currently 42nd Street (**Figures 1 and 2**).

The investigation of the Site began in 1983 when Salt River Project (SRP) collected groundwater samples from several wells that they were pumping in the Salt River Valley. This included SRP's irrigation Well 17.9E-7.5N, which is located within the Site west of the intersection of 40th Street and Osborn Road (**Figure 1**). PCE was detected at a concentration of 53 micrograms per liter (μ g/L) in the sample collected from SRP Well 17.9E-7.5N, which is above the Aquifer Water Quality Standard (AWQS) of 5.0 μ g/L. SRP took the well off-line in 1990, but continued operating the well periodically to collect water quality samples. The maximum PCE concentration of 210 μ g/L was reported in the 1998 sample. PCE concentrations decreased to non-detect in the 2016 sample (ADEQ, 2020a). The dissolved PCE within the Site possibly originated from the 48th & IS site, however, the plumes are currently depicted as separate plumes. Therefore, the source of the Site plume remains unknown.

The Site was placed on the WQARF Registry List in May 2000 with a score of 30 out of a possible 120 (ADEQ, 2000). Following assumed completion of RI activities and definition of the PCE distribution, a Draft Final RI Report was made available for a 60-day public comment period on December 18, 2014. ADEQ also prepared a Draft Remedial Objectives (RO) Report dated February 25, 2015 that was made available for a 30-day public comment period on February 26, 2015 (ADEQ, 2015). Following the issuance of the Draft RI and RO reports, additional investigation was completed that changed the site's conceptual site model. Additional groundwater monitor wells were installed that indicated two distinct contaminant plumes. Therefore, Final RI and RO Reports were not issued.

This report describes the results of RI activities conducted from 1992 through October 2019. Historical information presented herein includes a summary of investigations conducted by previous consultants and is summarized as necessary to meet the RI objectives described below.

1.1 Remedial Investigation Objectives

This RI report was prepared in accordance with Arizona Revised Statutes (A.R.S.) §49-287.03 and Arizona Administrative Code (A.A.C.) R18-16-406(A). This RI report summarizes field investigations in accordance with A.A.C. R18-16-406(C).

1.2 Report Organization

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

• Physical setting of the site, including topography, climate, geology, and hydrogeologic setting;

- Site plans showing sampling locations;
- Analytical results for soil vapor and groundwater samples, including comparisons to appropriate regulatory standards, criteria, and guidance;
- Groundwater flow direction, concentrations of groundwater contaminants of concern (COCs), and vertical profiling;
- Exposure route pathways;
- A discussion of the physical and analytical results;
- A land and water use study;
- A human health risk evaluation; and
- Identification and evaluation of data gaps.

1.3 Site History

The Site is located in an area of mixed commercial and residential development. In 1998, the ECP Study Area (of which this Site was a part) was divided into six individual WQARF Registry sites:

- Site;
- 48th & IS site;
- 40th Street and Indian School Road;
- 38th Street and Indian School Road;
- 32nd Street and Indian School Road; and
- 24th Street and Grand Canal.

A 1988 study, which covered the ECP Study Area, identified Sandy's Cleaners located at 4730 East Indian School Road as a potential source of PCE to the groundwater in the area (Earth Tech, 1989). Sandy's Cleaners is located upgradient of the Site and within the 48th & IS site. However, the available groundwater data does not definitively indicate that the dissolved PCE in the groundwater at the 48th & IS site migrated into the Site. Therefore, the source of the dissolved PCE in the groundwater at the Site is currently unknown.

1.4 Contaminants of Concern and Potential Concern

Groundwater is the only impacted media at the Site. PCE is the only compound detected at concentrations above regulatory levels in groundwater. The only other compound previously detected in the groundwater that is no longer present at concentrations exceeding regulatory levels is TCE. Therefore, PCE is the COC in groundwater.

2.0 PHYSICAL SETTING

The following subsections provide the physical setting of the Site, including topography, climate, and surface water.

2.1 Topography

Arizona is primarily divided into two main physiographic provinces: the Colorado Plateau and the Basin and Range (United States Geological Society [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).

The Site is located within the United States Geologic Survey Topographic 7.5 Minute Phoenix map, which has a general topographic trend of decreasing elevations from the northeast to southwest. The ground surface at the Site slopes to the southwest and drops approximately 70 ft between wells BMW-03B (1,201.12 ft above mean sea level [amsl]) and BMW-16D (1,139.61 ft amsl) (**Figure 4**).

2.2 Climate

The Site is located within the semiarid climate of the northern Sonoran Desert. The region experiences hot summers and mild winters. Daytime high temperatures in July, typically the hottest month, are generally between 100 degrees Fahrenheit (°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 7 to 8 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 Surface Water

The nearest man-made surface water body is the Grand Canal. The downgradient end of the Site crosses a portion of the Grand Canal. The closest natural surface water body to the Site is the Salt River, located approximately 4 miles south of the downgradient edge of the Site.

Surface water usage within the site is for residential irrigation. The surface water source generally comes from the Salt River via the Arizona Canal, Grand Canal, associated laterals and various groundwater pumping wells (Wood, 2019a, **Appendix G**).

2.4 Geology

2.4.1 Regional Geology

The Site is located on the western portion of the Salt River Valley (WSRV), a broad, relatively level alluvial valley in the Basin and Range physiographic province of Central Arizona. This alluvium represents a combination of deposits from the surrounding mountains and fluvial deposits from the Salt River.

The stratigraphy of the WSRV is divided into the Mountain Bedrock, Pre-Basin and Range Sediments, Lower Basin-Fill, Upper Basin-Fill, and Stream Alluvium (Anderson et al., 1990). In upward sequence, the Mountain Bedrock consists of igneous, metamorphic, and consolidated sedimentary rocks ranging from Precambrian to Cenozoic in age. The Pre-Basin and Range Sediments consist of moderately to highly consolidated continental deposits of silt, clay, gravel, and conglomerate, primarily Tertiary in age. Examples of these sediments would be the Camels Head Formation and the Tempe Beds, exposed in the Papago Park area of east Phoenix. These sediments generally exceed several thousand ft in thickness (Hargis + Associates [H+A], 2014).

Above the Pre-Basin and Range Sediments lie the Lower Basin-Fill Sediments. The thickness, areal extent, and grain size of the Lower Basin-Fill Sediments are variable, but generally consist of weakly to highly consolidated gravel, sand, silt, and clay and may include interbedded evaporate deposits and volcanic rocks at selected locations. The Lower Basin-Fill Sediments typically include 2,000 to 7,000 ft of fine-grained sediments of silt and clay at the base, in the center of the basins in which these deposits are found (H+A, 2014).

The Upper Basin fill is generally composed of unconsolidated to moderately consolidated fanglomerates and alluvial deposits laid down during the last stages of the Basin and Range disturbance. This unit also grades into finer-grained facies towards the interiors of the basins but is generally coarser than the lower unit and with less evaporites. This unit generally produces substantial amounts of groundwater compared to the lower units. Some fine-grained deposits in this unit impede the vertical migration of groundwater, such that perched or semi-perched conditions exist. The Upper Basin fill is composed mainly of silt, sand, and gravel; locally, relatively thin clay layers can be present. Within the WSRV, the unit is predominantly gravel and sand with some thick zones of cobbles near the present channels of the Salt River. Gravel and sand are also found in areas north and south of the present-day channel, where ancestral channels were located (H+A, 2014).

The upper-most geologic unit in the WSRV is the Stream Alluvium, which represents stream channel and related sediments typically up to 1,200 ft thick. This sedimentary unit was deposited after the basins were filled, and during the establishment of the present drainage system. Stream Alluvium sediments consist of floodplain, channel-fill, alluvial-fan, and playa deposits. The Stream Alluvium is generally unconsolidated, except where cemented by caliche. Grain size ranges from boulder-and cobble-size gravel in the alluvial

fans to clays in local playa deposits. In general, sand and gravel are found along the stream channels (Anderson et al., 1990).

2.4.2 Site Geology

The site-specific geology was developed based a on a review of available boring logs (**Appendix A**). The Site has been assessed to depths ranging from 285-300 ft below ground surface (bgs) (**Figures 2-5**).

The upper alluvial unit (UAU) at the Site consists predominantly of silt, clay, sand mixed with silt and/or clay, and gravel. The lithology at upgradient well BMW-02E and downgradient well BMW-16D is summarized on the following pages.

Bedrock, identified as the Camels Head Formation, was encountered at a depth of 276 ft (923.53 ft amsl) at BMW-02E. Bedrock was not encountered at monitoring wells BMW-14D and BMW-16D. Bedrock was encountered at BMW-10D at a depth of 285 ft bgs (863.63 ft amsl). Therefore, the UAU/Camels Head Formation contact drops approximately 60 ft in a southwesterly direction between BMW-02E and BMW-10D, which is a slope of approximately 0.007 feet per foot (ft/ft) (**Figure 4**).

2.5 Hydrogeologic Setting

2.5.1 Regional Groundwater Conditions

The Site lies within the WSRV Sub-basin of the Phoenix Active Management Area (AMA), which includes the communities of Phoenix, Buckeye, Surprise, Glendale, Peoria, Goodyear, Tolleson, and Avondale. The WSRV is one of seven sub-basins located in the Phoenix AMA. The AMA was established due to the 1980 Arizona Groundwater Management Act. Although conditions and circumstances vary across the Phoenix AMA, groundwater is generally pumped from the deeper portions of the UAU. Natural groundwater recharge occurs along stream channels and from mountain-front recharge. Groundwater also enters the sub-basin from the Lake Pleasant, northern Hassayampa, and East Salt River Valley sub-basins, and from the Maricopa-Stanfield Sub-basin in the Phoenix AMA. Agricultural irrigation water and effluent discharged from the COP 23rd and 91st Avenue wastewater treatment plants also recharges the groundwater (NV5 Environmental Services, 2015).

2.5.2 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 United States Bureau of Reclamation in 1976. These include from the shallowest to deepest: the UAU, the Middle Alluvial Unit (MAU), and the Lower Alluvial Unit (LAU). The MAU and LAU are not apparently present at the Site.

The UAU consists of unconsolidated sands and gravels deposited by flowing drainages and is the most permeable unit. According to the ADWR, the UAU is typically 300 to 400 ft thick in the WSRV. Where thick saturated sections of the UAU are present, the groundwater production rates are the highest in the region. At the Site, the UAU ranges from 276 to greater than 300 ft thick.

BMW-02E						
Depth (ft bgs)	Summary Description					
0-67	sandy silt					
67-75	clay with gravel					
75-88	gravelly silt with sand					
88-103	silt with sand					
103-119	gravelly silt with sand					
119-125	sandy silt with gravel					
125-127	silt with gravel					
127-130	silty gravel with sand					
130-137	gravelly silt					
137-154	silt with sand					
155-157	gravelly silt with sand					
157-174	sandy clay					
174-187	sandy silt					
187-197	clay with gravel					
197-217	sandy silt with gravel					
217-223	sandy clay with gravel					
223-236	silty sand with gravel					
236-243	sandy clay with gravel					
243-248	clayey gravel with sand					
248-276	sandy silt with gravel					
276	bedrock – Upper Camels Head Formation					

Notes:

ft bgs - feet below ground surface

BMW-16D							
Depth (ft bgs)	Summary Description						
0-25	silt with sand						
25-44	sandy silt with gravel						
44-73	silt with sand						
73-95	silt with clay						
95-107	clay with sand						
107-127	silty gravel with sand						
127-148	clay with sand						
148-151	sandy silt with gravel						
151-166	clay						
166-172	clayey sand						
172-187	Clay						
187-202	clay with gravel						
202-226	clayey sand with gravel						
226-240	sandy clay with gravel						
240-253	silty sand with gravel						
253-265	sandy clay with gravel						
265-276	clayey sand with gravel						
276-279	silty sand with gravel						
279-286	gravelly clay with sand						
286-290	clayey sand with gravel						

Notes:

ft bgs - feet below ground surface

2.6 Site Hydrogeology

The hydrostratigraphic units have been defined based on review and evaluation of data generated during groundwater assessments at the ECP WQARF sites. The hydrogeology has been investigated to a maximum depth of approximately 300 ft bgs within the UAU. The base of the UAU was encountered at BMW-02E, BMW-09D, BMW-10D, BMW-17D, BMW-18D, and BMW-19D (**Figures 4 and 5**). At the Site, the UAU ranges from 276 ft thick at BMW-02E to greater than 300 ft thick at BMW-14D. The UAU at the Site consists of predominantly fine-grained sands, silts and silt with sand, to sandy silts with trace amounts of gravel. The groundwater surface within the Site lies within the UAU.

Monitoring well construction details for the Site are presented in **Table 1**. Groundwater elevations in the UAU at the Site have been monitored since June 2003 (**Table 2**; **Appendix B** - hydrographs). Monitoring wells installed at the Site are screened across both shallow (water table) and deeper intervals within the UAU (**Figures 4 and 5** and **Table 1**). Groundwater elevations have generally declined at the Site since 2003. The current depth (October 2019) to water ranges from 39.10 ft below top of casing (btoc) (1,161.99 ft amsl) at BMW-03A to 82.90 ft btoc (1,048.79 ft amsl) at BMW-16D (**Figure 6 and Table 2**).

The current and historical direction of groundwater flow (**Figure 6**) has been to the west-southwest. On October 15, 2019, groundwater flowed at a gradient of approximately 0.01 ft/ft. Vertical gradients between the shallow and deeper zones of the UAU monitored at the Site are generally negligible. The estimated horizontal hydraulic conductivity of the UAU at the Site is variable due to the heterogeneity of the UAU. Based on the results of groundwater modeling that has been performed, the horizontal hydraulic conductivity ranges from 21 to 30 ft/day (Fluid Solutions, 2000).

2.7 Ecology

The Site is located in an urban setting that provides low-quality habitat for native terrestrial or aquatic biota. Given the presence of roads and extensive man-made structures, it is likely that the natural vegetation, soils, and hydrology have been altered by filling, grading, and improvement activities in the past. There is a low potential for native terrestrial or aquatic biota to occur in the area. The closest large, natural open space (Camelback Mountain) is located approximately 1.5 miles to the northeast of the eastern boundary of the Site.

Based on information provided through the United States Fish and Wildlife Service (USFWS) online Information, Planning and Conservation System and by the Ecological Services Program, there are seven federally listed endangered species with the potential to occur on lands within Maricopa County, including: ocelot (*Leopardus* or *Felis pardalis*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), California least tern (*Sterna antillarum browni*), Mexican spotted owl (*Strix occidentalis lucida*), Southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-billed cuckoo (*Coccyzus americanus*), and Yuma clapper rail (*Rallus longirostris yumanensis*). Additionally, there are a six species of endangered fish and four species of flowering plants (USFWS, 2018). The Site and immediate vicinity do not contain suitable habitat for these species.

3.0 INVESTIGATION SUMMARY

The investigation of the Site began in 1983 when SRP collected groundwater samples from several wells that they were pumping in the Salt River Valley. This included SRP Well 17.9E-7.5N (ADWR 55-617857), which is located within the Site and west of the intersection of 40th Street and Osborn Road (**Figures 1** and **2**). The investigations conducted at the Site have been primarily focused on the groundwater. The investigations conducted per impacted media are summarized in the following subsections in chronological order.

3.1 Groundwater Investigation

The following RI Report attachments are associated with the groundwater investigation:

- Boring logs/well completion diagrams for the Site monitoring wells and borings are included in **Appendix A**;
- PCE concentration versus time graphs for wells BMW-02B, BMW-02C, BMW-03B, and MW-9 are provided in **Appendix B**;
- Available vertical profile sample (VPS) analytical reports are included in **Appendix C**;
- Available groundwater sample analytical reports are included in **Appendix D**;
- The electronic groundwater data in EXCEL format is included on a CD attached as **Appendix E.**
- Historic groundwater VOC data are summarized in **Table 3**; and,
- Screening VPS analytical results are summarized in Table 4.

With the exception of one sample collected from SRP Well 17.9E-7.5N on November 14, 1996 that was detected with 9.9 μ g/L of trichloroethene (TCE) (exceeded AWQS of 5.0 μ g/L), PCE has been the only VOC within the Site that has exceeded the AWQSs. Up until the October 2019 groundwater sampling event, the only other VOC that had been detected is chloroform. In the October 2019 samples, toluene and carbon disulfide, which are associated with petroleum releases, were reported at concentrations below AWQSs in samples collected from BMW-18D and BMW-19D. Therefore, **Table 3** summarizes historic PCE, TCE, and chloroform results. Cis-1,2-dichloroethene (c-1,2-DCE) is included in **Table 3** because it is a known degradation daughter product TCE. Other detected VOCs are also listed individually in **Table 3**.

The groundwater investigation of the Site started on July 1, 1983 when SRP collected a sample that was analyzed for VOCs from Well 17.9E-7.5N. From July 1, 1983 to June 13, 2003, this well was indicated to be the only well sampled in the area (**Table 3**). The first monitoring well installed at the Site was shallow monitoring well BMW-01A on June 2, 2003. No other wells were installed until 2008. The last monitoring well installed for the RI groundwater investigation was BMW-19D, which was completed on September 24, 2019. The last RI groundwater monitoring event was performed October 15-16, 2019.

The groundwater investigation of the Site consisted of collection of groundwater samples across the entire thickness of the aquifer, from near the water table (shallowest 28.9 ft bgs) to as deep as 285 ft bgs (VPS collected from BMW-14D). Bedrock was encountered in multiple well borings. The monitoring wells are designated Zone A-D as follows based on depth and screened interval:

		Screened Interval Range ¹	Sample Depth Range ²
Zone	Well IDs	(ft btoc)	(ft btoc)
A	BMW-01A, BMW-02A, BMW-03A, BMW-04A,	20-105 (across water table at all wells)	30-100
	BMW-07A, BMW-10B ³ , MW-1, MW-7, MW-8,		
	MW-9, and MW-10		
В	BMW-01B, BMW-02B, BMW-03B, BMW-04B, BMW-07B, and BMW- 09C	70-120 (submerged at all wells)	70-115
С	BMW-02C	95-130 (submerged)	100-120
D	BMW-02E ⁴ , BMW-09D, BMW-10D, BMW-11D, BMW-14D, BMW-16D, BMW-17D, BMW-18D, and BMW-19D	155-275 (submerged at all wells)	160-265

Notes:

 Screened interval range is in feet below top-of-casing (ft btoc) and is obtained from Table 1. Depth-water ranges at the Site ranges from 39.10 ft btoc at BMW-03A to 82.90 ft btoc at BMW-16D

2) Sample depth range in in ft btoc and is obtained from **Table 3.**

3) BMW-10B is grouped as a Zone A well.

4) BMW-02E replaced the well that was supposed to be installed in BMW-02D. Therefore, it is grouped as a Zone D well.

During drilling of the monitoring wells (exceptions were BMW-02C and BMW-04B) and borings BMW-02D, BMW-08D, BMW-15D, and SMW-14B, VPSs were collected from near the water table to the bottom of the boring (**Table 4**). The VPSs were analyzed for PCE, TCE, c-1,2-DCE, and chloroform to make field adjustments in well construction.

In April 2019, shallow (Zone A) monitoring wells MW-1, MW-7, MW-8, MW-9, and MW-10 associated with the Former Mobil Station #18KDP located at 3141 East Thomas Road (leaking underground storage tank [LUST] file number 3004) were incorporated into the RI monitoring program to further define the distribution of PCE. As shown in **Table 1**, these wells were installed from 2000-2004. However, samples collected from these Zone A wells were not analyzed for the Site-specific VOCs until 2010 (**Table 3**). These wells were instrumental in identifying the shallow PCE plumes and their locations are shown on **Figures 1 and 3**. Petroleum-related VOCs 1,2-dichloroethane (1,2-DCA) and methyl-tert-butyl-ether (MTBE) have been historically detected in samples collected from MW-7 and MW-10 (**Table 3**). 1,2-DCA has been detected above the AWQS of 5.0 µg/L in historic samples collected from MW-7, maximum 102 µg/L in the November 19, 2003 sample. 1,2-DCA has not been detected above 5.0 µg/L in samples collected from MW-7 and MTBE historically detected in samples collected in samples collected above 5.0 µg/L in samples collected from MW-7 and MW-10 are located outside the Site. Therefore, though listed in **Table 3**, the 1,2-DCA and MTBE historically detected in samples collected from samples collected from MW-7 and W-10 are located outside the Site. Therefore, though listed in **Table 3**, the 1,2-DCA and MTBE historically detected in samples collected from these wells were not evaluated by the RI.

PCE was detected in Zone A VPSs collected during drilling of well BMW-10D, which was confirmed by samples collected from BMW-10B on October 16, 2019. Samples collected from Zone A wells MW-8 and MW-9 have been reported with PCE concentrations above 5.0 μ g/L. As shown on **Figures 4 and 5**, the PCE

detected in the Zone A samples is separate from the PCE detected in Zone B, C, and D samples. Therefore, the discussion of the groundwater investigation is divided into the investigation of the deep, main PCE plume, which is identified as the Site, and the shallow PCE plumes.

A total of 22 monitoring wells has been installed at the site. Six shallow, seven medium, and nine deep. Shallow = depths from 30 to 100 ft bgs, medium depths = 70 to 120 ft bgs, and deep depths range from 120 to 265 ft bgs.

3.1.1 Site PCE Plume

The Site PCE plume is described as follows (Figures 2 and 4):

- Extending from 112.5 ft bgs (1087.03 ft amsl) to 260 ft bgs (939.63 ft amsl) at BMW-02C/E (approximately 147.5 ft thick) at the upgradient end of the plume; and,
- Extending from 208 ft bgs (923.69 ft amsl) to approximately 245 ft bgs (886.69 (ft amsl) at BMW-16D (approximately 37 ft thick) at the downgradient end of the plume.

The entire plume is submerged below the water table and the decreasing thickness in the downgradient direction is controlled by the groundwater gradient and the underlying bedrock.

Between April 2008 and September 2019, 16 monitoring wells were installed to characterize the aerial and vertical extents of the Site PCE plume as follows:

- 5 Zone B wells Site wells BMW-01B, BMW-02B, BMW-03B, BMW-04B, BMW-07B, and BMW-09C;
- 1 Zone C well BMW-02C; and,
- 9 Zone D wells BMW-02E, BMW-09D, BMW-10D, BMW-11D, BMW-14D, BMW-16D, BMW-17D, BMW-18D, and BMW-19D.; and 48th & IS site wells.

The depth and sample intervals for each Zone are provided in the table on **Page 10**. Four borings identified as BMW-02D, BMW-08D, BMW-15D, and SMW-14B were also drilled with VPSs collected at depths ranging from 40 ft bgs to 285 ft bgs, encompassing Zones A-D (**Table 4**)

In February 2016, H+A collected VPSs from SRP Well 17.9E-7.5N using passive diffusive bag (PDB) samplers. Samples were collected from 56.7 ft bgs, 74.0 ft bgs, 91.3 ft bgs, and at 10-foot intervals between 105.0 to 265.0 ft bgs. Groundwater samples were submitted to the laboratory for VOC analysis; no compounds were detected above reporting limits in the samples collected from the well (H+A, 2016). The results are summarized in **Table 3** and the analytical report is included in **Appendix D**.

A site-wide groundwater monitoring event was performed October 15-16, 2019 (Wood, 2019c). Analytical results are summarized in **Table 3**. The aerial distribution of the Site PCE plume is shown on **Figure 2** and the vertical distribution is shown on **Figures 4 and 5**, respectively. The October 15, 2019 groundwater elevations are shown on **Figure 6**, which shows groundwater flows in a southwesterly direction. The maximum PCE concentration reported was 120 µg/L in samples BMW-02E-160 (1,039.63 ft amsl), BMW-02E-260 (939.63 ft amsl), and BMW-17D-140 (1,050.00 ft amsl).

3.1.2 Shallow PCE Plumes

As previously discussed, PCE was not detected above 5.0 μ g/L in a Zone A sample collected within the Site vicinity until PCE was detected in the May 11, 2010 sample collected from MW-9 associated with Former Mobil Station #18KDP located at 3141 East Thomas Road. However, the Site at that time was limited to the area of SRP Well 17.9E-7.5N. PCE was first detected above 5.0 μ g/L in Site-specific Zone A VPSs collected during drilling of BMW-10D (8.06 μ g/L @ 77 ft bgs and 8.58 μ g/L @ 96 ft bgs) (**Table 4**). As shown on, the shallow and Site PCE plumes at BMW-10B/D are separated vertically by approximately 140 ft (**Figures 4 and 5 and Table 4**). With the installation of BMW-10D, the Site plume was extended further downgradient, encompassing the surface area that included the Zone A wells associated with Former Mobil Station #18KDP.

While conducting a well search in the vicinity of the intersection of 32nd Street and Thomas Road, several monitoring wells associated with two leaking underground storage tank (LUST) sites were identified. The LUST sites are the Former Mobil Station #18KDP, LUST file number 3004, and Supersonic Carwash, 3202 East Thomas Road, Phoenix, Arizona, LUST file number 1636. A total of 13 monitoring wells were installed for Mobil Station #18KDP, identified as MW-1 through MW-11, DPW-3, and DPW-4. MW-2 has been abandoned. A single monitoring well, identified as Supersonic MW-1, was also installed at Supersonic Car Wash. LUST file number 3004 was closed by the ADEQ Corrective Action Section (CAS) on May 19, 2016 per A.A.C R18-12-263.04, which allows closure of a LUST site with fuel-related contaminants in the groundwater above AWQSs. However, LUST file number 1636 remains open and MW-1, MW-3 through MW-11, DPW-3, and DPW-4 continue to be monitored for LUST file number 1636. Ownership of these wells have been transferred to ADEQ. Historic analytical data for these wells was provided by the ADEQ State Lead Underground Storage Tank unit. At the request of ADEQ, groundwater samples were collected from MW-1, MW-8, MW-9, and MW-10 on April 24, 2019 to further define the extent of the PCE plume. The locations of MW-1, MW-8, MW-9, and MW-10 are shown on Figures 1 and 3 and construction details are provided in Table 1. As shown in Table 3, PCE was detected above 5.0 µg/L in the samples collected from MW-8 (8.6 μq/L) and MW-9 (25 μq/L). Though not sampled on April 24, 2019, samples collected from MW-7 (see Figures 1 and 3 for location) since March 2010 had not been detected with PCE. Therefore, the PCE detected in MW-8 was identified as a separate shallow PCE plume with an unknown source.

Based on the above, two shallow PCE plumes have been identified as shown on **Figures 3 and 5**. The first shallow plume is identified in samples collected from MW-9 and BMW-10B. This plume directly overlies the deeper Site PCE plume. Lateral extent is defined on the north by MW-7 and MW-10, on the south by BMW-19D, and in the downgradient direction by BMW-14D and BMW-16D. The source of this PCE plume is unknown. The second shallow PCE plume is identified in samples collected from MW-8. This plume is defined on the south and separate from the first shallow PCE plume by MW-7 and MW-10. The downgradient extent and lateral extent on the north are unknown. The source of the second shallow PCE is also unknown.

ADEQ is in the process of assessing the shallow PCE plumes and identifying the source(s). Therefore, ADEQ has determined that the shallow PCE plumes are not included in the Site and are not included in this RI.

3.2 Soil Vapor Investigation

In June 2008, five (5) shallow passive soil vapor modules were placed at 30-foot intervals with depths ranging from 18 inches to 32 inches upgradient of SRP Well 17.9E-7.5N and along the Osborn Road easement west of 40th Street (H+A, 2014). This area is identified as having the highest dissolved PCE concentrations in the groundwater at the Site, maximum of 120 μ g/L at sample BMW-02E-160 (**Figures 2 and 4**).

Passive soil gas (PSG) surveys only provide the mass of contaminant sorbed to the sampling device. Passive soil gas surveys can be used to identify source/release locations, the extent of contamination, and intrusive sampling locations (soil, soil vapor, and groundwater). The results of the limited PSG survey are provided in **Table 5.** PCE was detected in a single sample with a reported mass of 0.05 micrograms (μ g). The remaining samples had PCE concentrations of less than the method detection limit of <0.02 μ g.

PSG surveys were performed during the RI of the 48th & IS site where a source has been identified and shallow PCE groundwater contamination near water table is present (approximately 40 ft bgs). The PCE mass observed in the samples ranged from less than 25 nanograms (ng) (<0.025 μ g) to 3,512 ng (3.152 μ g). A comprehensive active soil gas and indoor air sampling program demonstrated that a vapor intrusion (VI) risk to indoor air was not present (Wood, 2019b). Based on this assessment, the low PCE concentration of 0.05 μ g in the PSG sample collected at the Site does not indicate the presence of a soil vapor plume originating from the Site that would represent a VI or indoor air risk.

4.0 **RISK EVALUATION**

The site COC is dissolved PCE in groundwater. The potential exposure pathways to PCE in groundwater are ingestion, dermal contact, and inhalation. The inhalation pathway is further divided into exposure of PCE volatilizing from impacted groundwater being used by potential receptors and by migration of vapor-phase PCE from the subsurface into buildings, referred to as VI.

When present in groundwater and under certain conditions, PCE can emit vapor at the contact between the vadose (unsaturated) and saturated zones. The PCE vapors can then move upward through voids in the soil into buildings, potentially through cracks in the building foundation or slab, where they accumulate to levels that may cause health effects. The conditions susceptible for VI typically consist of elevated dissolved PCE concentrations at or near a source, presence of shallow groundwater, and the dissolved PCE is located near the surface of the water table. Soil gas and indoor air quality (IAQ) sampling is typically performed to evaluate VI associated with VOC impacted groundwater.

Evaluation of Site conditions was performed to assess the VI exposure pathway. Additionally, the results of the comprehensive VI assessment performed at the adjacent 48th & IS site, where conditions susceptible to VI existed, were compared to the on-Site PSG results (Wood, 2019b).

At the Site, the dissolved PCE plume is deep, greater than 110 ft btoc at the shallowest point in the plume and greater than 200 ft btoc at BMW-16D. The PCE plume is also approximately 70 ft below the water table at BMW-02C and BMW-17D and is approximately 125 ft below the water table at BMW-16D. The dissolved PCE concentrations are not detected above method detection limits in Site VPSs and groundwater samples

collected near the water table. Therefore, vapor-phase PCE is likely not present at the water table, which ranges from approximately 41 ft btoc at BMW-02E to approximately 83 ft btoc and BMW-16D. The comprehensive VI assessment at the adjacent 48th & IS site, which was performed 0.5 miles northeast of BMW-02C/E, included PSG, active soil gas, and indoor air samples. The results of the VI assessment at the adjacent 48th & IS site demonstrated that a VI risk did not exist. The results of the limited PSG survey performed at the Site were compared to the results of the comprehensive VI assessment performed at the adjacent 48th & IS site. The results of the results of the comprehensive VI assessment performed at the results of the comparison and evaluation of Site conditions indicate that a VI risk to indoor air originating from the Site PCE plume is likely not present.

Based on the above, the risk evaluation is limited to the groundwater exposure pathways.

4.1 Applicable Regulatory Standards and Screening Criteria

The COC at the Site is dissolved PCE in groundwater. The applicable regulatory standards are associated with groundwater. AWQS are State of Arizona maximum levels for COCs that apply to groundwater in aquifers designated for drinking water use. The only COC present above the AWQSs is PCE. The AWQS for PCE is $5.0 \mu g/L$.

4.2 Potential Receptors

Prior to performing the exposure pathway evaluation, potential receptors to the Site COC were identified. The boundary (**Figure 2**) includes an area encompassing residential and commercial/industrial settings. Potential receptors are identified as current and future residential individuals, commercial/industrial workers, and construction workers occupying areas within the boundary.

Residential individuals include children and adults occupying residential locations within the boundary. A residential location is typically one where someone is present for an average of more than eight hours a day. It includes, but is not limited to, schools; dwellings; residences; correctional facilities; any other human activity areas of repeated, frequent use and/or chronic duration; and locations that typically house sensitive populations such as grade schools, hospitals, childcare centers, and nursing homes. Due to the depth of the dissolved phase PCE and that impacted groundwater is not being pumped in the area, the dissolved PCE in the groundwater does not currently pose a risk to residents at the Site.

Commercial/industrial workers include adults working at the businesses within the Site boundaries. Due to the depth of the dissolved phase PCE and that impacted groundwater is not being pumped in the area, the dissolved PCE groundwater does pose a risk to commercial/industrial workers in the area of the Site.

4.3 Ecological Risk Evaluation

As defined, an ecological receptor is "a specific ecological community, population, or individual organism, protected by federal or state laws and regulations, or a local population that provides an important natural or economic resource, function, and value" (A.A.C. R18-7-201). Wildlife or vegetation that is present in the study area is likely non-native to the area, is habituated to human presence, or has been maintained in a horticultural setting. Areas and land use within the Site boundary (**Figure 2**) do not contain suitable habitat for the five federally listed species. Due to the presence of COCs at depth, the urban character of the site, and lack of ecological receptors within the boundary, an evaluation of ecological receptors is not warranted.

4.4 Risk Evaluation

An exposure or migration pathway is the route by which the potential hazard (identified COCs) migrates from the source (soil vapor, soil, surface water, or groundwater) to a receptor. Pathways can include:

- Inhalation of PCE vapors emitted from water;
- Dermal contact with impacted groundwater; or
- Ingestion of impacted groundwater.

An exposure pathway is complete when all four of these components are present: 1) a source and mechanism of chemical release; 2) a retention or transport medium (pathway); 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, dermal, inhalation).

The land use at the Site is commercial/industrial, residential, and public open space. This exposure pathway evaluation, therefore, assesses potential pathways by which long-term commercial workers, short-term construction workers, visitors to the site and residents may be exposed to the Site COC, PCE. This section evaluates whether the pathways are currently complete and if so, assesses the potential risk to receptors based on the concentrations of site COCs.

The Exposure Pathway Model for the Site is provided as **Figure 7.** Impacted groundwater is currently not being used at the Site. Therefore, the exposure pathways for residential individuals, commercial/industrial workers, and construction workers were determined to be incomplete.

4.5 Conceptual Site Model

The dissolved PCE in the groundwater at the Site is a direct result of PCE releases to the subsurface. However, the source facility is unknown. A previously shallow, relatively horizontal PCE plume entered the zone of influence of SRP Well 17.9E-7.5N. The dissolved PCE plume was then drawn into the well. When pumping was discontinued in the mid-1980's, the dissolved PCE began to migrate downgradient with the ambient groundwater flow. The ambient groundwater gradient is currently approximately 0.01 ft/ft. Based on aquifer tests that were performed, horizontal permeability in the sediments below the Site ranges from 21 to 30 ft/day (Fluid Solutions, 2000). Applying an effective porosity of 0.25, the groundwater velocity currently ranges from 0.8 to 1.2 ft/day or 292 to 438 ft/year. The dissolved PCE has migrated approximately 10,660 ft from SRP Well 17.9E-7.5N to BMW-16D over a period of less than 35 years since the well was shut down, which is consistent with the range of flow velocity.

5.0 CURRENT AND FUTURE LAND AND WATER USE

This RI includes the collection of information regarding current and reasonably foreseeable uses of land and/or waters of the state that have been or could be impacted by the release of the Site COC, and projected time-frames for future changes in those uses. Reasonably foreseeable future land uses are those that are likely to occur at the site. Reasonably foreseeable future water uses are those that are likely to occur within 100 years unless a longer period is shown to be reasonable based on site-specific circumstances.

ADEQ prepared a standardized questionnaire requesting specific information regarding property, on-site wells, water use, and waste streams, and mailed to COP and SRP. Responses were received from COP and SRP. Additional information was obtained from publicly available COP, SRP, and ADWR databases and/or documents. A combined Land and Water Use Report was prepared for the Site and 48th & IS site (Wood, 2019a). Based on comments from the COP and SRP to this RI Report, minor changes were made to the Land and Water Use Report. The Revised Land and Water Use Report is included in **Appendix F** (Wood, 2020).

Evaluation of land and water uses is being considered as part of the RI Report and will be reflected in the Proposed Remedial Objectives (RO) Report (see Section 7.3).

5.1 Current Land Use

The Site is located in the COP Camelback East Village (CEV). Current zoning districts within the Site are identified below and are shown on **Figure 4** in **Appendix F**.

Zoning District	Description						
C-1	Commercial – Neighborhood Retail	3.00					
C-2	Commercial – Intermediate Commercial						
P-1	Passenger Automobile Parking, Limited (Surface parking)						
PAD-13	Planned Area Development (No longer available for rezoning)	0.66					
R1-6	Single Family Residence (Density range of 5 to 5.5 or 6.5 with bonus)	45.96					
R-3	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 14.5 to 15.23 or 17.4 w/bonus)	18.26					
R-3A	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 22 to 23.1 or 26.4 w/bonus)	0.28					
R-4	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 29 to 30.45 or 34.8 w/bonus)	11.06					
R-4A	Multi Family Residence	0.38					
R-5	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 43.5 to 45.68 or 52.2 w/bonus)	10.92					

The COP identified the land uses in the vicinity of the Site as commercial, retail, office, multi-family, single family, parking, and school.

5.2 Future Land Use

The CEV Planning Coordinator and CEV Planning Committee meet regularly to accept and review requests for zoning changes within the CEV. The COP response to their questionnaire indicated there are no current foreseeable plans to alter current zoning districts in the Site vicinity. Property owners can file to change the zoning designation of their property. Requests for zoning changes must go through a public hearing and be approved by the City Council prior to finalization.

5.3 Current Water Use

The Site lies within the Phoenix AMA (**Appendix F** – Figure 5) (ADWR, 2014). 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. An exempt well is a well with a maximum pumping capacity of 35 gallons per minute (gpm). Exempt wells may be used to withdraw groundwater only for non-irrigation purposes and are generally used for domestic purposes. All exempt wells must be registered with the ADWR. Exempt well owners are not required to report their annual pumpage volumes to ADWR. Non-exempt wells have a pumping 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. Non-exempt well owners must report their annual pumpage volumes to ADWR.

5.3.1 Non-Exempt Wells

According to ADWR records, there are 14 non-exempt withdrawal wells located within 1-mile of the Site of which 12 are owned and operated by SRP (**Table 4; Appendix F** – Figure 6). However, SRP well 17.5E-7N is capped and inactive. One is owned by COP and one is owned by Maricopa County. According to ADWR records, the well owned by Maricopa County was used for de-watering purposes. The COP and SRP have service area rights within the area of the Site; however, only SRP is currently pumping groundwater in the area.

5.3.1.1 SRP

As a water supplier, SRP delivers approximately 800,000 acre-feet of water to the Phoenix area each year. In normal runoff years, most of the water is supplied from surface water on the Salt and Verde Watersheds. However, in more dry years, more groundwater must be pumped to supplement the surface water supply. During extended periods of low run off, groundwater can account for almost one-third of the total SRP water supply.

Typically, groundwater comprises approximately 15% of the total water supplied by SRP to municipal treatment plants. The groundwater contribution varies seasonally with the highest contribution occurring March through August.

SRP operates and maintains 11 irrigation wells within one mile of the PCE plume boundary of the Site. The most recent PCE concentrations detected in these wells is as follows:

SRP Well Number	ADWR 55 Registration Number	Approximate distance from Site	Intersection (Local Area)	Most Recent PCE Concentration (µg/L)
16.9E-6N	55-608380	0.5 miles south of Site	30th/McDowell	0.8 (2018)
16E-6.8N	55-607726	0.7 miles west of Site	24th/Cambridge	4.1 (2017)
17.9E-7.5N	55-617857	500 ft southeast of Site	40th/Osborn	1.6 (2016)
17E-8N	55-608431	0.75 miles northwest of Site	32nd/Indian School	0.6 (2017)
17.1E-7.4N	55-607731	0.34 miles northwest of Site	32nd/Osborn	1.1 (2017)
18E-7N	55-617849	0.4 miles southeast of Site	40th/Thomas	ND
18E-8.8N	55-617825	0.97 miles north of Site	40th/Coolidge	ND

SRP Well Number	ADWR 55 Registration Number	Approximate distance from Site	Intersection (Local Area)	Most Recent PCE Concentration (µg/L)
18.5E-7N	55-607712	0.68 miles southeast of Site	43rd/Thomas	ND
18.6E-7.6N	55-202398	0.43 miles southeast of Site	44th/Osborn	ND
19E-7.6N	55-608433	0.75 miles east of Site	48th/Whitton	ND
19E-8.1N	55-607748	0.95 miles northeast of Site	48th/Indian School	ND

Notes:

1) Distance is presented as shortest distance to plume boundary presented in Appendix F - Figure 6.

 Bolded value indicates concentration detected above the Arizona Department of Environmental Quality Aquifer Water Quality Standard of 5.0 µg/L.

 Data obtained from SRP via questionnaire (Appendix F - Attachment A) and SRP questionnaire provided in the 24h Street and Grand Canal Site Land and Water Use Study (H+A, 2018).

4) ND – not detected above the laboratory reporting limit (LRL(s)).

5) $\mu g/L$ – microgram per liter.

6) PCE - tetrachloroethene

As indicated above, no SRP wells near the Site had recent PCE concentrations above the AWQS of 5.0 μ g/L. However, samples collected from SRP well 17.9E-7.5N have been reported with PCE concentrations in excess of the AWQS of 5.0 μ g/L at a maximum concentration of 210 μ g/L in 1998 (**Table 3 and Appendix F** -Section 1.5). Groundwater pumpage at these wells has been intermittent in the recent past, but the wells can be activated at any time.

5.3.1.2 City of Phoenix

The COP relies on four primary water supply sources: SRP, the Central Arizona Project (CAP) canal, groundwater pumped from COP wells, and reclaimed water. As indicated in the COP questionnaire response (**Appendix F** – Attachment A), the COP stated it does not own any wells near the Site and no active groundwater pumping by the COP occurs in or near the Site. However, according to ADWR records for 55-626525, the COP does own a production well located at Perry Park near the intersection of Virginia Avenue and 32nd Street (**Appendix F** – Figure 6). This well is located within the Site. This well was historically used to fill the swimming pool at Perry Park; however, it is currently inactive.

5.3.2 Exempt Wells

ADWR records indicate that there are four exempt withdrawal wells located within one-mile of the Site. Each of these wells are permitted by ADWR for domestic irrigation use (**Appendix F** – Table 4; **Appendix F** – Figure 6). Exempt wells refer to domestic wells with a capacity of less than 35 gpm and this withdrawal is not a grandfathered right according to A.R.S. § 45-454. According to ADWR records, these wells are currently not being pumped. According to ADWR records, the nearest exempt well to the Site, 55-501994, was capped in 2017.

5.4 Future Water Use

5.4.1 Salt River Project

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 system. Based on demand analysis, SRP has indicated it will continue to need the wells in the area to remain operational, especially during dry years.

SRP anticipates all its properties in the vicinity of ECP WQARF Area will remain in use over the next 100 years. Additionally, SRP anticipates that these wells will transition from irrigation to municipal service (potable supply) within the next 100 years. According to the questionnaire response, SRP does not plan on installing any new wells at the Site; however, this could change pending COP water needs.

5.4.2 City of Phoenix

There are several factors which may impact the available COP water supply including:

- Cyclical drought;
- Increasing demands in the Upper Colorado River Basin States (Utah, Colorado, Wyoming, and New Mexico) affecting Arizona's supply of Colorado River water;
- The availability of water supplies from the Arizona Water Banking Authority to the CAP to offset shortages;
- Climate variability impacts on long-term flows, reservoir storage and deliveries by SRP and CAP;
- The probability of low reservoir conditions occurring in both watersheds simultaneously;
- State legal, institutional, or policy changes impacting surface water availability;
- The availability and volume of groundwater supplies without aquifer replenishment; and
- Impacts of increased groundwater pumping in the SRP watershed on river flow and reservoir storage.

If Colorado River flow should decline, the allotment of CAP water for the COP and surface water supplies from SRP may be reduced if reservoir 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 (**Appendix F** – Figure 8). However, high increases in consumption coupled with severe reductions in surface water supplies could require that COP begin to tap its reserves in groundwater by 2025. (**Appendix F** – Figure 9).

Since local groundwater is an alternate water source for COP, planning is ongoing for the expansion of well capacity within the service area or the development of new service area wells (**Appendix F** – Attachment A). If the volume of water supplied by SRP and/or CAP is reduced, the COP may supplement water supplies with groundwater pumped from new production wells located in the vicinity of the site.

6.0 FINAL RI DOCUMENT

This Final RI Report includes two documents that were related to the public comment period for the draft version of the report. The Responsiveness Summary Report that discusses the public comments received is included in **Appendix G** (ADEQ, 2020b). The Final Remedial Objectives (RO) Report is included in **Appendix H** (ADEQ, 2020c).

7.0 DATA GAPS

Based on review of the available data, the following data gaps have been identified:

- The extent of the Site PCE plume has not been defined to the northwest. Two additional monitor
 wells will be installed during FY 2020, identified as BMW-20D and BMW-21D on Figure 1. These
 wells are scheduled to be installed in March 2020 and the results will be presented in the FS Report.
- Where the contaminant plume deepens near wells BMW-17D and BMW-09C/D. The location of this well, identified as BMW-22D, is also shown on **Figure 11**. This well will be installed in April 2020 and the results will be presented in the FS Report.
- Following the installation and sampling of BMW-20D, BMW-21D, and BMW22D, it is anticipated that the Site PCE plume will be defined to regulatory levels and will be presented as such in the upcoming FS Report.

8.0 LIMITATIONS

This RI was performed according to an agreed upon scope of work and does not represent an exhaustive investigation of all potential environmental impacts at the Site. The findings of this report, to the best of our knowledge, are valid as of the date the work was performed. However, changes in the conditions of a site can occur with the passage of time, whether due to natural processes or the works of man on the Site or adjacent properties. In addition, changes in applicable or appropriate regulations and standards may occur, whether they result from legislation, from the broadening of knowledge, or from other reasons. The work was performed using the degree of care and skill ordinarily exercised under similar circumstances by environmental consultants practicing in this or similar localities. No other warranty or guarantee, expressed or implied, is made as to the findings, opinions, conclusions, and recommendations included in this report.

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TABLES



TABLE 1 WELL CONSTRUCTION DATA REMEDIAL INVESTIGATION REPORT, 40TH STREET AND OSBORN ROAD WQARF SITE

SITE	WELL ID	ADWR REGISTRATION NUMBER	DATE COMPLETED	DRILLING METHOD	BORING DIAMETER	BORING DEPTH (FEET BGBS)	CASING MATERIAL/ DIAMETER/ SLOT SIZE	PERFORATED INTERNAL	SAND PACK	FILTER PACK MATERIAL	BENTONITE	TOP OF CASING ELEVATION (1)	GROUND SURFACE ELEVATION (1)	LOCATION CO	OORDINATES (2)
		(55-)			(INCHES)		(INCHES)	(FEET BGS)	(FEET BGS)		(FEET BGS)	(FEET ASML)	(FEET ASML)	LATITUDE (DEG)	LONGITUDE (DEG)
40osb	SRP17.9E-7.5N	617857	5/1/1965	Cable Tool	NR	300	Steel / 18 / Perforated	100.0 - 300.0	48.0 - 300.0	Gravel	NR	NR	1193	NR	NR
40osb	BMW-01A	598109	6/2/2003	Hollow Stem Auger	10	91	PVC / 4 / 0.020	20 - 60	15 - 63	#10-20 Sand	11 - 15 63 - 91	1193.20	1194.38	33.4877	-111.9961
40osb	BMW-01B	909970	12/4/2008	Hollow Stem Auger	8	100	PVC / 2 / 0.020	70 - 100	65 - 100	#10-20 Sand	59 - 65	1193.59	1194.34	33.4878	-111.9961
40osb	BMW-02A*	908743	4/18/2008	Sonic	10	61	PVC / 2 / 0.020	20 - 60	15 - 61	8/12 Sand	10 - 15	1199.66	1200.06	33.4901	-111.9946
40osb	BMW-02B*	908743	4/18/2008	Sonic	10	100	PVC / 2 / 0.020	70 - 100	65 - 100	8/12 Sand	10 - 15 61 - 65	1199.60	1200.06	33.4901	-111.9946
40osb	BMW-02C	917659	3/18/2015	Sonic	8.25 7.125	139.8 140.6	PVC / 4 / 0.020	109.5 - 139.5	106.7 - 140.6	#10-20 Sand	101.6 - 106.7	1199.53	1199.99	33.4901	-111.9946
40osb	BMW-02E	922509	4/10/2019	Sonic	9	280	PVC / 4 / 0.020	155 - 265	153 - 269	#10-20 Sand	147 - 153	1199.63	1199.97	33.4901	-111.9947
40osb	BMW-03A*	908744	5/16/2008	Hollow Stem Auger	10	60.5	PVC / 2 / 0.020	20 - 60	15 - 60.5	8/12 Sand	10 - 15	1201.09	1201.32	33.4895	-111.9929
40osb	BMW-03B*	908744	5/16/2008	Hollow Stem Auger	10	98.3	PVC / 2 / 0.020	70 - 100	65 - 101	8/12 Sand	10 - 15 61 - 65	1201.12	1201.32	33.4895	-111.9929
40osb	BMW-04B	916201	1/3/2014	Sonic	8.625 6.0	120.0 121.7	PVC / 4 / 0.020	78.8 - 118.8	75.4 - 121.7	#10-20 Sand	71.6 - 75.4	1200.32	1200.90	33.4888	-111.9920
40osb	BMW-04A	916200	1/4/2014	Sonic	8.625 6.0	70.0 71.1	PVC / 4 / 0.020	30.0 - 70.0	27.0 - 71.1	#10-20 Sand	23.5 - 27.0	1200.37	1200.86	33.4888	-111.9920
40osb	BMW-07A	916198	12/29/2013	Sonic	8.625 6.0	70.0 74.0	PVC / 4 / 0.020	29.6 - 69.6	26.0 - 70.0	#10-20 Sand	23.0 - 26.0	1189.22	1189.74	33.2034	-111.9982
40osb	BMW-07B	916199	12/28/2013	Sonic	8.625 6.0	115.0 116.0	PVC / 4 / 0.020	85.0 - 115.0	80.0 - 116.0	#10-20 Sand	70.0 - 80.0	1189.20	1189.72	33.4868	-111.9982
40osb	BMW-09C	922867	9/29/2019	Sonic	9.0	135.0	PVC / 4 / 0.020	95.0 - 130.0	93.0 - 130.0	#10-20 Sand	90.5 - 93.0	1170.54	1170.84	33.4823	-112.0069
40osb	BMW-09D	921211	4/2/2018	Sonic	8.25 6.125	234.5 288.0	PVC / 4 / 0.020	180.7 - 230.7	176.5 - 234	#10-20 Sand	170.5 - 176.5	1170.44	1170.77	33.4823	-112.0069
40osb	BMW-10B	922868	9/5/2019	Sonic	9.0	107.0	PVC / 4 / 0.020	75.0 - 105.0	73.0 - 105.0	#10-20 Sand	70.0 - 73.0	1149.25	1149.60	33.4765	-112.0173
40osb	BMW-10D	921212	4/25/2018	Sonic	8.25 6.125	233.0 293.0	PVC / 4 / 0.020	230.6 - 280.6	227.5 - 280.6	#10-20 Sand	221.5 - 227.5	1148.63	1149.67	33.4765	-112.0339
40osb	BMW-11D	921213	5/9/2018	Sonic	8.25 6.125	233.0 241.0	PVC / 4 / 0.020	151.0 - 211.0	148.0 - 214.0	#10-20 Sand	140.0 - 148.0	1180.11	1180.61	33.4828	-111.9998
40osb	BMW-14D	922019	10/31/2018	Sonic	9.0	300.0	PVC / 4 / 0.020	225.0 - 275.0	223.0 - 277.0	#10-20 Sand	221.0 - 223.0	1135.93	1136.31	33.4730	-112.0239
40osb	BMW-16D	922021	4/19/2019	Sonic	9.0	290.0	PVC / 4 / 0.020	205.0 - 275.0	203.0 - 278.0	#10-20 Sand	198.3 - 203.0	1131.69	1132.28	33.3717	-112.0263
40osb	BMW-17D	922346	8/27/2019	Sonic	9.0	267.0	PVC / 4 / 0.020	135.0 - 245.0	133.0 - 247.0	#10-20 Sand	130.0 - 133.0	1185.97	1186.37	33.4874	-112.1187
40osb	BMW-18D	922865	9/13/2019	Sonic	9.0	274.0	PVC / 4 / 0.020	215.0 - 265.0	213.0 - 267.0	#10-20 Sand	210.0 - 213.0	1157.00	1157.33	33.4795	-112.0151
40osb	BMW-19D	922866	9/24/2019	Sonic	9.0	267.0	PVC / 4 / 0.020	202.0-252.0	197.0 - 252.0	#10-20 Sand	194.0 - 197.0	1152.04	1152.44	33.3750	-112.1187
LUST 3004	MW-7	583961	12/14/2000	Auger	10.0	75.0	PVC / 4 / 0.020	40.0 - 75.0	30.0 - 75.0	8/12 Sand	28.0 - 30.0	1156.75	1157.39	33.4794	-112.0150
LUST 3004	MW-8	205093	11/18/2004	Auger	10.0	100.0	PVC / 4 / 0.020	45.0 - 100.0	43.0 - 100.0	8/12 Sand	40.0 - 43.0	1157.28	1157.46	33.4802	-112.0150
LUST 3004	MW-9	205094	11/12/2004	Auger	10.0	100.0	PVC / 4 / 0.020	45.0 - 100.0	43.0 - 100.0	8/12 Sand	41.0 - 43.0	1156.28	1156.85	33.4786	-112.0137
LUST 3004	MW-10	205095	11/16/2004	Auger	10.0	105.0	PVC / 4 / 0.020	50.0 - 105.0	48.0 - 105.0	8/12 Sand	46.0 - 48.0	1152.84	1155.09	33.4786	-112.0159
LUSI 3004	IVI VV-1	572027	9/30/2003	Auger	10.0	85.0	PVC / 4 / 0.020	38.0 - 83.0	30.0 - 83.0	8/12 Sand	28.0 - 30.0	1160.40	1100.88	33.4803	-112.0134

NOTES:

* wells installed within the same borehole

(1) NAVD88

(2) GRID, NAD83, Arizona Central 202

40osb - 40th Street and Osborn Road Water Quality Assurance Revolving Fund Site

LUST 3004 - Former Mobil Station #18KDP, 3141 East Thomas Road, ADEQ LUST #3004

ADWR Arizona Department of Water Resources

FEET BGS feet below ground surface

FEET AMSL feet above mean sea level

NR Not Reported

Sonic - Rotosonic drilling method

SRP Salt River Project

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
BMW-01A	62104	55-598109	06/13/03	1193.20	26.9	1166.30	N/A	
			12/10/03	1193.20	28.71	1164.49	-1.81	
			03/30/04	1193.20	29.61	1163.59	-0.90	
			10/12/04	1193.20	31.29	1161.91	-1.68	
			03/22/05	1193.20	31.95	1161.25	-0.66	
			10/07/05	1193.20	30.31	1162.89	1.64	
			03/14/06	1193.20	31.52	1161.68	-1.21	
			10/25/06	1193.20	29.91	1163.29	1.61	
			02/27/07	1193.20	30.99	1162.21	-1.08	
			06/22/07	1193.20	32.84	1160.36	-1.85	
			09/26/07	1193.20	32.59	1160.61	0.25	
			04/09/08	1193.20	32.51	1160.69	0.08	
			06/19/08	1193.20	32.16	1161.04	0.35	
			10/01/08	1193.20	30.99	1162.21	1.17	
			12/17/08	1193.20	31.26	1161.94	-0.27	
			01/19/09	1193.20	31.92	1161.28	-0.66	
			01/30/13	1193.20	34.55	1158.65	-2.63	
			10/01/13	1193.20	34.59	1158.61	-0.04	
			05/04/14	1193.20	35.89	1157.31	-1.30	
			3/2/2015	1193.20	36.10	1157.10	-0.21	
			4/29/2015	1193.20	36.50	1156.70	-0.61	
			9/29/2015	1193.20	38.50	1154.70	-2.00	
			8/24/2016	1193.20	37.13	1156.07	1.37	
			12/1/2018	1193.20	38.88	1154.32	-1.75	
			4/23/2019	1193.20	40.15	1153.05	-1.27	
			10/15/2019	1193.20	39.93	1153.27	0.22	

TABLE 2. HISTORIC WATER LEVEL DATA,REMEDIAL INVESTIGATION REPORT, 40th STREET OSBORN ROAD WQARF SITE

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
BMW-01B	77128	55-909970	12/17/08	1193.59	30.96	1162.63	N/A	
			01/19/09	1193.59	31.54	1162.05	-0.58	
			10/19/11	1193.59	32.85	1160.74	-1.31	
			04/18/12	1193.59	33.75	1159.84	-0.90	
			01/30/13	1193.59	34.2	1159.39	-0.45	
			10/01/13	1193.59	34.23	1159.36	-0.03	
			05/04/14	1193.59	35.51	1158.08	-1.28	
			3/2/2015	1193.59	35.74	1157.85	-0.23	
			4/29/2015	1193.59	36.11	1157.48	-0.37	
			9/29/2015	1193.59	38.03	1155.56	-1.92	
			8/24/2016	1193.59	36.73	1156.86	1.30	
			12/1/2018	1193.59	38.53	1155.06	-1.80	
			4/23/2019	1193.59	39.77	1153.82	-1.24	
			10/15/2019	1193.59	NM	NM	NM	Inaccessible
BMW-02A	71384	55-908743	04/21/08	1199.66	33.22	1166.44	N/A	
			06/19/08	1199.66	32.63	1167.03	0.59	
			10/01/08	1199.66	31.48	1168.18	1.15	
			12/17/08	1199.66	NM	NM	NM	
			01/19/09	1199.66	32.61	1167.05	-1.13	
			11/15/10	1199.66	32.85	1166.81	-0.24	
			01/30/13	1199.66	35.45	1164.21	-2.60	
			10/01/13	1199.66	35.28	1164.38	0.17	
			05/04/14	1199.66	36.75	1162.91	-1.47	
			3/2/2015	1199.66	37.02	1162.64	-0.27	
			4/29/2015	1199.66	37.31	1162.35	-0.29	
			9/29/2015	1199.66	37.14	1162.52	0.17	
			8/24/2016	1199.66	37.85	1161.81	-0.71	
			11/30/2018	1199.66	39.96	1159.70	-2.11	
			4/23/2019	1199.66	41.28	1158.38	-1.32	
			10/15/2019	1199.66	40.90	1158.76	0.38	

TABLE 2. HISTORIC WATER LEVEL DATA,REMEDIAL INVESTIGATION REPORT, 40th STREET OSBORN ROAD WQARF SITE

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
BMW-02B	71385	55-908743	04/21/08	1199.60	33.09	1166.51	7.75	
			06/03/08	1199.60	30.77	1168.83	2.32	
			06/19/08	1199.60	32.59	1167.01	-1.82	
			10/01/08	1199.60	31.48	1168.12	1.11	
			12/17/08	1199.60	NM	NM	N/A	
			01/19/09	1199.60	32.58	1167.02	-1.10	
			11/15/10	1199.60	32.82	1166.78	-0.24	
			01/30/13	1199.60	35.44	1164.16	-2.62	
			10/01/13	1199.60	35.26	1164.34	0.18	
			05/04/14	1199.60	36.71	1162.89	-1.45	
			3/2/2015	1199.60	36.98	1162.62	-0.27	
			4/29/2015	1199.60	37.29	1162.31	-0.31	
			9/29/2015	1199.60	37.13	1162.47	0.16	
			8/24/2016	1199.60	37.86	1161.74	-0.73	
			11/30/2018	1199.60	39.96	1159.64	-2.10	
			4/23/2019	1199.60	41.25	1158.35	-1.29	
			10/15/2019	1199.60	40.89	1158.71	0.36	
BMW-02C	80535	55-817659	4/29/2015	1199.53	37.26	1162.27	N/A	
			9/29/2015	1199.53	37.09	1162.44	0.17	
			8/24/2016	1199.53	37.79	1161.74	-0.70	
			11/30/2018	1199.53	39.94	1159.59	-2.15	
			4/23/2019	1199.53	41.21	1158.32	-1.27	
			10/15/2019	1199.53	40.27	1159.26	0.94	
BMW-02E		55-922509	4/23/2019	1199.63	41.60	1158.03		First Water Level
			10/15/2019	1199.63	41.38	1158.25	0.22	

TABLE 2. HISTORIC WATER LEVEL DATA,REMEDIAL INVESTIGATION REPORT, 40th STREET OSBORN ROAD WQARF SITE
				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
BMW-03A	71386	55-908744	06/03/08	1201.09	30.75	1170.34	12.10	
			06/19/08	1201.09	30.66	1170.43	0.09	
			10/01/08	1201.09	29.58	1171.51	1.08	
			12/17/08	1201.09	NM	NM	NM	
			01/19/09	1201.09	30.86	1170.23	-1.28	
			11/15/10	1201.09	31.04	1170.05	-0.18	
			01/30/13	1201.09	33.72	1167.37	-2.68	
			10/01/13	1201.09	33.35	1167.74	0.37	
			05/04/14	1201.09	34.92	1166.17	-1.57	
			3/2/2015	1201.09	35.13	1165.96	-0.21	
			4/29/2015	1201.09	35.32	1165.77	-0.19	
			9/29/2015	1201.09	34.97	1166.12	0.35	
			8/24/2016	1201.09	35.94	1165.15	-0.97	
			11/30/2018	1201.09	38.11	1162.98	-2.17	
			4/23/2019	1201.09	39.42	1161.67	-1.31	
			10/15/2019	1201.09	39.10	1161.99	0.32	
BMW-03B	71387	55-908744	06/19/08	1201.12	30.68	1170.44	8.45	
			10/01/08	1201.12	29.66	1171.46	1.02	
			12/17/08	1201.12	NM	NM	NM	
			01/19/09	1201.12	30.88	1170.24	-1.22	
			11/15/10	1201.12	31.07	1170.05	-0.19	
			01/30/13	1201.12	33.74	1167.38	-2.67	
			10/01/13	1201.12	33.33	1167.79	0.41	
			05/04/14	1201.12	34.94	1166.18	-1.61	
			3/2/2015	1201.12	35.11	1166.01	-0.17	
			4/29/2015	1201.12	35.31	1165.81	-0.37	
			9/29/2015	1201.12	35.00	1166.12	0.31	
			8/24/2016	1201.12	35.98	1165.14	-0.98	
			11/30/2018	1201.12	38.13	1162.99	-2.15	
			4/23/2019	1201.12	39.42	1161.70	-1.29	
			10/15/2019	1201.12	39.10	1162.02	0.32	

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
BMW-04A	79627	55-916200	02/27/14	1200.37	32.32	1168.05	N/A	
			05/04/14	1200.37	32.6	1167.77	-0.28	
			3/2/2015	1200.37	32.69	1167.68	-0.09	
			4/29/2015	1200.37	32.87	1167.50	-0.18	
			9/29/2015	1200.37	32.54	1167.83	0.33	
			8/24/2016	1200.37	33.62	1166.75	-1.08	
			11/30/2018	1200.37	NM	NM	NM	Roots in well
			4/23/2019	1200.37	NM	NM	NM	Vehicle parked over well
			10/15/2019	1200.37	36.69	1163.68	NM	
BMW-04B	79628	55-916201	02/27/14	1200.32	32.25	1168.07	N/A	
			05/04/14	1200.32	32.61	1167.71	-0.36	
			3/2/2015	1200.32	32.66	1167.66	-0.41	
			4/29/2015	1200.32	32.85	1167.47	-0.24	
			9/29/2015	1200.32	32.54	1167.78	0.31	
			8/24/2016	1200.32	33.56	1166.76	-1.02	
			11/30/2018	1200.32	35.65	1164.67	-2.09	
			4/23/2019	1200.32	NM	NM	NM	Vehicle parked over well
			10/15/2019	1200.32	36.62	1163.70	NM	
BMW-07A	79643	55-916198	02/27/14	1189.22	37.02	1152.20	N/A	
			05/04/14	1189.22	37.47	1151.75	-0.45	
			3/2/2015	1189.22	37.76	1151.46	-0.29	
			4/29/2015	1189.22	38.16	1151.06	-0.40	
			9/29/2015	1189.22	38.85	1150.37	-0.69	
			8/24/2016	1189.22	33.88	1155.34	4.97	
			11/30/2018	1189.22	NM	NM	NM	Roots in well
			4/23/2019	1189.22	41.71	1147.51	NM	
			10/15/2019	1189.22	36.62	1152.60	5.09	

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
BMW-07B	79644	55-916199	02/27/14	1189.20	36.96	1152.24	N/A	
			05/04/14	1189.20	37.42	1151.78	-0.46	
			3/2/2015	1189.20	37.7	1151.50	-0.28	
			4/29/2015	1189.20	38.08	1151.12	-0.38	
			9/29/2015	1189.20	38.77	1150.43	-0.69	
			8/24/2016	1189.20	33.94	1155.26	4.83	
			11/30/2018	1189.20	NM	NM	NM	
			4/23/2019	1189.20	41.65	1147.55	NM	
			10/15/2019	1189.20	41.63	1147.57	0.02	
BMW-09C	81747	55-922867	10/15/2019	1170.54	51.03	1119.51		First Water Level
BMW-09D	81660	55-921211	11/30/2018	1170.44	51.03	1119.41		First Water Level
			4/23/2019	1170.44	52.01	1118.43	-0.98	
			10/15/2019	1170.44	52.27	1118.17	-0.26	
BMW-10B	81746	55-922868	10/15/2019	1149.25	76.16	1073.09		First Water Level
BMW-10D	81661	55-921212	11/30/2018	1148.63	74.15	1074.48		First Water Level
			4/23/2019	1148.63	74.97	1073.66	-0.82	
			10/15/2019	1148.63	74.73	1073.90	0.24	
BMW-11D	81662	55-921213	11/30/2018	1180.11	42.70	1137.41		First Water Level
			4/23/2019	1180.11	43.79	1136.32	-1.09	
			10/15/2019	1180.11	43.92	1136.19	-0.13	
BMW-12B	81659	55-922024	12/1/2018	1,209.13	39.85	1169.28		First water level
			10/15/2019	1,209.13	40.99	1168.14	-1.14	
BMW-14D	81663	55-922019	11/30/2018	1135.93	80.17	1055.76		First Water Level
			4/23/2019	1135.93	80.61	1055.32	-0.44	
			10/15/2019	1135.93	80.45	1055.48	0.16	
BMW-16D		55-922021	4/23/2019	1131.69	82.95	1048.74		First Water Level
			10/15/2019	1131.69	82.90	1048.79	0.05	
BMW-17D	81746	55-922346	10/15/2019	1185.97	46.12	1139.85		First Water Level
BMW-18D	81749	55-922865	10/15/2019	1157.00	69.34	1087.66		First Water Level
BMW-19D	81750	55-922866	10/15/2019	1152.04	70.85	1081.19		First Water Level

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
MW-7 [*]	60962	55-583961	7/9/2003	1156.75	58.45	1098.30		
			11/19/2003	1156.75	60.72	1096.03	-2.27	
			1/16/2004	1156.75	61.03	1095.72	-0.31	
			6/25/2004	1156.75	63.38	1093.37	-2.35	
			9/17/2004	1156.75	63.91	1092.84	-0.53	
			11/18/2004	1156.75	64.20	1092.55	-0.29	
			6/16/2005	1156.75	62.58	1094.17	1.62	
			9/8/2005	1156.75	61.83	1094.92	0.75	
			11/8/2005	1156.75	61.18	1095.57	0.65	
			2/21/2006	1156.75	61.25	1095.50	-0.07	
			5/10/2006	1156.75	61.14	1095.61	0.11	
			7/25/2006	1156.75	60.84	1095.91	0.30	
			10/19/2006	1156.75	60.37	1096.38	0.47	
			2/15/2007	1156.75	60.65	1096.10	-0.28	
			4/19/2007	1156.75	61.76	1094.99	-1.11	
			7/10/2007	1156.75	63.58	1093.17	-1.82	
			10/12/2007	1156.75	63.01	1093.74	0.57	
			2/11/2008	1156.75	62.28	1094.47	0.73	
			6/5/2008	1156.75	62.13	1094.62	0.15	
			7/17/2008	1156.75	63.91	1092.84	-1.78	
			10/20/2008	1156.75	61.20	1095.55	2.71	
			3/5/2009	1156.75	61.04	1095.71	0.16	
			5/28/2009	1156.75	61.22	1095.53	-0.18	
			7/17/2009	1156.75	61.35	1095.40	-0.13	
			10/19/2009	1156.75	60.97	1095.78	0.38	
			3/30/2010	1156.75	61.24	1095.51	-0.27	
			3/30/2010	1156.75	61.24	1095.51	0.00	
			5/11/2010	1156.75	61.28	1095.47	-0.04	
			7/13/2010	1156.75	61.03	1095.72	0.25	
			8/4/2010	1156.75	61.05	1095.70	-0.02	

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
MW-7*			12/21/2010	1156.75	60.35	1096.40	0.70	
			11/19/2012	1156.75	62.78	1093.97	-2.43	
			6/16/2015	1156.75	66.90	1089.85	-4.12	
			9/9/2015	1156.75	67.22	1089.53	-0.32	
			12/7/2018	1156.75	67.57	1089.18	-0.35	
			2/27/2019	1156.75	68.48	1088.27	-0.91	
			10/15/2019	1156.75	68.59	1088.16	-0.11	
MW-8 [*]		55-205093	6/16/2005	1157.28	NM	NM		
			9/8/2005	1157.28	60.13	1097.15	NM	
			11/8/2005	1157.28	59.53	1097.75	0.60	
			2/21/2006	1157.28	59.46	1097.82	0.07	
			5/10/2006	1157.28	59.35	1097.93	0.11	
			7/25/2006	1157.28	59.08	1098.20	0.27	
			10/19/2006	1157.28	58.64	1098.64	0.44	
			2/15/2007	1157.28	58.82	1098.46	-0.18	
			4/19/2007	1157.28	59.95	1097.33	-1.13	
			7/10/2007	1157.28	61.94	1095.34	-1.99	
			10/12/2007	1157.28	61.33	1095.95	0.61	
			2/11/2008	1157.28	60.54	1096.74	0.79	
			6/5/2008	1157.28	60.37	1096.91	0.17	
			7/17/2008	1157.28	62.14	1095.14	-1.77	
			10/20/2008	1157.28	59.43	1097.85	2.71	
			3/5/2009	1157.28	59.14	1098.14	0.29	
			5/28/2009	1157.28	59.44	1097.84	-0.30	
			7/17/2009	1157.28	56.56	1100.72	2.88	
			10/19/2009	1157.28	59.23	1098.05	-2.67	
			10/19/2009	1157.28	59.23	1098.05	0.00	
			3/30/2010	1157.28	NM	NM	NM	
			5/11/2010	1157.28	59.46	1097.82	NM	
			7/13/2010	1157.28	59.27	1098.01	0.19	

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
MW-8 [*]			8/4/2010	1157.28	59.27	1098.01	0.00	
			11/19/2012	1157.28	60.86	1096.42	-1.59	
			6/16/2015	1157.28	65.03	1092.25	-4.17	
			9/9/2015	1157.28	65.29	1091.99	-0.26	
			12/7/2018	1157.28	65.78	1091.50	-0.49	
			2/27/2019	1157.28	66.59	1090.69	-0.81	
			4/23/2019	1157.28	66.98	1090.30	-0.39	
			10/15/2019	1157.28	66.80	1090.48	0.18	
MW-9 [*]		55-205094	6/16/2005	1156.28	NM	NM		
			9/8/2005	1156.28	59.93	1096.35	NM	
			11/8/2005	1156.28	59.33	1096.95	0.60	
			2/21/2006	1156.28	59.41	1096.87	-0.08	
			5/10/2006	1156.28	59.33	1096.95	0.08	
			7/25/2006	1156.28	58.94	1097.34	0.39	
			10/19/2006	1156.28	58.49	1097.79	0.45	
			2/15/2007	1156.28	58.82	1097.46	-0.33	
			4/19/2007	1156.28	59.87	1096.41	-1.05	
			7/10/2007	1156.28	61.59	1094.69	-1.72	
			10/12/2007	1156.28	61.14	1095.14	0.45	
			2/11/2008	1156.28	60.43	1095.85	0.71	
			6/5/2008	1156.28	NM	NM	NM	
			7/17/2008	1156.28	62.08	1094.20	NM	
			10/20/2008	1156.28	59.36	1096.92	2.72	
			3/5/2009	1156.28	63.50	1092.78	-4.14	
			5/28/2009	1156.28	59.41	1096.87	4.09	
			7/17/2009	1156.28	59.54	1096.74	-0.13	
			10/19/2009	1156.28	59.18	1097.10	0.36	
			10/19/2009	1156.28	NM	NM	NM	
			3/30/2010	1156.28	59.54	1096.74	NM	
			5/11/2010	1156.28	59.25	1097.03	0.29	

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
MW-9*			7/13/2010	1156.28	59.23	1097.05	0.02	
			8/4/2010	1156.28	60.85	1095.43	-1.62	
			11/19/2012	1156.28	65.09	1091.19	-4.24	
			6/16/2015	1156.28	65.35	1090.93	-0.26	
			9/9/2015	1156.28	65.29	1090.99	0.06	
			12/7/2018	1156.28	65.78	1090.50	-0.49	
			2/27/2019	1156.28	66.57	1089.71	-0.79	
			4/23/2019	1156.28	66.87	1089.41	-0.30	
			10/15/2019	1156.28	66.70	1089.58	0.17	
MW-10 [*]		55-205095	6/16/2005	1152.84	NM	NM		
			9/8/2005	1152.84	64.11	1088.73	NM	
			11/8/2005	1152.84	63.42	1089.42	0.69	
			2/21/2006	1152.84	63.73	1089.11	-0.31	
			5/10/2006	1152.84	63.58	1089.26	0.15	
			7/25/2006	1152.84	63.23	1089.61	0.35	
			10/19/2006	1152.84	62.70	1090.14	0.53	
			2/15/2007	1152.84	63.23	1089.61	-0.53	
			4/19/2007	1152.84	64.34	1088.50	-1.11	
			7/10/2007	1152.84	65.91	1086.93	-1.57	
			10/12/2007	1152.84	65.29	1087.55	0.62	
			2/11/2008	1152.84	64.65	1088.19	0.64	
			6/5/2008	1152.84	64.44	1088.40	0.21	
			7/17/2008	1152.84	66.20	1086.64	-1.76	
			10/20/2008	1152.84	63.45	1089.39	2.75	
			3/5/2009	1152.84	59.24	1093.60	4.21	
			5/28/2009	1152.84	53.56	1099.28	5.68	
			7/17/2009	1152.84	63.70	1089.14	-10.14	
			10/19/2009	1152.84	63.33	1089.51	0.37	
			10/19/2009	1152.84	NM	NM	NM	
			3/30/2010	1152.84	63.71	1089.13	NM	

				Measuring Point	Depth to	Groundwater	Change Since	
	ADEQ	ADWR		Elevation	Groundwater	Elevation	Previous	
Well I.D	Number	Number	Date	(ft. AMSL) ¹	(ft. BMP) ²	(ft. AMSL) ¹	(ft.)	Comments
MW-10*			5/11/2010	1152.84	63.34	1089.50	0.37	
			7/13/2010	1152.84	63.35	1089.49	-0.01	
			8/4/2010	1152.84	65.19	1087.65	-1.84	
			11/19/2012	1152.84	69.54	1083.30	-4.35	
			6/16/2015	1152.84	69.36	1083.48	0.18	
			9/9/2015	1152.84	65.29	1087.55	4.07	
			12/7/2018	1152.84	65.78	1087.06	-0.49	
			2/27/2019	1152.84	71.11	1081.73	-5.33	
			4/23/2019	1152.84	71.17	1081.67	-0.06	
			10/15/2019	1152.84	70.91	1081.93	0.26	

Notes:

1. Feet above mean sea level (ft AMSL)

2. Feet below measuring point (ft BMP)

NM - not measured.

* indicates monitoring well associated with Former Mobil Station #18KDP, 3141 East Thomas Road, Phoenix, Arizona, LUST file number 3004.

		MP	Depth	Sample			D			
		Elevation	Sampled	Elevation			Res	ults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	Quifer Water Q	Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
SRP Well 17.9E-7.5N	D	-	Well	head	1/7/1983	53	0.5	NA	NA	
					2/28/1984	90	< 0.5	NA	NA	
					7/5/1984	29	< 0.5	NA	NA	
					10/5/1984	65	NA	NA	NA	
					6/18/1984	24.5	< 0.5	NA	NA	
					6/18/1984	25.9	< 0.5	NA	NA	
					10/7/1985	43.2	< 0.5	NA	NA	
					4/8/1987	17.9	< 0.5	NA	< 0.5	
					6/28/1988	66	< 0.5	NA	< 0.5	
					6/29/1989	81.5	< 0.5	NA	< 0.5	
					1/11/1991	55	< 0.5	NA	< 0.5	
					11/14/1996	47	9.9	NA	NA	
					9/28/1998	210	0.7	NA	NA	
					3/26/2002	79	1.4	< 0.5	NA	
					9/2/2002	85	1.1	< 0.5	NA	
					9/2/2002	87	1.1	< 0.5	NA	
					12/6/2002	76	0.63	< 0.5	NA	
					3/6/2003	90	1.2	< 0.5	NA	
					3/6/2003 (D)	82	1.1	< 0.5	NA	
					6/3/2003	110	1.4	< 0.5	NA	
					12/10/2003	80	1.3	< 0.5	NA	
					3/23/2005	41	< 1.0	< 1.0	NA	
					3/14/2006	24	< 1.0	< 1.0	< 5.0	
					10/24/2006	28	< 1.0	< 1.0	< 5.0	
					3/14/2007	24	< 1.0	< 1.0	< 5.0	
					3/14/2007 (D)	25	< 1.0	< 1.0	< 5.0	
					10/15/2007	15	< 1.0	< 1.0	< 5.0	
					10/15/2007 (D)	13	< 1.0	< 1.0	< 5.0	
					4/21/2008	14	< 1.0	< 1.0	< 5.0	
					4/21/2008 (D)	13	< 1.0	< 1.0	< 5.0	
					8/8/2010	6.8	< 1.0	< 1.0	< 5.0	
					4/3/2013	3	NA	NA	NA	
					5/29/2015	1.4	< 0.50	NA	NA	
					2/17/2016	1.6	< 0.50	NA	NA	

		MP Elevation	Depth Sampled	Sample Elevation			Res	ults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
	•	•	ŀ	Aquifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
SRP Well 17.9E-7.5N	А	1196.00	56.7	1139.30	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	А		74	1122.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	В		91.3	1104.70	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	В		105	1091.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	В		115	1081.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	С		125	1071.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	С		135	1061.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	С		145	1051.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		155	1041.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		165	1031.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		175	1021.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		185	1011.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		195	1001.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		205	991.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		215	981.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		225	971.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		235	961.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		245	951.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		255	941.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
	D		265	931.00	4/26/2016	<1.0	<1.0	<1.0	<2.0	
BMW-01A	А	1193.20	28.9	1164.30	6/13/2003	< 0.5	< 0.5	< 0.5	NA	
			34.5	1158.70	10/11/2007	< 1.0	< 1.0	< 1.0	< 5	
				1154.60	5/20/2014	<1.0	<1.0	<1.0	<2.0	
			38.6		8/24/2016	<1.0	<1.0	<1.0	2.5	
					8/24/2016(D)	<1.0	<1.0	<1.0	<1.0	
			20.6	1153.60	12/4/2018	<2.0	<2.0	<2.0	7.0	
			0.65		12/4/2018(D)	<2.0	<2.0	<2.0	7.2	
			41	1152.20	10/16/2019	<2.0	<2.0	<2.0	6.4	
			44.8	1148.40	10/28/2015	<1.0	<1.0	<1.0	2.2	

		MP	Depth	Sample						
		Elevation	Sampled	Elevation			Res	ults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	Aquifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
BMW-01A	Α	1193.20	56.5	1136.70	10/11/2007	< 1.0	< 1.0	< 1.0	< 5	
			56.91	1136.29	10/25/2006	< 1.0	< 1.0	< 1.0	< 5.0	
				1135.70	6/13/2003	< 0.5	< 0.5	< 0.5	NA	
					3/22/2005	< 1.0	< 1.0	< 1.0	< 5.0	
			E7 E		10/25/2006	< 1.0	< 1.0	< 1.0	< 5.0	
			57.5		10/23/2013	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	17	
					10/16/2019	<2.0	<2.0	<2.0	17	
				1134.70	12/10/2003	< 0.5	< 0.5	< 0.5	NA	
			58.5		10/12/2004	< 0.4	< 1.0	< 0.5	< 0.8	
					3/14/2007	< 1.0	< 1.0	< 1.0	< 5	
			50.5	1133.70	3/30/2004	< 0.5	< 0.5	< 0.5	NA	
			59.5		3/14/2006	< 1.0	< 1.0	< 1.0	< 5.0	
	В	1193.59		1121.09	5/20/2014	<1.0	<1.0	<1.0	<2.0	
					5/20/2014	<1.0	<1.0	<1.0	<1.0	
					5/15/2015	<1.0	<1.0	<1.0	<5.0	
			72.5		5/15/2015(D)	<1.0	<1.0	<1.0	1.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	NS	NS	NS	NS	
			78.5	1115.09	10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
				1097.09	10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
BMW-01B					12/17/2008	2.3	< 1.0	< 1.0	NA	
					10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
					10/23/2013	< 1.0	< 1.0	< 1.0	< 1.0	
			96.5		5/20/2014	<1.0	<1.0	<1.0	<2.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					8/24/2016	<1.0	<1.0	<1.0	<1.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	NS	NS	NS	NS	

		MP	Depth	Sample			_	. 5.6		
		Elevation	Sampled	Elevation	-		Res	ults ⁵⁻⁰	1	
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	Quifer Water	Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
	А	1199.66		1142.26	10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					10/28/15(D)	<1.0	<1.0	<1.0	<2.0	
BMW-02A			57.4		8/24/2016	<1.0	<1.0	<1.0	<1.0	
					12/3/2018	<2.0	<2.0	<2.0	<2.0	
					12/3/2018(D)	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
					10/16/2019(D)	<2.0	<2.0	<2.0	<2.0	
	В	1199.60	78.6	1121.00	10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
				1114.90	5/20/2014	1.2	<1.0	<1.0	<2.0	
					5/20/2014	1.2	<1.0	<1.0	<1.0	
			947		10/28/2015	4.0	<1.0	<1.0	<2.0	
			04.7		8/24/2016	<1.0	<1.0	<1.0	2.7	
					12/3/2018	<2.0	<2.0	<2.0	10	
					10/16/2019	<2.0	<2.0	<2.0	4	
				1108.90	5/20/2014	28	1.8	<1.0	2.8	
RMM OOR					10/28/2015	<1.0	<1.0	<1.0	<2.0	
DIVIVV-02D			90.7		8/24/2016	<1.0	<1.0	<1.0	2.6	
					12/3/2018	<2.0	<2.0	<2.0	10	
					10/16/2019	<2.0	<2.0	<2.0	3.0	
				1102.80	10/23/2013	20	3.3	< 1.0	3.5	
					5/20/2014	17	2.6	<1.0	2.3	
			06.9		10/28/2015	2.5	<1.0	<1.0	<2.0	
			90.0		8/24/2016	<1.0	4.3	<1.0	2.4	
					12/3/2018	<2.0	<2.0	<2.0	9.7	
					10/16/2019	<2.0	<2.0	<2.0	3.9	

		MP	Depth	Sample						
		Elevation	Sampled	Elevation			Res	ults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	quifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
	С	1199.53		1087.03	5/15/2015	65	2.5	<2.0	<1.0	
			112.5		12/4/2018	36	<2.0	<2.0	<2.0	
					10/16/2019	24	<2.0	<2.0	<2.0	
				1081.03	10/28/2015	75	2.3	<1.0	<2.0	
			110 5		8/24/2016	27	<1.0	<1.0	<1.0	
			110.5		12/4/2018	40	<2.0	<2.0	<2.0	
					10/16/2019	19	<2.0	<2.0	<2.0	
				1075.03	5/15/2015	63	2.5	<2.0	<1.0	
			124.5		12/4/2018	38	<2.0	<2.0	<2.0	
PNANA 02C					10/16/2019	15	<2.0	<2.0	<2.0	
DIVIVV-02C				1069.03	10/28/2015	77	2.4	<1.0	<2.0	
			120 F		8/24/2016	32	<1.0	<1.0	<1.0	
			150.5		12/4/2018	28	<2.0	<2.0	<2.0	
					10/16/2019	11	<2.0	<2.0	<2.0	
			126 5	1063.03	10/28/2015	39	2.2	<1.0	<2.0	
					10/28/2015 (D)	37	2.2	<1.0	<2.0	
					8/24/2016	62	1.8	<1.0	<1.0	
			130.5		8/24/2016 (D)	19.5	<1.0	<1.0	<1.0	
					12/4/2018	26	<2.0	<2.0	<2.0	
					10/16/2019	15	<2.0	<2.0	<2.0	
	D	1199.63	160.0	1039.63	4/23/2019	170	2.5	<2.0	<2.0	
			100.0		10/16/2019	120	2.5	<2.0	<2.0	
				1019.63	4/23/2019	110	<2.0	<2.0	<2.0	
			180.0		4/23/2019 (D)	130	<2.0	<2.0	<2.0	
					10/16/2019	100	<2.0	<2.0	<2.0	
			200.0	999.63	4/23/2019	97	<2.0	<2.0	<2.0	
BMW-02E			200.0		10/16/2019	89	<2.0	<2.0	<2.0	
DMW-UZE			220.0	979.63	4/23/2019	120	<2.0	<2.0	<2.0	
			220.0		10/16/2019	93	<2.0	<2.0	<2.0	
			240.0	959.63	4/23/2019	130	<2.0	<2.0	<2.0	
			240.0		10/16/2019	100	<2.0	<2.0	<2.0	
			260.0	939.63	4/23/2019	140	<2.0	<2.0	<2.0	
			200.0		10/16/2019	120	<2.0	<2.0	<2.0	

		MP	Depth	Sample			_	. 5.6		
	1	Elevation	Sampled	Elevation			Res	ults		
Well Name	Zone	(ft AMSL)⁻	(ft BMP) ³	(ft AMSL)	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			4	Aquifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
	Α	1201.09		1143.09	5/20/2014	<1.0	<1.0	<1.0	<2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
					10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
BMW-034			58		10/23/2013	< 1.0	< 1.0	< 1.0	< 2.0	
DIVIN USA			50		10/28/2015	< 1.0	< 1.0	< 1.0	<2.0	
					8/24/2016	<1.0	<1.0	<1.0	<1.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
	В	1201.12	78.4	1122.72	10/23/2013	< 1.0	< 1.0	< 1.0	<5.0	
			95.5	1105.62	10/23/2013	< 1.0	< 1.0	< 1.0	2.1	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
BMW-03B					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					8/24/2016	<1.0	<1.0	<1.0	<1.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
BMW-04A	Α	1200.37	35.5	1164.87	8/24/2016	<1.0	<1.0	<1.0	<1.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
			26 5		12/4/2018	<2.0	<2.0	<2.0	<2.0	
			50.5		10/16/2019	<2.0	<2.0	<2.0	<2.0	
			40.8	1159.57	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			46.1	1154.27	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
				1148.97	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
			F1 4		5/15/2015	<1.0	<1.0	<1.0	<2.0	
			51.4		10/28/2015	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
			56.6	1143.77	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			61.9	1138.47	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	

		MP	Depth	Sample						
		Elevation	Sampled	Elevation			Res	ults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	quifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
BMW-04A	Α	1200.37	67.2	1133.17	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
					5/20/2014	1.2	<1.0	<1.0	<2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
					5/15/2015	<1.0	<1.0	<1.0	<2.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					12/4/2018 (D)	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
					10/16/2019(D)	<2.0	<2.0	<2.0	<2.0	
	В	1200.32	81.2	1119.12	2/27/2014	1.8	< 1.0	< 1.0	< 2.0	
					5/20/2014	1.6	<1.0	<1.0	<2.0	
					5/15/2015	1.0	<1.0	<1.0	<2.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
			86.9	1113.42	2/27/2014	1.7	< 1.0	< 1.0	< 2.0	
			92.6	1107.72	2/27/2014	1.6	< 1.0	< 1.0	< 2.0	
			92.0		02/27/2014 (D)	1.6	< 1.0	< 1.0	< 2.0	
				1102.02	2/27/2014	2.1	< 1.0	< 1.0	< 2.0	
					5/20/2014	1.5	<1.0	<1.0	<2.0	
BMW-04B			09.2		10/28/2015	<1.0	<1.0	<1.0	<2.0	
			90.5		8/24/2016	<1.0	<1.0	<1.0	<1.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
			104	1096.32	2/27/2014	1.1	< 1.0	< 1.0	< 2.0	
			109.7	1090.62	2/27/2014	1.4	< 1.0	< 1.0	< 2.0	
				1084.92	2/27/2014	1.6	< 1.0	< 1.0	< 2.0	
					5/20/2014	1.5	<1.0	<1.0	<2.0	
			11E A		5/15/2015	1.1	<1.0	<1.0	<2.0	
			115.4		10/28/2015	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	

		MP	Depth	Sample						
	1	Elevation	Sampled	Elevation	-		Res	ults ^{-•}		
Well Name	Zone ⁺	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) [*]	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			4	quifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
	А	1214.27		1173.77	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
			40.5		10/28/2015	<1.0	<1.0	<1.0	<2.0	
			40.5		8/24/2016	<1.0	<1.0	<1.0	<1.0	
					8/24/2016 (D)	<1.0	<1.0	<1.0	<1.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
BMW-07A			42.5	1171.77	10/16/2019	<2.0	<2.0	<2.0	<2.0	
			45.8	1168.47	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			51.1	1163.17	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			EC 2	1157.97	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			50.5		02/27/2014 (D)	< 1.0	< 1.0	< 1.0	< 2.0	
			61.9	1152.37	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			66.9	1147.37	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
	В	1214.50	87.5	1127.00	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
					10/28/2015	<1.0	<1.0	<1.0	<2.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					12/4/2018(D)	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	
			93.5	1121.00	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
BMW-07B			99.5	1115.00	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
			105.5	1109.00	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
				1103.00	2/27/2014	< 1.0	< 1.0	< 1.0	< 2.0	
					5/20/2014	<1.0	<1.0	<1.0	<2.0	
			111 5		10/28/2015	<1.0	<1.0	<1.0	<2.0	
			111.5		8/24/2016	<1.0	<1.0	<1.0	<1.0	
					12/4/2018	<2.0	<2.0	<2.0	<2.0	
					10/16/2019	<2.0	<2.0	<2.0	<2.0	

		MP	Depth	Sample						
		Elevation	Sampled	Elevation			Res	sults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			4	quifer Water	Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
	С	1170.44	100	1070.44	10/16/2019	3.4	<2.0	<2.0	<2.0	
DIVIVV-09C			120	1050.44	10/16/2019	3.2	<2.0	<2.0	<2.0	
	D	1170.44	105	985.44	12/4/2018	18	<2.0	<2.0	<2.0	
			185		10/16/2019	11	<2.0	<2.0	<2.0	
			200	970.44	11/1/2018*	2.93	< 0.25	< 0.25	NA	
			205	965.44	12/4/2018	19	<2.0	<2.0	<2.0	
			205		10/16/2019	14	<2.0	<2.0	<2.0	
				945.44	12/4/2018	19	<2.0	<2.0	<2.0	
			225		10/16/2019	8.4	<2.0	<2.0	<2.0	
					10/16/2019(D)	12	<2.0	<2.0	<2.0	
	А	1148.63	80	1068.63	10/16/2019	10.0	<2.0	<2.0	3.3	
BMW-10B			100	1048.63	10/16/2019	11	<2.0	<2.0	3.7	
					10/16/2019(D)	11	<2.0	<2.0	3.8	
	D	1148.63	225	913.63	12/4/2018	6.0	<2.0	<2.0	<2.0	
			255		10/16/2019	2.0	<2.0	<2.0	<2.0	
				893.63	11/1/2018*	2.34	<0.25	<0.25	NA	
BMW-10D			255		12/4/2018	3.0	<2.0	<2.0	<2.0	
					10/16/2019	3.0	<2.0	<2.0	<2.0	
			275	873.63	12/4/2018	5.8	<2.0	<2.0	<2.0	
			275		10/16/2019	4.6	<2.0	<2.0	<2.0	
	D	1180.11	156	1024.11	12/4/2018	3.7	<2.0	<2.0	<2.0	
			150		10/16/2019	2.3	<2.0	<2.0	<2.0	
			176	1004.11	12/4/2018	3.3	<2.0	<2.0	<2.0	
			170		10/16/2019	2	<2.0	<2.0	<2.0	
			196	984.11	12/4/2018	3.0	<2.0	<2.0	<2.0	
			190		10/16/2019	<2.0	<2.0	<2.0	<2.0	
	D	1135.93	225	910.93	12/4/2018	3.0	<2.0	<2.0	3.9	
			225		10/15/2019	5.9	<2.0	<2.0	<2.0	
			245	890.93	12/4/2018	7.3	<2.0	<2.0	<2.0	
BMW-14D			273		12/4/2018 (D)	6.3	<2.0	<2.0	<2.0	
					10/15/2019	<2.0	<2.0	<2.0	<2.0	
			205	870.93	12/4/2018	<2.0	<2.0	<2.0	4.2	
			205		10/15/2019	<2.0	<2.0	<2.0	<2.0	

		MP Elevation	Depth Sampled	Sample Elevation			Res	sults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	Aquifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
	D	1131.69	208	923.69	5/4/2019	5.9	<2.0	<2.0	<2.0	
			208		10/15/2019	5.1	<2.0	<2.0	<2.0	
			228	903.69	4/23/2019	4.1	<2.0	<2.0	<2.0	
			220		10/15/2019	10	<2.0	<2.0	<2.0	
			245	886.69	4/23/2019	5.0	<2.0	<2.0	<2.0	
			245		10/15/2019	8.3	<2.0	<2.0	<2.0	
			265	866.69	4/23/2019	5.2	<2.0	<2.0	<2.0	
			205		10/15/2019	4.0	<2.0	<2.0	<2.0	
	D	1190.00	140	1050.00	10/16/2019	120	<2.0	<2.0	<2.0	
			160	1030.00	10/16/2019	110	<2.0	<2.0	<2.0	
BMW-17D			180	1010.00	10/16/2019	110	<2.0	<2.0	<2.0	
			210	980.00	10/16/2019	100	<2.0	<2.0	<2.0	
			235	955.00	10/16/2019	81	<2.0	<2.0	<2.0	
	D	1158.00	220	938.00	10/16/2019	4.8	<2.0	<2.0	<2.0	CDS (NE)-7.3 µg/L Toluene (1000)-42 µg/L
BMW-18D			240	918.00	10/16/2019	5.3	<2.0	<2.0	<2.0	CDS (NE)-6.6 µg/L, Toluene (1000)-37 µg/L
					10/16/19(D)	8.8	<2.0	<2.0	<2.0	Toluene (1000)-9.4 µg/L
			260	898.00	10/16/2019	3.9	<2.0	<2.0	<2.0	CDS (NE)-8.8 µg/L Toluene (1000)-39 µg/L
	D	1153.00	215	938.00	10/15/2019	<2.0	<2.0	<2.0	<2.0	CDS (NE)-6.8 µg/L Toluene (1000)-23 µg/L
BMW-19D			235	918.00	10/15/2019	2.6	<2.0	<2.0	<2.0	Toluene (1000)-12 μg/L
			255	898.00	10/15/2019	<2.0	<2.0	<2.0	<2.0	CDS (NE)-9.0 µg/L Toluene (1000)-28 µg/L

		MP	Depth	Sample			Por	ulto ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	-
			A	quifer Water (Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
MW-07**	А	1156.75	NDS		7/9/2003	NA	NA	NA	NA	1,2-DCA (5.0) - 7.4
			NDS		11/19/2003	NA	NA	NA	NA	1,2-DCA (5.0) - 102
			NDS		1/16/2004	NA	NA	NA	NA	1,2-DCA (5.0) - 79.7
			NDS		6/25/2004	NA	NA	NA	NA	1,2-DCA (5.0) - 39
			NDS		9/17/2004	NA	NA	NA	NA	1,2-DCA (5.0) - 53
			NDS		11/18/2004	NA	NA	NA	NA	1,2-DCA (5.0) - 91
			NDS		6/16/2005	NA	NA	NA	NA	1,2-DCA (5.0) - 19
			NDS		9/8/2005	NA	NA	NA	NA	
			NDS		11/8/2005	NA	NA	NA	NA	1,2-DCA (5.0) - 9.56
			NDS		2/21/2006	NA	NA	NA	NA	1,2-DCA (5.0) - 10.8
			NDS		5/10/2006	NA	NA	NA	NA	1,2-DCA (5.0) - 10.2
			NDS		7/25/2006	NA	NA	NA	NA	1,2-DCA (5.0) - 4.88
			NDS		10/19/2006	NA	NA	NA	NA	1,2-DCA (5.0) - 7.86
			NDS		2/15/2007	NA	NA	NA	NA	1,2-DCA (5.0) - 5.19
			NDS		4/19/2007	NA	NA	NA	NA	1,2-DCA (5.0) - 8.45
			NDS		7/10/2007	NA	NA	NA	NA	1,2-DCA (5.0) - 9.3
			NDS		10/12/2007	NA	NA	NA	NA	
			NDS		2/11/2008	NA	NA	NA	NA	1,2-DCA (5.0) - 4.5
			NDS		6/5/2008	NA	NA	NA	NA	1,2-DCA (5.0) - 5.73
			NDS		7/17/2008	NA	NA	NA	NA	
			NDS		10/20/2008	NA	NA	NA	NA	1,2-DCA (5.0) - 4.71
			NDS		3/5/2009	NA	NA	NA	NA	1,2-DCA (5.0) - 4.07
			NDS		5/28/2009	NA	NA	NA	NA	1,2-DCA (5.0) - 4.13
			NDS		7/17/2009	NA	NA	NA	NA	1,2-DCA (5.0) - 4.1
			NDS		10/19/2009	NA	NA	NA	NA	1,2-DCA (5.0) - 5.42
			NIDO		2 /20 /2010	1.00	1.00	NIA	1.00	1,2-DCA (5.0) - 2.51
			ND2		3/30/2010	<1.00	<1.00	NA	<1.00	MTBE (94) - 5.71
						4.00	1.00			1,2-DCA (5.0) - 2.32
			NDS		3/30/2010	<1.00	<1.00	NA	<1.00	MTBE (94) - 5.38

		MP	Depth	Sample						
		Elevation	Sampled	Elevation			Res	ults ⁵⁻⁶		
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform	
			A	quifer Water O	Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷
MW-07**	А	1156.75	NDS		7/13/2010	<1.00	<1.00	NA	<1.00	MTBE (94) - 8.22
			NDS		8/4/2010	<1.00	<1.00	NA	<1.00	1,2-DCA (5.0) - 3.32 MTBE (94) - 13
			NDS		12/21/2010	<0.50	<0.50	NA	<0.50	1,2-DCA (5.0) - 1.3
			NDS		11/19/2012	<1.00	<1.00	NΔ	<1.00	MTBE (94) - 3.9
			NDS		6/16/2015	<1.00	<1.00	NA	<1.00	1,2-DCA (5.0) - 1.06 MTBE (94) - 14.8
			NDS		9/9/2015	<1.00	<1.00	NA	<1.00	1,2-DCA (5.0) - 1.78 MTBE - 29 1
			NDS		12/7/2018	<1.0	<1.0	NA	< 5.0	MTBE (94) - 1.57
			NDS		2/27/2019	<1.0	<1.0	NA	<5.0	MTBE (94) - 10.1
			67	1089.77	10/16/2019	<2.0	<2.0	<2.0	2.5	
	Α	1157.28	NDS		5/11/2010	<1.00	NA	NA	3.14	
			NDS		7/13/2010	<1.00	NA	NA	4.36	
			NDS		8/4/2010	<1.00	NA	NA	2.95	
			NDS		11/19/2012	2.23	NA	NA	1.64	
N/N/ 09**			NDS		6/16/2015	<1.00	NA	NA	3.42	
10100-00			NDS		9/9/2015	2.05	NA	NA	3.12	
			NDS		12/7/2018	9.42	0.59	NA	< 5.0	
			NDS		2/27/2019	11.8	0.43	NA	0.499	
			67	1090.30	4/24/2019	8.6	<2.0	<2.0	2.5	
			07		10/16/2019	6.2	<2.0	<2.0	2.8	
	Α	1156.28	NDS		5/11/2010	12.5	NA	NA	1.82	
			NDS		7/13/2010	13.2	NA	NA	2.08	
			NDS		8/3/2010	9.99	NA	NA	2.33	
			NDS		11/19/2012	29.1	NA	NA	1.31	
MM/ 00**			NDS		6/16/2015	8.54	NA	NA	2.49	
10100-03			NDS		9/9/2015	22.4	NA	NA	3.33	
			NDS		12/7/2018	30.0	1.21	NA	2.82	
			NDS		2/27/2019	31.1	1.37	NA	3.1	
			67	1089.41	4/24/2019	25	<2.0	<2.0	3.9	
			07		10/16/2019	19	<2.0	<2.0	3.5	

Table 3 REMEDIAL INVESTIGATION REPORT 40TH STREET AND OSBORN ROAD WQARF SITE

	_	MP Elevation	Depth Sampled	Sample Elevation			Res	ults ⁵⁻⁶	-			
Well Name	Zone ¹	(ft AMSL) ²	(ft BMP) ³	(ft AMSL) ⁴	Sample Date	PCE	TCE	c-1,2-DCE	Chloroform			
		A	quifer Water O	Quality Standard	5.0	5.0	5.0	100	Other Detected VOCs ⁷			
	А	1152.84	NDS		5/11/2010	<1.00	NA	NA	<1.00			
			NDS		7/13/2010	<1.00	NA	NA	<1.00			
			NDS		8/3/2010	<1.00	NA	NA	<1.00			
				NDS		12/27/2012	<1.00	NA	NA	<1.00		
NANA 10**			NDS		6/16/2015	<1.00	NA	NA	<1.00			
			-		NDS		9/9/2015	<1.00	NA	NA	<1.00	
			NDS		12/7/2018	3.06	<1.0	NA	0.407			
			NDS		2/27/2019	4.78	0.417	NA	0.415			
			71	1081.67	4/24/2019	3.9	<2.0	<2.0	<2.0			
			/1		10/16/2019	2.4	<2.0	<2.0	<2.0	MTBE (94) - 1.2 μg/L		

Notes:

1. Depth zone from shallow to deep, A-D. Zone A is associated with the shallow, off-site PCE plume, and Zones B-D are associated with the Site PCE plume.

2. Measuring point (MP) elevation in feet above mean sea level (ft AMSL)

3. Sample Depth - feet below MP (ft BMP). Non-depth specific (NDS)

4. Sample elevation in feet above mean sea level (ft AMSL)

5. Volatile organic compound (VOC) concentrations reported in micrograms per liter (ug/L). DCE - dichloroethene, PCE - tetrachloroethene, TCE - trichloroethene. BOLD indicates exceeds Aquifer

6. (D) denotes duplicate result

7. Other VOCs detected are shown with (AWQS/cleanup goal) and reported concentration. MTBE - methyl-t-butyl-ether, 1,2-DCA - 1,2-dichloroethane, CDS - carbon disulfide

* micropurge sample analyzed by non-compliance screening method. NA - not analyzed.

** indicates monitoring well associated with Former Mobil Station #18KDP, 3141 East Thomas Road, Phoenix, Arizona, LUST file number 3004.

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-01B	40	А	1193.59	1153.59	< 1.0	< 1.0	< 1.0
(December 2008)	50	А	1193.59	1143.59	< 1.0	< 1.0	< 1.0
	60	А	1193.59	1133.59	< 1.0	< 1.0	< 1.0
	70	А	1193.59	1123.59	< 1.0	< 1.0	< 1.0
	70	А	1193.59	1123.59	< 1.0	< 1.0	< 1.0
	80	В	1193.59	1113.59	< 1.0	< 1.0	< 1.0
	90	В	1193.59	1103.59	2	< 1.0	< 1.0
	100	В	1193.59	1093.59	1.2	< 1.0	< 1.0
BMW-02 A/B	50	А	1199.66	1149.66	< 1.0	< 1.0	< 1.0
(April 2008)	60	А	1199.66	1139.66	< 1.0	< 1.0	< 1.0
	60	А	1199.66	1139.66	< 1.0	< 1.0	< 1.0
	65	А	1199.66	1134.66	< 1.0	< 1.0	< 1.0
	70	А	1199.66	1129.66	< 1.0	< 1.0	< 1.0
	80	В	1199.66	1119.66	9.7	< 1.0	< 1.0
	90	В	1199.66	1109.66	44	< 1.0	< 1.0
	100	В	1199.66	1099.66	110	1.3	< 1.0

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-02D	160	D	1199.63	1039.63	190.0	2.5	-
(December 2015)	180	D	1199.63	1019.63	23.0	1.2	-
	180	D	1199.63	1019.63	26.0	2.2	-
	200	D	1199.63	999.63	110.0	1.7	-
	220	D	1199.63	979.63	64.0	1.5	-
	220	D	1199.63	979.63	50.0	1.4	-
	240	D	1199.63	959.63	5.6	0.7	-
	240	D	1199.63	959.63	6.7	0.9	-
	260	D	1199.63	939.63	18.0	0.9	-
	260	D	1199.63	939.63	19.0	1.7	-
	261	D	1199.63	938.63	57.0	1.2	-
	261	D	1199.63	938.63	56.0	1.4	-
BMW-02E	160	D	1199.63	1039.63	47.0	<0.25	<0.25
(April 2019)	180	D	1199.63	1019.63	12.0	<0.25	<0.25
	205	D	1199.63	994.63	11.0	<0.25	<0.25
	220	D	1199.63	979.63	360.0	<0.25	<0.25
	240	D	1199.63	959.63	23.0	<0.25	<0.25
	260	D	1199.63	939.63	1.1	<0.25	<0.25

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-03 A/B	52	А	1201.09	1149.09	< 1.0	< 1.0	< 1.0
(May 2008)	67	А	1201.09	1134.09	1.8	< 1.0	< 1.0
	72	А	1201.09	1129.09	2.4	< 1.0	< 1.0
	80.5	В	1201.09	1120.59	3.6	< 1.0	< 1.0
	92	В	1201.09	1109.09	58	6.3	< 1.0
	92	В	1201.09	1109.09	52	5.4	< 1.0
	101	В	1201.09	1100.09	69	8.1	< 1.0
BMW-07B	42.5	А	1189.20	1146.70	< 1.0	< 1.0	< 1.0
(December 2013)	65	А	1189.20	1124.20	< 1.0	< 1.0	< 1.0
	102.5	В	1189.20	1086.70	< 1.0	< 1.0	< 1.0
	112.5	В	1189.20	1076.70	< 1.0	< 1.0	< 1.0
BMW-08D	100	В	1190	1090	3.5	<0.50	-
(January 2016)	120	В	1190	1070	11.0	<0.50	-
	141	С	1190	1049	3.2	<0.50	-
	160	С	1190	1030	46.0	<0.50	-
BMW-09C	80	A	1170.54	1090.54	<1.0	<1.0	<1.0
(September 2019)	100	В	1170.54	1070.54	1.0	<1.0	<1.0
	120	В	1170.54	1050.54	1.4	<1.0	<1.0

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-09D	52	А	1170.44	1118.44	<0.25	<0.25	<0.25
(March 2018)	82	А	1170.44	1088.44	<0.25	<0.25	<0.25
	102	В	1170.44	1068.44	5.67	<0.25	<0.25
	121	В	1170.44	1049.44	10.22	0.49	<0.25
	142	С	1170.44	1028.44	0.35	<0.25	<0.25
	162	С	1170.44	1008.44	12.66	0.43	<0.25
	182	D	1170.44	988.44	16.6	0.47	<0.25
	202	D	1170.44	968.44	23.37	0.63	<0.25
	222	D	1170.44	948.44	10.4	<0.25	<0.25
	242	D	1170.44	928.44	4.3	<0.25	<0.25
	261	D	1170.44	909.44	9.0	<0.25	<0.25
	281	D	1170.44	889.44	2.15	<0.25	<0.25
BMW-10B	95	A	1149.25	1054.25	1.9	<1.0	<1.0
(September 2019)	105	A	1149.25	1044.25	6.9	<1.0	<1.0

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE µg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-10D	77	А	1148.63	1071.63	8.06	1.2	<0.25
(April 2018)	96	А	1148.63	1052.63	8.58	1.1	<0.25
	113	В	1148.63	1035.63	3.83	<0.25	<0.25
	133	В	1148.63	1015.63	<0.25	<0.25	<0.25
	153	С	1148.63	995.63	0.60	<0.25	<0.25
	165	С	1148.63	983.63	1.41	0.5	<0.25
	173	D	1148.63	975.63	<0.25	<0.25	<0.25
	193	D	1148.63	955.63	<0.25	<0.25	<0.25
	213	D	1148.63	935.63	1.49	<0.25	<0.25
	233	D	1148.63	915.63	4.71	<0.25	<0.25
	253	D	1148.63	895.63	5.02	<0.25	<0.25
	273	D	1148.63	875.63	8.8	<0.25	<0.25
BMW-11D	44	А	1180.11	1136.11	<0.25	<0.25	<0.25
(May 2018)	63	А	1180.11	1117.11	<0.25	<0.25	<0.25
	83	В	1180.11	1097.11	<0.25	<0.25	<0.25
	103	В	1180.11	1077.11	<0.25	<0.25	<0.25
	123	С	1180.11	1057.11	<0.25	<0.25	<0.25
	143	С	1180.11	1037.11	<0.25	<0.25	<0.25
	164	D	1180.11	1016.11	<0.25	<0.25	<0.25
	183	D	1180.11	997.11	<0.25	<0.25	<0.25
	203	D	1180.11	977.11	<0.25	<0.25	<0.25
	223	D	1180.11	957.11	<0.25	<0.25	<0.25

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE µg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
SMW-14B	45	А	1207	1162	<0.25	<0.25	< 0.25
(December 2017)	65	А	1207	1142	<0.25	<0.25	<0.25
	85	В	1207	1122	7.36	0.97	<0.25
	105	В	1207	1102	1.83	<0.25	< 0.25
	135	С	1207	1072	2.66	<0.25	<0.25
	155	D	1207	1052	1.75	<0.25	< 0.25
	175	D	1207	1032	<0.25	< 0.25	< 0.25
	195	D	1207	1012	<0.25	<0.25	< 0.25
	214	D	1207	993	<0.25	<0.25	< 0.25
	240	D	1207	967	0.74	<0.25	<0.25
	255	D	1207	952	<0.25	<0.25	<0.25
BMW-14D	100	А	1135.93	1035.93	0.76	<0.25	<0.25
(October 2018)	110	А	1135.93	1025.93	2.84	0.9	<0.25
	125	В	1135.93	1010.93	1.44	<0.25	< 0.25
	145	В	1135.93	990.93	1.00	<0.25	< 0.25
	165	С	1135.93	970.93	0.60	<0.25	< 0.25
	185	С	1135.93	950.93	<0.25	<0.25	< 0.25
	205	С	1135.93	930.93	0.58	<0.25	< 0.25
	225	D	1135.93	910.93	4.04	<0.25	< 0.25
	245	D	1135.93	890.93	2.50	< 0.25	< 0.25
	265	D	1135.93	870.93	1.53	<0.25	< 0.25
	285	D	1135.93	850.93	< 0.25	<0.25	< 0.25

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-15D	42	А	1212	1170	<0.25	<0.25	<0.25
(May 2017)	66	А	1212	1146	<0.25	<0.25	<0.25
	86	В	1212	1126	<0.25	<0.25	<0.25
	105	В	1212	1107	<0.25	<0.25	<0.25
	125	С	1212	1087	<0.25	<0.25	<0.25
	145	С	1212	1067	<0.25	<0.25	<0.25
	172	D	1212	1040	<0.25	<0.25	<0.25
	200	D	1212	1012	<0.25	<0.25	<0.25
BMW-16D	110	А	1131.69	1021.69	2.1	<0.25	<0.25
(April 2019)	122	А	1131.69	1009.69	2.5	<0.25	<0.25
	173	С	1131.69	958.69	<0.50	<0.50	<0.25
	208	D	1131.69	923.69	5.6	<0.50	<0.25
	220	D	1131.69	911.69	4.8	<0.50	<0.25
	245	D	1131.69	886.69	2.1	<0.50	<0.25
	265	D	1131.69	866.69	0.7	<0.50	<0.25

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-17D	74	А	1185.97	1112	10.0	<1.0	<0.25
(August 2019)	94	В	1185.97	1092	2.7	<1.0	<0.25
-	114	В	1185.97	1072	14	<1.0	<0.25
	134	С	1185.97	1052	56	1.4	<0.25
	154	С	1185.97	1032	42	<1.0	<0.25
	174	D	1185.97	1012	45	<1.0	<0.25
	194	D	1185.97	992	30	<1.0	<0.25
	214	D	1185.97	972	23	<1.0	<0.25
	234	D	1185.97	952	15	<1.0	<0.25
	254	D	1185.97	932	2.5	<1.0	<0.25
BMW-18D	80	А	1157.00	1077	<1.0	<1.0	<1.0
(September 2019)	100	А	1157.00	1057	<1.0	<1.0	<1.0
	120	В	1157.00	1037	1.4	<1.0	<1.0
	140	С	1157.00	1017	1	<1.0	<1.0
	160	С	1157.00	997	<1.0	<1.0	<1.0
	180	С	1157.00	977	5.6	<1.0	<1.0
	200	D	1157.00	957	4.8	<1.0	<1.0
	220	D	1157.00	937	8.3	<1.0	<1.0
	240	D	1157.00	917	<1.0	<1.0	<1.0
	260	D	1157.00	897	<1.0	<1.0	<1.0

SUMMARY OF VERTICAL PROFILE SAMPLE GROUNDWATER VOC RESULTS

REMEDIAL INVESTIGATION REPORT, 40TH STREET AND OSBORN ROAD WQARF SITE

Borehole Number and Date	Sample Depth (feet bgs) ¹	Zone ²	MP Elevation (feet AMSL) ³	Sample Elevation (feet AMSL) ⁴	PCE μg/L ⁶	ΤCE μg/L ⁶	cis-1,2-DCE µg/L ⁶
				AWQS⁵	5.0	5.0	70.0
BMW-19D	80	А	1152.04	1072	1.2	<1.0	<1.0
(September 2019)	100	А	1152.04	1052	5.9	<1.0	<1.0
	120	В	1152.04	1032	<1.0	<1.0	<1.0
	140	С	1152.04	1012	3.2	<1.0	<1.0
	160	С	1152.04	992	<1.0	<1.0	<1.0
	180	С	1152.04	972	4.6	<1.0	<1.0
	200	D	1152.04	952	2.1	<1.0	<1.0
	220	D	1152.04	932	1.8	<1.0	<1.0
	240	D	1152.04	912	1.1	<1.0	<1.0

1. Sample Depth - feet below measuring point (MP).

2. Depth zone from shallow to deep, A-D. Zone A is associated with the shallow, off-site PCE plume, and Zones B-D are associated with the Site PCE plume.

3. MP Elevation in feet above mean sea level (AMSL)

4. Sample elevation in feet AMSL

5. Aquifer Water Quality Standard (AWQS)

6. Volatile organic compound (VOC) concentrations reported in micrograms per liter (ug/L). C-1,2-DCE - cis-1,2-dichloroethene, PCE -

tetrachloroethene, TCE - trichloroethene. **BOLD** indicates exceeds AWQS

Table 5 Volatile Organic Compounds in Soil Vapor, Remedial Investigation Report 40th Street and Osborn Road WQARF Site

Well Identifier /	Date	Sample Depth		V	OCs (ng)		
Sample Identifier	Sampled	(inches bls)	PCE	TCE	cis-1,2-DCE	Chloroform	Notes
566567	07/01/08	32	0.05	< 0.01	< 0.02	< 0.05	
566568	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	
566569	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	
566570	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	
566571	07/01/08	18	< 0.02	< 0.01	< 0.02	< 0.05	
566572	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	DUP

Notes:

NOTE: Detections are shown in BOLD type.

bls = Below land surface

PCE = Tetrachloroethylene

TCE = Trichloroethylene

cis-1,2-DCE = cis 1,2-Dichloroethylene

(<) = Less than; the value is the Limit of Detection for that compound

NA = Not analyzed for constituent

DUP = Duplicate sample



FIGURES









Rd all High	Peoria Glendale Papago Fay Phoenix Sectisdale Papago Fay Phoenix Tempe Mesa Glibbert Area of Detail
N A	Legend
	Groundwater Monitoring Well
	 SRP Production Well
	Boring Location - Abandoned
	Approximate Distribution of PCE Above 5 µg/L (Dash Where Inferred)
N 46th Sta	Notes:BMW-14DGroundwater Monitoring Well Identification0.76Results that are black are vertical profile sample results3Results that are blue are from October 20197.3Results that are blue are from October 20197.3Results that are bolded and italicized exceed the Aquifer Water Quality Standard of 5 µg/Lµg/LMicrogram per literftFeetamslAbove Mean Sea LevelbgsBelow Ground SurfacePCETetrachloroetheneWQARFWater Quality Assurance Revolving Fund
E Oak SI	0 650 1,300
-E	Remedial Investigation Report 40th St & Osborn Rd WQARF Site Phoenix, Arizona
	FIGURE October 2019 2 Site PCE Plume Map
	Job No. 14-2019-2034 PM: JC Date: 3/20/2020 Scale: 1"= 1300'
Etal	The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2019-2034. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.



2d	Peona Glendale Papage Fwy Phoenix Bit Bit Tempe Mesa Glibert Area of Detail
5)	Legend
	Groundwater Monitoring Well
	SRP Production Well
	Ø Boring Location -
	Approximate Distribution of PCE Above 5 µg/L (Dash Where Inferred)
	Notes: BMW-14D Groundwater Monitoring Well Identification 0.76 Results that are black are vertical profile sample results 3 Results that are blue are from October 2019 7.3 Results that are blue are from October 2019 #up/L Microgram per liter ft Feet
EC	amsi Above Mean Sea Level bgs Below Ground Surface
IL S	PCE Tetrachloroethene
N 461	WQARF Water Quality Assurance Revolving Fund
	0 650 1.300 Å
	Feet
E Oak St E roe d	Remedial Investigation Report 40th St & Osborn Rd WQARF Site Phoenix, Arizona
	FIGURE October 2019 3 Shallow Off-Site PCE Plume Map
	Job No. 14-2019-2034 PM: JC Date: 3/20/2020 Scale: 1"= 1300'
	The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2019-2034. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

- CONCENTRATION OF TETRACHLOROETHYLENE (PCE) DETECTED 3.6 IN GRAB GROUNDWATER SAMPLE IN MICROGRAMS PER LITER (ug/I), BOLD IF EXCEDES 5.0 ug/I
- DEPTH-DISCRETE GROUNDWATER SAMPLE
 (e.g. SIMULPROBE/HYDROPUNCH OR HYDROPUNCH SAMPLER)
- GROUNDWATER WELL LOCATION
- BORING LOCATION
- **EXPLANATION**

А



3.6

- ?- -? - WHERE INFERRED

WATER LEVEL ELEVATION MEASURED ON OCTOBER 15, 2019

OCTOBER 2019 CONCENTRATION OF TETRACHLOROETHYLENE (PCE) DETECTED IN GROUNDWATER IN MICROGRAMS PER LITER (ug/I), DECEMBER 2018 AND APRIL 2019. BOLD IF EXCEEDS 5.0 ug/I



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- CONCENTRATION OF TETRACHLOROETHYLENE (PCE) DETECTED IN GRAB GROUNDWATER SAMPLE IN MICROGRAMS PER LITER (ug/I), BOLD IF EXCEDES 5.0 ug/I 3.6
- DEPTH-DISCRETE GROUNDWATER SAMPLE (e.g. SIMULPROBE/HYDROPUNCH OR HYDROPUNCH SAMPLER)
- GROUNDWATER WELL LOCATION

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- BORING LOCATION
- **EXPLANATION**



3.6

ND

- WATER LEVEL ELEVATION MEASURED ON OCTOBER 15. 2019
- NON-DETECTION
- OCTOBER 2019 CONCENTRATION OF TETRACHLOROETHYLENE (PCE) DETECTED IN GROUNDWATER IN MICROGRAMS PER LITER (ug/I), BOLD IF EXCEEDS 5.0 ug/I





SECTION LOCATION MAP

В





Figure 7 **Exposure Path Diagram Remedial Investigation Report** 40th Street and Osborn Road WQARF Site Phoenix, AZ



RECEPTORS: CURRENT AND FUTURE LAND USE

a dotted line indicates an incomplete or broken exposure pathway = absent/insignificant exposure = potentially complete exposure pathway

3/20/2020 Figure 7_CSM-40OSB



APPENDIX A

BORING LOGS AND WELL COMPLETION DIAGRAMS





s	Client: ADEQ Site: 40th Street & Osborn Road Phoenix, Arizona	Date C Hole C Drilling Method : Hollow Stem Au Drill Rig : BK 81					Company Rep. : Theresa Jones Total Depth : 90 feet uger Drilling Firm : Yellow Jacket ADWR Number : 55-598109				
	180T.20402.08.0005	Sampling Me	ethod	: Spli	t Spoon	-					
epth in ≂eet	DESCRIPTION		nscs	GRAPHIC	PID (ppm)	Sample Time	Blow Count	Well: E	3MW1 Unavailable Cover		
0 10 10	SILT, light brown, medium density, no odd staining present.	ors or			24.0	9.25	10/24/40		- Cement grount - PVC Blank Casing - Bentonite Seal		
20					9,0	9:32	12/28/30		— Sand		
30	SILT with 15-20% coarse grained sand ar small gravel, dark brown, medium density Groundwater encountered.	nd 7.			0.0	9:45	22/50-5	_	0.02 Slotted Screen		
40			ML				à.		— Sand (gravel pack)		
50					0.0	10:18	19/50-4				
60 1					•	7	ι.	<u>; []</u>			
70	SILT with a trace of sand. Medium brown damp, medium density, no odors or staini observed.	n, ing			-	12:15	30-6		— Bentonite Seal		
80	SILT with 15-20% coarse grained sand ar small gravel. Medium brown, damp, no st or odors observed.	nd aining			4	14.1					
90	Boring terminated at 90 feet bgs.				-		50-6				



FILEPATH: I:\ASRAC\East Central Phoenix\40th St & Osborn Road (20421)\4.3 Maps\GWM, BMW-1B AS-BUILT.dwg|kganning|Jan 22, 2009 at 9:45|Layout: Figure 3

PROJE LOCAT PROJE DRILLII INSTAL DRILLII DRILLII SAMPL	CT: 4 ION: V CT NUM NG: LATION NG COM NG EQU NG MET LING EQ	Oth S Veldo I <u>BER:</u> STA : STA IPANY IPMEN HOD: UIPME	treet and Osborn Road WQARF Site n and 42nd Street 18OT.20421.08 RTED 4/14/08 COMPLETED: 4/18/08 RTED 4/14/08 COMPLETED: 4/18/08 Boart/LongYear Sonic Rig 1513 Sonic 6'' x 10'' core RT: Simulprobe	BMW-2 PAGE 1 OF 3 SE NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): 29 4/15/08 BOREHOLE DEPTH (ft): STATIC DTW (ft): WELL DEPTH (ft): 100 WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER LOGGED BY: PMP CHECKED BY:								
Time & Depth (feet)	Graphic Log	Leog Cog Cog Cog Cog Cog Cog Cog Cog Cog C		Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction		
1432 1500		SM	SILTY SAND; SM; 5 YR 5/6 yellowish red; medium dense; moist; no odor; no staining; poorly graded; Approximately 60% sand 40% silt, trace clay.		1503 BMW-2@			0.4	5-	XUIXVIIXUIXVIIXVIIX VIIXVIIXVIIXVIIXVIIX	Concrete Neat cement grout	
10			Loose; subangular; well graded; Approximately trace gravel (<1/4"), 60% sand, 30% silt 10% clay.		5-10' 1515 BMW-2@ 7.5-12.5'			2.1	10-		−2" Sch. 80 PVC pipe ←3/8"	
1:	5 	SM	SM; dense; dry; Approximately 5% gravel (<1/4"), 45% sand, 40% silt, and 10% clay.						15-		chips	
1623 20					1530 BMW-2@ 17.5-22.5' 1623 BMW-2@ 20.25			1.6 0.8	20-			
1627 2	5-	SC	CLAYEY SAND; SC; moist; subrounded; Approximately 10% gravel (<1/2"), 20% sand, 60% silt 10% clay.		1627 BMW-2@ 25-30'			1.3	25 -			
1649 30		CL SC	CLAY WITH SAND; CL; low plasticity; hard; saturated; subangular; Approximately trace gravel (<1/4"), 20% sand, 60% silt, and 20% clay. Moist lense CLAYEY SAND; SC: saturated:		1649 BMW-2@ 30-35'			4.8	⊻ 30-			
20817 3:	5		Approximately 5% gravel (<1/2"), 15% sand, 60% silt, and 20% clay. 5YR 4/4 reddish brown; saturated Moist lense Moist lense		0817 BMW-2@ 35-40'			20.4	35-		2" Sch. 80 PVC pipe 	

PROJEC LOCATIC PROJEC DRILLING INSTALL DRILLING DRILLING SAMPLIN	T: 40 DN: W T <u>NUM</u> 3: ATION: 3 COM 3 EQUI 3 METH IG EQU	Oth S (eldo BER: STA STA PANY PANY PMEN 10D: JIPME	treet and Osborn Road WQARF Site n and 42nd Street <u>180T.20421.08</u> RTED 4/14/08 COMPLETED: 4/18/08 RTED 4/14/08 COMPLETED: 4/18/08 : Boart/LongYear IT: Sonic Rig 1513 Sonic 6'' x 10'' core	WELL / PROBEHOLE / BOREHOLE NO: BMW-2 PAGE 2 OF 3 S E C C NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): 29 4/15/08 BOREHOLE DEPTH (ft): 100.0 STATIC DTW (ft): WELL DEPTH (ft): 100.0 WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): LOGGED BY: PMP CHECKED BY:							
Time & Depth (feet)	Graphic Log	uscs	Description	Sample	Time Sample ID	Aeasured Recov. (feet)	Blow Count	eadspace PID (units)	Depth (feet)		Well Construction
0917 0923 45-		ML	SILT WITH SAND AND CLAY; ML; 2.5 YR 6/4 light reddish brown; hard; moist; Approximately 10% gravel (<1/4"), 10% sand, 70% silt and 10% clay. SANDY SILT; subrounded; Approximately trace gravel (<1/4"), 20% sand, 70% silt, 10% clay.		0917 BMW-2@ 40-45'	2		<u>10.5</u>	45-		2" Sch. 80 PVC 0.020" slotted screen
0950 50-			SANDY SILT; saturated; Approximately 5% gravel (<1/4"), 20% sand, 65% silt, 10% clay.		0950 BMW-2@ 50-55'	50		12.6	50		
1108 55- 1130 60-					1108 BMW-2@ 55-60'			393	55		
65-		GC	CLAYEY GRAVEL WITH SILT AND SAND; GC; 5YR 4/4 reddish brown; medium plasticity; saturated; Approximately 30% gravel (<1/2"), 20% sand, 20% silt and 30% clay.		1130 BMW-2@ 60-65'	10 5		211	- - 65 - -		 ➡ 1/4" coated TR30 bentonite pellets
1655 70-		SC	CLAYEY SAND; SC; saturated; Approximately 10% gravel (<1/4"), 60% sand, 10% silt, 20% clay. CLAYEY SAND WITH GRAVEL; saturated; Approximately 5% gravel (<1/4"), 70% sand, 5% silt, 20% clay.		0725 BMW-2@ 70-75'	5		0.9	70		
0901 75-		ML	SANDY CLAY; ML; hard; moist; Approximately 5% gravel (<1/4"), 20% sand, 70% silt; 10% clay. SAND WITH CLAY; saturated; Approximately 5% gravel (<1/2"), 75% coarse sand, 20% clay/silt. Matrix is clast supported.		0902 BMW-2@ 75-80'			1.3	75		

PROJECT LOCATIO PROJECT DRILLING INSTALLA DRILLING DRILLING SAMPLIN	T: 40 N: VV T <u>NUMI</u> S: ATION: S COMI S EQUI S EQUI G EQUI	Oth S /eldoi BER: STA STA PANY PMEN HOD: JIPME	treet and Osborn Road WQARF Site n and 42nd Street 18OT.20421.08 RTED 4/14/08 COMPLETED: 4/18/08 RTED 4/14/08 COMPLETED: 4/18/08 Boart/LongYear IT: Sonic Rig 1513 Sonic 6'' x 10'' core NT: Simulprobe	BMW-2 PAGE 3 OF 3 S E C O INORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): 29 4/15/08 BOREHOLE DEPTH (ft): 100.0 STATIC DTW (ft): WELL DEPTH (ft): 100.0 WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): " LOGGED BY: PMP CHECKED BY:								
Time & Depth (feet)	Graphic Log	N S Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)		Well Construction		
1140 85-		SM	SAND; SM; saturated; Approximately 5% gravel (<1/4"), 75% sand, 15% silt, 5% clay.		1120 BMW-2@ 80-85'	10		3.9	85-		 −8/12 Colorado silica sand −2" Sch. 80 PVC 0.020" slotted 	
					1140 BMW-2@ 85-90'			3.5			screen	
1150 90- - -		SC	CLAYEY SAND; SC; saturated; subangular; Approximately trace gravel (<1/4"), 50% sand, 20% silt 30% clay.		1150 BMW-2@ 90-95'	10		1.5	90			
- 1320 95– -			SAND WITH CLAY; moist; subrounded; Approximately 5% gravel (<1/4"), 75% sand, 20% clay/ silt.		1320 BMW-2@			2.7	95-			
1356 100- -			CLAYEY SAND; hard; moist; Approximately 5% gravel (<1/4"), 35% sand, 10% silt, 50% clay. Hole terminated at 101.5 feet.		95-100	10			100			
105-	-				BMW-2@ 100-105'			2.7	- - 105 -			
110-	-								110-			
115-	-								115-			
					1.1	-					- •	





ale – K: \ALE\dwg\Dwg&Figs\Well Logs\515-0266.dwg 2: 07pm 2016 Ĵ,

East	t Central	Pho	enix -	Phoenix, AZ	Project Name: 40t	h Street and Osborn
Lithol	ogic log: Bl	MW-0)2D		Project Number: 1	186.02
Date in	nstalled: 12/1	7/15		Borehole diameter:8.25-in	ch	
Drill m	ueptn: 280 fe hethod: Rotor	et DGS sonic		Date Abandoned: 12/23/1	0	
DEPTH (feet Below Land Surface)	PID/TEMP (ppm/degF)		nscs	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION	COMMENTS
50-						
	15.5/105.8		ML	SILT WITH SAND - Reddish brown (5YR4/4); 80% nonplastic fines; 15% fine to coarse sand; 5% fine subangular, trace coarse rounded gravel to 1". Firm to hard, wet, weak to locally strong reaction to HCI.		Borehole abandoned and filled with bentonite grout.
- 55	6.1/96.6					
60	2.3/116.0 1.0/115.8		ML	SILT WITH GRAVEL - Reddish brown (5YR5/4); 75% nonplastic fines; 15% fine subangular gravel; 10% fine to coarse sand. Moderate to strong reaction to HCI, wet, hard.		
	1.1/108.6			SILT - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to		
65	2.0/119.1		ML	medium, trace coarse sand; trace fine subangular to subrounded gravel to $\prime\!$		
	0.8/115.1		SM	SILTY SAND - Dark reddish brown (5YR3/4); 50% fine to coarse subrounded sand; 45% nonplastic fines; 5% fine subangular to subrounded gravel to ¼".		
70	0.3/102.5			Wet, loose, no reaction to HCI.		
	1.0/99.5		ML	10% fine to coarse subrounded sand' 5% fine subangular to subrounded gravel to ¼". Hard, wet, moderate to strong reaction to HCl to 73', no reaction		
75— —	0.1/106.1			below.		
	0.0/108.1					
80 — _	0.9/94.1		ML	SANDY SIL1 WITH GRAVEL - Reddish brown (5YR4/4); 60% nonplastic fines; 25% fine to coarse subrounded sand; 15% fine subrounded gravel to 5/8".		
	3.1/128.3			wet, no reaction to HCI, nard.		
85	1.7/101.1		ML	SILT WITH SAND - Same as above.		
	1.3/101.6		SM	SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 45% nonplastic fines; 40% fine to coarse subrounded to rounded sand;		
90 —	0.5/94.8			15% fine subrounded gravel. Wet, no reaction to HCl, firm.		
_	9.0/138.3		ML	SILT WITH SAND - Same as above.		
95 —	9.3/186.9		SM	SILTY SAND WITH GRAVEL - Same as above.		
	15.1/179.6		ML	SILT - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to medium, trace coarse subangular to subrounded sand. Moist, moderate to strong reaction to HCI, minor clay streak. Contains siltstone clasts with black manganese		
100 —	2.0/117.3					515 0000
	HARG	S+	ASSO		RMI NU. 1186.02	010-0200
	Hydr	ogeol	iogy/E	ngineering		
				BMW-02D		

				FIIOEIIIX, AZ		Project Name: 40t	h Street and Osborn
Lithold	ogic log: BN	/W-0	2D			Project Number: 1	186.02
Date in	nstalled: 12/1	7/15			Borehole diameter: 8.25-ir	nch	
Total c	depth: 280 fe	et bgs			Date Abandoned: 12/23/15	5	
	nethod: Roto	sonic					
DEP IH (feet Below Land Surface)	PID/TEMP (ppm/degF)	LITHOLOGIC LOG	nscs	LITHOLOGIC DESCR	IPTION	WELL CONSTRUCTION	COMMENTS
100—							Borehole shandoned and
	4.3/92.6						filled with bentonite grout.
105—	5.3/93.9		SM	SILTY SAND WITH GRAVEL - Reddis coarse subrounded to rounded sand; subrounded to rounded gravel to ³ / ² .	sh brown (5YR4/4); 45% fine to 40% nonplastic fines; 15% fine		
	7.3/90.5			nodules.			
110	13.1/94.1						
	1.1/96.8		ML	SANDY SILT - Reddish brown (5YR4 fine to coarse subangular to subrour subangular gravel to 3/8". No to weak reaction to HCL cont	/4); 50% nonplastic fines; 45% nded to rounded sand; 5% fine ains clasts of well cemented		
115—	1.3/93.0			siltstone.			
	2.4/92.3			SILTY SAND WITH GRAVEL - Sam	ne as above; 45% sand: 35%		
120	3.9/96.8		SM	nonplastic fines; 20% gravel.	,,		
405	2.0/102.5		м	SANDY SILT - Reddish brown (5YR4 fine to coarse subrounded sand; 10% gravel to ³ /"	/4); 60% nonplastic fines; 30% fine subangular to subrounded		
123 	5.9/119.3			Soft, wet, no reaction to HCI.			
_	7.3/116.6						
130	13.2/121.8		ML	SILT WITH SAND - Reddish brown (15% fine, less medium and coarse sub Firm, wet, weak reaction to HCI.	5YR4/4); 85% nonplastic fines; rounded sand.		
135_	26.4/160.5						
	17.8/104.1		ML	SILT WITH SAND- Reddish brown (5YF fine to coarse subrounded sand; 5% gravel	R4/4); 75% nonplastic fines; 20% fine subangular to subrounded		
140	31.6/92.9			Soft, no reaction to HCl, wet, contains	well lithified silt horizons.		
	25.3/131.7						
145—	32.2/150.6		ML	SILT - Reddish brown (5YR5/4); 90% coarse subrounded sand; trace fine su Firm, strong reaction to HCI to 142', we	o nonplastic fines; 10% fine to ubrounded gravel. eak below, wet.		
_	10.0/114.2						
150	22.9/94.8		ML				
130					6/16	RPT NO 1186 02	515-0266
	: HAKG	15+A	1220			100.0Z	



Las	Central	Pho	enix -	Phoenix, AZ	Project Name: 40t	h Street and Osborn
Lithol	ogic log: BN	/W-0	2D		Project Number: 1	186.02
Date in Total of	nstalled: 12/1 depth: 280 fe	17/15 et bas		Borehole diameter: 8.25-ir Date Δbandoned: 12/23/1	nch 5	
Drill m	nethod: Roto	sonic				
DEPTH (feet Below Land Surface)	PID/TEMP (ppm/degF)	LITHOLOGIC LOG	nscs	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION	COMMENTS
200-		пияти	x I		RUNUNU	
 205	7.1/105.6 4.6/91.5		SM	SILTY SAND WITH GRAVEL - Reddish brown (2.5YR4/4); 45% fine to coarse subangular to subrounded sand; 40% nonplastic fines; 15% fine to coarse angular gravel; trace subangular cobbles to 5".		Borehole abandoned and filled with bentonite grout.
_	0.1/07.2					
 210	3.9/115.8 5.4/114.6		ML	SANDY SILT WITH GRAVEL - Reddish brown (5YR4/4); 50% nonplastic fines; 35% fine to coarse subangular sand; 15% fine to coarse angular gravel to 1½". Firm to hard, wet, no reaction to HCI. Very hard breccia at 209'.		
 215	4.4/101.1 3.5/93.7		SM	SILTY SAND WITH GRAVEL - Reddish brown (2.5YR4/4); 45% fine to coarse subrounded to rounded sand; 35% nonplastic fines; 20% fine, less coarse subrounded to rounded gravel.		
	1.1/83.8					
	7.2/90.8		ML	SANDY SILT - Reddish brown (5YR4/4); 75% nonplastic fines; 20% fine to coarse subangular to subrounded sand; 5% fine subangular gravel to ½". Firm to hard, wet, moderate to strong reaction to HCL, abundant bemaitte and hiotite at 218 5!		
220-	15.1/104.5	HH I		SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 45%		
	19.5/131.5		SM	nonplastic fines; 40% fine to coarse subangular sand; 15% fine, trace coarse angular to subangular gravel to 1". Wet, firm to hard, weak reaction to HCI.		
225—	55.4/132.4		ML	SILT WITH SAND - Reddish brown (5YR4/4); 80% nonplastic fines; 20% fine to coarse subangular sand; trace fine, less angular gravel to 1". Wet at 223', moist at 224', dry below, strong reaction to HCI.		
-	19.1/121.6		ML	SANDY SILT - Reddish brown (5YR4/4); 65% nonplastic fines; 35% fine to coarse subangular to subrounded sand; trace fine angular gravel to ³ / ₄ ".		
230	27.1/116.9		ML	SILT WITH GRAVEL - Reddish brown (5YR4/4); 75% nonplastic fines; 15% fine to coarse subangular gravel to 2"; 10% fine to coarse subangular to subrounded sand.		
	39.7/133.7			Moist, strong reaction to HCI, hard. SILTY SAND/SANDY SILT - Reddish brown (2.5YR4/4); 50% nonplastic		
235	49.8/105.4		SM/ML	subangular to subrounded gravel to 2". Firm, wet, no reactin to HCI.		
_	7.4/94.4			SILTY SAND - Reddish brown (5YR4/4); 55% fine to coarse subrounded to rounded sand; 35% nonplastic fines; 10% fine, trace		
240	25.1/94.6		SM	coarse subrounded gravel to 1½". Soft, wet, soft reaction to HCI.		
_	8.4/89.7		SM	SULIT SAND - Reduisn brown (SYR4/4); 50% fine to coarse subabangular to subrounded sand; 45% nonplastic fines; 5% fine, trace coarse subrounded gravel to 1½". Soft, wet, no reaction to HCL.		
 245	4.3/98.2		ML	SANDY SILT WITH GRAVEL - Reddish brown (5YR4/4); 55% non to low plastic fines; 25% fine to coarse angular to subangular sand; 20%		
_	34.4/118.0			fine to coarse angular gravel; trace rounded cobbles to 5".		
	9.6/129.7		SM	SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 45% fine to coarse subrounded sand: 40% nonplastic fines: 15% fine subangular		
<u> 250 —</u>	31.8/122.9			gravel, trace coarse rounded gravel to 2". Soft, wet, no reaction to HCI.		
	HARG		ASSO	CIATES, INC.	RPT NO. 1186.02	2 515-0266

BMW-02D LITHOLOGIC LOG



Proiect Name:	(ECP) 40th Street & Osborn Road WQARF

Project	N	am	e:	(LCI)40	in Sileer &	OSDOITT		Boring ID [.] BMW-02E
Project	N	um	be	r: <u>14-2018-</u> 2	2039.03	D	ate:	-02-2019 Page 1 of 12
Boring	L	оса	tio	า:	BMW-02E			Logged By: Issac Torres
Elevati	or	n ar	nd D	Datum:	1199.63' (N	AVD88)		Project Manager: James Clarke
Drilling	j S	star	t Da	ite:	04-02-2019)		Drilling Contractor: Cascade Drilling LP
Drilling	j C	on	nple	tion Date:	04-05-2019)		Drilling Method: Sonic
Total D)ep	oth	(ft l	ogs):	282			Drilling Equipment:
Depth t	to	Wa	ter	(ft bgs):	41.60			Sampling Method:
Depth Below Ground Surface (feet)		Graphical		Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System	Soil Classification, Description and Notes
0 -							ML	SILT, 90% fines, 5% medium to coarse grained, subrounded to subangular gravel, 5% medium to coarse grained, subrounded sand, nonplastic,
								reddish-brown, slightly moist, loose, no odor, no stains
								note: strong reaction to HCI
5								note: decrease in fines & increase in gravel & sand
								-
10							ML	SILT WITH SAND, 80% fines, 20% medium grained, subrounded to subangular sand, 5% medium to coarse grained, subrounded to subangular gravel, low plasticity, brown, slightly moist, loose, no odor, no stains
								note: HCl reaction & caliche present
15								note: decrease in fines & increase in sand & gravel
								-
								-
20								-
								-
								4
F		$\parallel \mid$					N AL	
							IVIL	
25								



Proiect Name:	(ECP) 40th Street & Osborn Road WQARF	
		-

Boring ID: BMW-02E

Project	Nur	nbe	r: 14-2018-20	39.03	Da	ate:	-02-2019 Page 2 of 12
Boring	Loc	atio	n: B	MW-02E			Logged By: Issac Torres
Elevati	on a	Ind [Datum: 1	199.63' (N	AVD88)		Project Manager: James Clarke
Drilling	y Sta	rt Da	ate: 04	4-02-2019)		Drilling Contractor: Cascade Drilling LP
Drilling		mple	tion Date: 04	4-05-2019)		Drilling Method: Sonic
Total D)epth	1 (ft	ogs): 28	32			Drilling Equipment:
Depth	to vv	ater	(π bgs): 4 ²	1.60	I		
Depth Below Ground Surface (feet)	Graphical	Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System	Soil Classification, Description and Notes
25		ШТ				MI	SANDY SILT 60% fines 25% fine to coarse grained subrounded to
						WIL	SANDY SIL1, 60% lines, 25% line to coarse grained, subrounded to subangular sand, 10% fine to coarse grained, subrounded to subangular gravel, nonplastic, brown to dark brown, slightly moist, loose, no odor, no stains
							note: sand increases & fines decrease at 25'
30							
							-
							-
							-
35							-
							note: moisture increases at 37'
							note: increase in fines & moisture
40							note: weak to strong HCl reaction
⊻							
							-
							-
45							-
							-
							4
							-
							4
50							I



Project	Namo	(ECP) 40th	Street &	Osborn F	Road WQ	ARF		
Појесс	Name.	/					Boring ID:	BMW-02E
Project	Numbo	r 14-2018-20	39.03	D	ato: 04-	-02-2019	5	Page 3 of 12
Boring	Locatio	n: B				Logged By:	lesso Torres	
Elevati	on and I	Datum: 1	199 63' (N			Project Manager:	James Clarke	
Drilling	Start D	ate: 04	4-02-2019	<u>)</u>		Drilling Contractor:	Cascade Drilling LP	
Drilling	Comple	etion Date: 04	4-05-2019)		Drilling Method:	Sonic	
Total D	epth (ft	bgs): 23	82			Drilling Equipment:		
Depth	to Water	(ft bgs): 4	1.60			Sampling Method:		
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Description	n and Notes
50					ML	SANDY SILT, cor	tinued	
						note: increase in f to 15%	ine to coarse grained, subrou	nded to subangular gravel
55						note: decrease in	fines	
60						-		
65					CL	CLAY WITH GRA	VEL. 90% fines 5% fine to co	parse grained, subrounded
	1/////							si se granica, cabicanaca

CLAY WITH GRAVEL, 90% fines, 5% fine to coarse grained, subrounded to subangular gravel, 5% fine to coarse grained, subrounded to subangular sand, high plasticity, reddish-brown, moist to wet, no odor, no stains

note: increase in fines



75

70

Project	Na	amo	ə:	(ECP) 40	th Street &	Osborn F	Road WQ	ARF	Paring ID:	BMW-02F
			_						bonng iD	Page 4 of 12
Project	Νι	JM	ber: _	Date:				02-2019		
Boring	Lc	oca	tion:		BMW-02E			Logged By:	Issac Torres	
Drilling		an tart	Date	e: 04-02-2019				Drilling Contractor:	Cascade Drilling I P	
Drilling		om	pletio	n Date:	04-05-2019	<u> </u>	Drilling Method:		Sonic	
Total D	,)ep	th (ft bgs):	282			Drilling Equipment:		
Depth t	to۱	Wa	ter (ft	bgs):	41.60			Sampling Method:		
Depth Below Ground Surface (feet)	loo idaan O	Log Log	,	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descriptio	n and Notes
75							ML	GRAVELLY SILT V	WITH SAND. 50% fines. 35%	% fine to coarse grained.
80								GRAVELLY SILT V subrounded to sub subangular sand, l no stains	angular gravel, 15% fine to o ow to medium plasticity, red	⁶ Tine to coarse grained, subrounded to dish-brown, wet, soft, no odor,
90							ML	SILT WITH SAND, subangular sand, gravel, nonplastic t	75% fines, 15% fine to coa 10% fine to coarse grained, s to low plasticity, reddish-brow	rse grained, subrounded to subrounded to subangular wn, moist to wet, very stiff
			-		_			note: moderate HC	Cl reaction	
								1		
]		
								-		
								-		
								-		
								-		
								-		
95								-		
								1		
]		
								{		
								{		
			−					note: increase in fi	ne grained, subrounded to s	ubangular gravel
100		111				1	I	1		



Project	Na	me	:	(ECP) 40t	h Street &	Osborn F	Road WQ	ARF	Boring ID:	BMW-02E			
Project	Nu	mt	ber:	14-2018-2	2039.03	D	ate: ⁰⁴⁻	-02-2019		Page 5 of 12			
Boring Elevati Drilling Drilling Total D Depth 1	Lo on J St J Co J Co Jept	cat and art omp th (Vat	ion: d Date Date oletio ft bgs er (ft	um: : n Date: s): bgs):	BMW-02E 1199.63' (N 04-02-2019 04-05-2019 282 41.60	VAVD88)))		Logged By: Project Manager: Drilling Contractor: Drilling Method: Drilling Equipment: Sampling Method:	Issac Torres James Clarke r: Cascade Drilling LP Sonic tt:				
Depth Below Ground Surface (feet)	Granhical	Log		Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descripti	ion and Notes			
100 -							ML	SILT WITH SAND,	continued	5% coarse to fine grained,			
105								subrounded to sub subangular sand, l no stains note: increase in fi	oangular gravel, 20% fine to ow to medium plasticity, re- nes & moderate HCI reaction	o coarse grained, subrounded to ddish-brown, wet, soft, no odor, on			
110													
115								note: increase in fi	nes				
120							ML	SANDY SILT WITH subrounded to sub subangular sand, l stiff, no odor, no st	I GRAVEL , 55% fines, 30% bangular gravel, 15% fine to ow to high plasticity, reddis bains	% fine to coarse grained, o coarse grained, subrounded to h-brown, wet, soft to medium			
								note: increase in fi	nes & decrease in gravel				
125								-					



Project Name:	(ECP) 40th Street & Osborn Road WQARF

Project	name:		onoora	00000000			Boring ID:	BMW-02E			
Project	Numbe	r: 14-2018-20	39.03	Da	ate:	02-2019	5	Page 6 of 12			
Boring	Locatio	n: B	MW-02E			Logged By:	Issac Torres				
Elevati	ion and I	Datum: 1	199.63' (N	AVD88)		Project Manager:	t Manager: James Clarke				
Drilling	g Start D	ate: 04	4-02-2019	9		Drilling Contractor:	Cascade Drilling LP				
Drilling	g Comple	etion Date: 0-	4-05-2019	9	Drilling Method:		Sonic				
Total D	Depth (ft	bgs): 2	82			Drilling Equipment:					
Depth	to Water	(ft bgs): 4	1.60			Sampling Method:					
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System	s	Soil Classification, Descri	otion and Notes			
125					ML	SILT WITH GRAVE	L, continued				
						note: slight to mode	rate HCI reaction				
130					GM	SILTY GRAVEL WI subrounded to suba subangular sand, no medium dense, no o note: low HCI reacti note: increase in pla	TH SAND, 30% fines, 30 angular gravel, 25% fine onplastic to low plasticity odor, no stains on asticity & fines	0% finw to coarse grained, to coarse grained, subrounded to , reddish-brown, moist to wet,			
					ML	GRAVELLY SILT, subangular gravel, sand, low plasticity, stains note: moderate HCI	reaction	oarse grained, subrounded to ed, subrounded to subangular ery firm to dense, no odor, no			
135					MI	SII T WITH SAND	85% fines 10% fine to c	coarse grained subrounded to			
140						subangular sand, 5 low to high plasticity stains note: moderate HCI	% fine to coarse grained , reddish-brown, moist, reaction	, subrounded to subangular gravel, dense to very dense, no odor, no			
145											
150											



Project	Name:	(ECP) 40t	h Street &	Osborn F	Road WQ/	ARF	Paring ID:	BMW-02E
Proiect	Numb	er: 14-2018-2	2039.03	Di	ate: 04-	02-2019		Page 7 of 12
Boring	Loosti			D		Loggod By:	lesse Torros	
Elovati	ion and	Datum [.]	1100 63' /N			Project Manager	lames Clarke	
Drilling	1 Start Γ	Datum. Date:	04-02-2010	<u>(AVD00)</u>		Drilling Contractor	Cascade Drilling I P	
Drilling	Comp	etion Date	04-02-2010	,)		Drilling Method:	Sonic	
Total D)epth (ft	bas):	282			Drilling Fauipment		
Depth	to Wate	r (ft bgs):	41.60			Sampling Method:		
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descripti	on and Notes
150					ML	SILT WITH SAND,	continued	
						note: increase in g	ravel & sand	
						note: high plasticit	y	
	Ш				MH	GRAVELLY SILT I subrounded to sub	WITH SAND, 40% fines, 35 bangular gravel, 25% fine to	% fine to coarse grained, coarse grained, subrounded to
155						subangular sand, l 155'6" to 156'6").	ow plasticity, reddish-browr medium dense, no odor, no	n, wet (saturation increase from stains
					CL	SANDY CLAY, 70	% fines, 20% fine to coarse	grained, subrounded to
						sand, medium to h	igh plasticity, brown, moist	to wet, hard, no odor, no stains
160								
165								
						note: increase in a	ravel & sand	
						note. morease in g		
170								
170								
	<u> </u>				N/I		6 fines 15% fine to coores	grained subrounded to
						subangular sand,	10% fine to coarse grained,	subrounded to subangular
						gravel, high plastic	city, dark reddish-brown, we	t, soft, no odor, no stains
						note: no HCI react	ion	
175		1				1		

wood.

Project	Name:	(ECP) 40th	Street &	Osborn F	Road WQ/	ARF		
Droigot	Numbe	<u> </u>	130 03		oto: 04-	02-2019	Boring ID:	Page 8 of 12
	90muri	F:		D	ate:4-			
Boring	Locatio	n: E Datum: 1	3MW-02E			Logged By: Project Manager:	Issac Torres	
Drilling	Start D	ate:	4-02-2019	<u>140000)</u> 1		Drilling Contractor	Cascade Drilling I P	
Drilling		etion Date: 0	4-05-2019	2 A		Drilling Method:	Sonic	
Total D	epth (ft	bgs): 2	282	-		Drilling Equipment:		
Depth	to Water	(ft bgs): 4	1.60			Sampling Method:		
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descripti	on and Notes
175						SANDY SILT, con	tinued	
						note: increase in p	lasticity	
						note: gravel lenses quartzite)	s with some sand & larger g	ravel (70mm) present (gneiss &
100								
180								
185								
	1////				CL	CLAY WITH GRAV	/EL, 65% fines, 20% fine to	o coarse grained, subrounded
						to subangular sand	d, 15% fine to coarse graine	ed, subrounded to subangular
	<i>\\\\\</i>					gravel, low plastici	ty, reddish-brown, moist, mo	edium hard to hard, no odor, no
	/////.					Sidilis		
	/////					note: slight HCI rea	action	
190	<i>`\ </i> ,					, ŭ		
	`/////							
	<i>'/////.</i>							
	'/////.							
	<i>`\ </i>							
	`/////					1		
	<i>'/////</i>							
	<i>'/////</i>							
105								
195	<i>`/////</i>							
	'/////.							
	'/////.							
	<i>' </i> ,							
	<u> </u>							/ f
					ML	SANDY SILT WITH	H GRAVEL, 45% fines, 40%	6 Tine to coarse grained,
						subandular dravel	nonplastic to low plasticity	reddish-brown to brown moist
						to wet, soft to very	stiff, no odor, no stains	,
						note: no HCI react	ion, clay lenses (high plasti	city)
200		1						_



Project	Name:	(ECP) 40th	Street &	Osborn I	Road WQ	ARF	Daring ID:	BMW-02F
Ducient	Number		30.03		ete : 04	02-2010	Boring ID:	Page 9 of 12
Project	Numbe	r: 14-2010-20		U	ate:		lesse Torres	
Elevati	on and l	Datum: 1	199.63' (1)	Project Manager:	James Clarke	
Drilling	start D	ate: 0	4-02-2019	9		Drilling Contractor:	Cascade Drilling LP	
Drilling	g Comple	etion Date: 0	4-05-2019	9		Drilling Method:	Sonic	
Total D	epth (ft	bgs): <u>2</u>	82			Drilling Equipment:		
Depth	to water		1.60			Sampling Method:		
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	tion and Notes
200					ML	SANDY SILT WITH	HGRAVEL, continued	
						noto: raro ochbiog	(15cm; quartzita ? anhan	atia ignocula rock)
						note. rare coubles	(Toom, quanzite & aphano	elic igneous rock)
						_		
						_		
205						noto: incroaso in c	ravele	
						increase in g	laveis	
						note: lenses of silt	y gravel with sand	
						_		
210								
210								
						-		
215								
[<i>' </i> ,				CL	SANDY CLAY WIT	H GRAVEL, 60% fines, 2	5% fine to coarse grained,
	`/////.					subrounded to sub subandular dravel	, high plasticity, 15% tine to	eddish-brown, moist to wet, stiff
						no odor, no stains		, , ,
						noto: modorato Ц(Iroaction	
220								
	<i>'////</i> .							
	/////							
	·/////					1		
	'/////					1		
	<i>`\\\\\</i>							
	<u> ////////////////////////////////////</u>							
					SM	SILIY SAND WITH	1 GRAVEL	
						-		
225			1	I		1		

W	Ό	0	d.

Project	Name:	(ECP) 40th	Street &	Osborn I	Road WQ/	ARF	Boring ID:	BMW-02E
Project	Numbe	r: <u>14-2018-20</u>	39.03	D	ate:04-	02-2019		Page 10 of 12
Boring	J Locatio	n: B	MW-02E			Logged By:	Issac Torres	
Elevat	ion and D	Datum: 1	199.63' (N	AVD88)		Project Manager:	James Clarke	
Drilling	g Start Da	ate: 04	4-02-2019	9		Drilling Contractor:	Cascade Drilling LP	
Drilling	g Comple	tion Date: 04	4-05-2019	9		Drilling Method:	Sonic	
Total I	Depth (ft l	b gs): 28	82			Drilling Equipment:		
Depth to Water (ft bgs): 41.60				_	Sampling Method:			
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Description	on and Notes
225					SM	SILTY SAND WIT subangular sand,	H GRAVEL, 55% fine to coars	rse grained, subrounded to se grained, subrounded to

Ground Su (feet)	Graphical Log	Sample ID	Blow Cour	PID Meter Reading (p	Unified Soi Classificati System	Soil Classification, Description and Notes
225					SM	SILTY SAND WITH GRAVEL, 55% fine to coarse grained, subrounded to subangular sand, 25% fines, 20% fine to coarse grained, subrounded to subangular gravel, nonplastic, brown to reddish-brown, moist to wet, loose to medium denses, no odor, no stains note: moderate HCI reaction note: increase in fines & plasticity
230						
235						
						SANDY CLAY WITH GRAVEL, 60% fines, 25% fine to coarse grained, subrounded to subangular sand, 15% fine to coarse grained, subrounded to subangular gravel, medium to high plasticity, reddish-brown, moist to wet, stiff to very stiff, no odors, no stains note: high HCl reaction
240						note: gravel lense (predominantly subangular) at 238'
245					GC	CLAYEY GRAVEL WITH SAND, 40% fine to coarse grained, subangular to subrounded gravel, 30% fine to coarse grained, subangular to subrounded sand, low plasticity, brown to reddish-brown, wet, loose to medium dense, no odors, no stains note: no HCI reaction
250					ML	SANDY SILT WITH GRAVEL

wood.

Proiect Name:	(ECP) 40th Street & Osborn Road WQARF
- -	

Boring ID: BMW-02E

)	ľ	V	1	V	۷	-	U	Z	E		

Project	Nur	nbe	r: 14-2018-20	39.03	Da	ate:	02-2019	Page 11 of 12				
Boring Location:			n: B	MW-02E			Logged By:	Issac Torres				
Elevati	on a	nd E	Datum: 1	199.63' (N	AVD88)		Project Manager:	James Clarke				
Drilling Start Date: 0				4-02-2019)		Drilling Contractor:	Cascade Drilling LP				
Drilling		mple	tion Date: 04	4-05-2019	5-2019 Drilling Method:		Drilling Method:	Sonic				
Total D	epth	n (ft l	ogs): 28	82			Drilling Equipment:					
Depth t		ater	(π bgs): 4 ⁻	1.60			Sampling Method:					
Depth Below Ground Surface (feet)	Graphical Log Blow Counts PID Meter P2D Meter				PID Meter Reading (ppm)	Unified Soil Classification System	S	coil Classification, Description and Notes				
250 -						ML	SANDY SILT WITH	GRAVEL, 55% fines, 25% fine to coarse grained,				
							subrounded to suba	ingular sand, 20% fine to coarse grained, subrounded to				
							subangular gravel, l	ow to high plasticity, reddish-brown, moist to wet, soft to				
							hard, no odor, no st	ains				
							note: no to low HCL	reation lenses of silty sand with gravel				
255												
							note: lenses clavev	aravel				
							note. lenses dayey	graver				
260												
265												
							note: cemented clas	sts of breccia, high HCl reation				
								-				
							note: quartzite clast	S				
270												
							noto: moleture in	and maint at 274				
							note. moisture incre	ases, moist at 214				
							note: lenses of sand	Istone (also large clasts of quartzite				
075												
275				•								
								WOOD				

Proiect Name:	(ECP) 40th Street & Osborn Road WQARF
· · · , · · · · · · · · · · · · · · · · · · ·	

Boring ID: BMW-02E

5	Ν	/	V	V	-	U	2	E	

Project	Numbe	r: 14-2018-20	39.03	Da	ate: _ 04-	-02-2019 Page 12 of 12
Boring	Locatio	n: B	MW-02E			Logged By: Issac Torres
Elevati	ion and D	Datum: 1	199.63' (N	AVD88)		Project Manager: James Clarke
Drilling	Start Da	ate: 0	4-02-2019)		Drilling Contractor: Cascade Drilling LP
Drilling	g Comple	etion Date: 0	4-05-2019	J		Drilling Method: Sonic
Total L	eptn (π i	0gs): <u>2</u> (ft.bac): 4	82			Drilling Equipment:
Depth	to water	(it bgs). 4	1.60			
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System	Soil Classification, Description and Notes
275					ML	SANDY SILT WIITH GRAVEL, continued
						note: highly cemented at 276'
						note: core collected hydropunch broke off & driller was not able to retrive the tool or continue drilling
						-
280						-
						Total depth = 282'
005						-
285						
						-
						-
290						-
						-
						1
295						
						-
						1
200						-
300						
						WOOD



Date: 16-May-19-09.22

PROJECT LOCATIO PROJECT	f: N: F NUMI	BER:	40th St & Osborn WQARF Site Whitton Street & 42nd Street 180T 20421 08	WE		SECOR					
DRILLING INSTALLA DRILLING DRILLING SAMPLIN	S: ATION: COMI EQUI METH G EQU	STA STA PANY PMEN IOD: JIPME	RTED 5/12/08 COMPLETED: 5/15/08 RTED 5/15/08 COMPLETED: 5/16/08 Geomechanics Southwest, Inc IT: CME-95 Hollow-Stem Auger RT: Split-Barrel/Continuous Core	DIVIVY-JAD PAGE 1 OF 3 DIE COR NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): 33 5/12/08 BOREHOLE DEPTH (ft): 101.0 STATIC DTW (ft): WELL DEPTH (ft): 100/60 WELL CASING DIAMETER (in): 2/2 BOREHOLE DIAMETER (in): 10 LOGGED BY: CRP/MLN CHECKED BY: C. Pollock							
Time & Depth (feet)	Graphic Log	NSCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)		Well Construction
5-		SM	Asphalt-5-inches SILTY SAND; SM; 5YR 5/4 reddish brown; fine to medium-grained; medium dense; dry; no odor; no staining Airknifed to 5 feet. Lithology described from visual observation and cuttings	X	0850	1.0	8 12 12			VIANIAN KUKUKUK VIANU KUKUKUK	 concrete neat cementgrout
10-		SM	SAND WITH SILT; SM; 5YR 6/6 light reddish brown; fine to medium-grained; dense; dry; no odor; no staining	X	0900	1,1	7 23 24		- 10- -		2-inch Sch. 80 PVC blank casing
15-		SC	CLAYEY SAND; SC; 5YR 6/4 light reddish brown; fine to medium-grained; dense; dry; no odor; no staining; Approx. 35% clay, 60% sand, 5% fine gravel	X	0910	1.2	8 20 17		- 15- -		 1/4-inch uncoated bentonite pellets
			5YR 5/4 reddish brown; dense; dry; no odor; no staining; few fine subangular gravel Approx. 40% clay, 55% sand, 5% fine gravel	X	0920	1.1	12 15 16		- 20-		
		CL	SANDY CLAY ; CL; 5YR 5/4 reddish brown; hard; dry; no odor; no staining; Approx. 65% clay, 35% very fine to fine sand Moist		1010	3.5	NR		- 25- -		
30-		SC	5YR 6/4 light reddish brown; gradational contact CLAYEY SAND ; SC; 5YR 5/4 reddish brown; medium dense; moist; Approx. 65% sand, 30% clay, 5% gravel		1040	4.0	NR		- 30- -		2-inch Sch. 80 PVC 0.020-inch slotted casing
35-		SW CL SP	SAND; SW; 5YR 4/4 reddish brown; fine to coarse-grained; medium dense; wet; well graded; Trace clay SANDY CLAY; CL; 5YR 5/4 reddish brown; hard; moist; no odor; no staining; Approx. 65% clay, 35% very fine to fine sand Wet; Approx. 55% clay, 40% sand, 5% fine gravel; from 36 ft SAND; SP; 5YR4/4 reddish brown; fine to coarse grained; modium dence unit, neach		1055	5.0	NR		⊻ - 35− - - -		

) FORM 304 BMW43AB.GPJ SECOR INTL.GDT 6/18/08

PROJECT LOCATIO PROJECT	Г: N: Г NUM	BER:	40th St & Osborn WQARF Site Whitton Street & 42nd Street 18OT.20421.08	WELL / PROBEHOLE / BOREHOLE NO: BMW-3AB PAGE 2 OF 3 SECO								
DRILLING INSTALLA DRILLING DRILLING SAMPLIN	S: ATION: COM EQUI METH G EQU	STA STA PANY PMEN HOD: JIPME	RTED 5/12/08 COMPLETED: 5/15/08 RTED 5/15/08 COMPLETED: 5/16/08 : Geomechanics Southwest, Inc NT: CME-95 Hollow-Stem Auger :NT: Split-Barrel/Continuous Core	NORTHING (ft): EASTING (ft): LATITUDE: LONGITUDE: GROUND ELEV (ft): TOC ELEV (ft): INITIAL DTW (ft): 33 5/12/08 BOREHOLE DEPTH (ft): 101.0 STATIC DTW (ft): WELL DEPTH (ft): 100/60 WELL CASING DIAMETER (in): 2/2 BOREHOLE DIAMETER (in): 10 LOGGED BY: CRP/MLN CHECKED BY: C. Pollock								
Time & Depth (feet)	Graphic Log	uscs	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)		Well Construction	
		SP CL	graded; Approx. 10% fine gravel CLAY WITH SAND ; CL; 5YR 6/4 light reddish brown; fine to medium-grained; very stiff; moist; Approx. 50% clay, 40% sand, 10% fine gravel		1130	5.0	NR		and the second			
45-		SC	CLAYEY SAND; SC; 5YR 5/4 reddish brown; fine to medium-grained; medium dense; wet; Trace fine gravel SANDY CLAY; CL; 5YR 6/4 light reddish brown; fine to medium-grained; very stiff; wet; Approx. 5% fine gravel		1155	5.0	NR		45- - -		2-inch Sch. 80 PVC 0.020-inch slotted casing	
50-		SC	CLAYEY SAND; SC; 5YR 5/4 reddish brown; fine to medium-grained; medium dense; moist; Trace fine gravel		1330 1330 3MW3-GW1-5	49 3.0 2	8 16 19 27, 34,		50-		 8-12 silica sand 	
55-		CL SW	CLAY WITH SAND; CL; 5YR 5/4 reddish brown; fine to medium-grained; hard; moist; Approx. 70% clay, 25% sand, 5% gravel SAND; SW; 5YR 5/4 reddish brown; fine to coarse-grained; medium dense; wet; well graded; Approx. 85% sand, 15% fine to coarse gravel		1400	2.0	NR		- 55- -		—2-inch Sch. 80 PVC blank casing	
60-		CL	SANDY CLAY; CL; 5YR 6/4 light reddish brown; fine to medium-grained; stiff; moist GRAVEL; GW; 5YR 5/4 reddish brown; fine		No Sample	3.0	12 14 19 23, 21,		- 60- -		- 1// in ab	
65-		SP	to coarse-grained; very dense; wet; Approx. 35% medium to very coarse sand SAND; SP; 5YR 5/4 reddish brown; fine to coarse-grained; very dense; wet; poorly graded	X	1540 1615	2.0	38 NR 12 18 24 24 24 29		- 65- -		TR30 coated bentonite pellets	
80/81/9		CL	CLAY; CL; 5YR 5/4 reddish brown; hard; moist; Approx. 10% fine sand		1630 	2.0	33 NR					
	• • • • • • • • • •	SW	CL/SW - sluff from hydropunch, mix 40% SW, 60% clay SAND; SW; 5YR 5/4 reddish brown; fine to coarse-grained: dense: well graded:		0815 MW3-GW3-7	3.0 2	10 16 21 27, 25, 34		-		←8-12 silica sand	
35 rd 578 75		CL	SANDY CLAY; CL; 5YR 5/4 reddish brown; fine-grained; hard; moist; Approx. 70% clay, 30% sand	X	0950	2.0 2.0	8 12 18 34 6 21 24		- 75- -		— 2-inch Sch. 80 PVC 0.020-inch slotted casing	
GEO FORM		SP	SAND; SP; 5YR 5/4 reddish brown; medium	X	1010	2.0	10				sasing	



SECOR INTL BMW43AB.GPJ 304

FORM





0						Asphalt			Flush mounted
5				Ν	ИL	SILT - Yellowish red (5YR5/6); 90% nonplastic fines; 10% fine to coarse subrounded sand; trace fine subrounded gravel to ¾". Dry, soft, strong reaction to HCL. Borehole air knifed to 7 feet, reported refusal in caliche.			vault 8.625 inch diameter borehole. (0.0 - 70.0 feet bls)
10 —	4.0/ 82.7								PVC Blank (0.58
_	_ 2.6/ _ 93.0								- 30.0 feet bls)
_				ML	_/CL	CLAYEY SILT - Dark reddish brown (10YR3/4); 90% low plastic fines; 10% fine to coarse			
15 —	113.0	44	14			subrounded sand. No reaction to HCI, contains clay stringers.			
_	2.1/ 95.0					SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine to coarse, subrounded to rounded sand; trace rounded gravel to ½".			Cement Grout (1.0 - 23.5 feet bls)
	6.0/ 92.1					Strong reaction to HCl, dry. At 23'; caliche stringers.			
_	_ 18.8/ 106.3			N	ЛL				
_	26.6/ 92.1								
25 —	10.3/ 99.1								Bentonite Seal
	_ 7.0/ 132.8					SILT WITH GRAVEL - Dark reddish brown (5YR3/4); 75% low plastic fines; 15% fine to coarse angular to subrounded gravel to 1½"; 10% fine to coarse subrounded sand.		 	bls)
30 —	10.0/ 143.7					At 34'; moist. At 37'; wet.		•••	



HARGIS+ASSOCIATES, INC.

TEMP = Temperature Degrees Fahrenheit PID = Photoionization detector bmp = below measuring point

Litholo	Lithologic and well construction log: BMW-04A											
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF) Log Lithologic		nscs	Lithologic Description	Well Construction	Comments						
	_ 10.4/		ML									
 35	129.3 _ 24.1/ 126.1											
	_ 0.9/ 105.2											
40	_ 2.0/ 98.0			(5YR4/4); 70% nonplastic fines; 15% fine to coarse sand; 15% fine gravel to ½". Caliche stringers 40 to 42', wet.		# 10-20 Sand ⁻ (27.0- 71.1 feet						
-	_ 1.6/ 99.8		ML			bls)						
45 — 	_ 3.7/ 87.6					4" ID Schedule 40 PVC 0.020 inch Screen (30.0 -						
	_ 42.0/ 95.1 31.1/			SILTY SAND WITH GRAVEL - Reddish brown		70.0 feet bls)						
50 — —	85.2 _ 19.2/		SM	(5YR4/4); 45% fine to coarse subangular to subrounded sand 40% nonplastic fines; 15% fine subangular to subrounded gravel to %". Wet.								
 55 —	83.4 _ 21.7/ 84.2		ML	SILT - Reddish brown (2.5R4/4); 90% nonplastic fines; 10% fine, to medium sand; trace fine subrounded gravel. Weak reaction to HCI.								
	_ 62.2/ 106.8			SILT WITH SAND - Reddish brown (5YR4/4); 75% nonplastic fines; 25% medium to coarse angular to subrounded sand. Moderate to strong reaction to HCI, dry, hard								
 60	_ 69.9/ 103.2		ML	Caliche stringers 56 to 57'.								
-	_ 25.5/ 104.7											
65 — _	_ 43.3/ 100.7			SILT - Yellowish red (5YR4/6); 90% nonplastic		Flush threaded						
	81.6 13.2/ 96.6		ML	fines; 10% fine to medium subrounded sand. Slight to moderate reaction to HCI.		6 inch diameter borehole (70.0 -						
70 —	5.7/ 88.8					Total depth = 71.1 feet bls						








TEMP = Temperature Degrees Fahrenheit PID = Photoionization detector bmp = below measuring point Page 1 of 4

Lithologic and well construction log: BMW-04B									
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	nscs	Lithologic Description	Well Construction	Comments			
-			I						
	_ 7.0/ 132.8			SILT WITH GRAVEL - Dark reddish brown (5YR3/4); 75% low plastic fines; 15% fine to coarse angular to subrounded gravel to 1½"; 10% fine to coarse subrounded sand.					
30 — 	_ 10.0/ 143.7			Moderate reaction to HCI, firm, abundant biotite. At 34'; moist. At 37'; wet.					
	_ 10.4/ 129.3		ML						
35 — 	_ 24.1/ 126.1								
	_ 0.9/ 105.2								
40	_ 2.0/ 98.0			(5YR4/4); 70% nonplastic fines; 15% fine to coarse sand; 15% fine gravel to ½". Caliche stringers 40 to 42', wet.					
-	_ 1.6/ 99.8		ML						
45 —	_ 3.7/ 87.6								
-	_ 42.0/ 95.1								
50 — 	_ 31.1/ 85.2		SM	SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 45% fine to coarse subangular to subrounded sand 40% nonplastic fines; 15% fine subangular to subrounded gravel to ¾". Wet.					
-	_ 19.2/ 83.4			SILT - Reddish brown (2.5R4/4); 90% nonplastic					
 55	_ 21.7/ 84.2		ML	fines; 10% fine, to medium sand; trace fine subrounded gravel. Moist, weak reaction to HCI.					
_	_ 62.2/ 106.8			SILT WITH SAND - Reddish brown (5YR4/4); 75% nonplastic fines; 25% medium to coarse angular to subrounded sand. Moderate to strong reaction to HCl, dry, hard Caliche stringers 56 to 57'.					
60 —	_ 69.9/ 103.2								



Lithologic and well construction log: BMW-04B										
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)		Log Lithologio	ыплонодис	NSCS	Lithologic Description	C	Well onstructi	on	Comments
					I		_			
_					ML					
	_ 25.5/ 104.7									
_										
65 —	_ 43.3/ 100.7									
_	16.3/					SILT - Yellowish red (5YR4/6); 90% nonplastic				
_	81.6					Slight to moderate reaction to HCI.				
_	_ 13.2/ 96.6				ML					
70 —										
	_ 5.7/									
	0010					SILT WITH SAND - Reddish brown (5YR4/4); 75%		-		
_	7.0/					subrounded to rounded sand; trace fine rounded aravel				Bentonite Seal (71.6 - 75.4 feet
75 —	96.4				ML	Weak to moderate reaction to HCl. Silty sand stringer from 74 to 75'.) bls)
_										
	_ 37.3/								•••	
_	10110					SILT Vollowish red (SVP4/6): 90% popplastic				
80 —	_ 31.2/					fines; 10% fine to medium subrounded sand. Moist, slight to moderate reaction to HCI.				
_	91.0				ML					
_	_ 6.5/								••••	
_	88.8									
	2.6/									
- 00	91.7				ML	SANDY SILT - Reddish brown (5YR4/4); 70% non to low plastic fines; 30% fine to coarse subangular				
_	35.3/	Щ	Щ			to subrounded sand; trace angular gravel to 1/2". Wet, weak reaction to HCI.			•••	
_	93.2				SM	SILTY SAND - reddish brown (7.5YR4/6); 65% fine				
_	45 5/	Ť	ΪÌ			nonplastic fines; trace subrounded gravel to 1½". No reaction to HCI, wet.				
90 —	98.9					\				# 10-20 Sand - (75 4- 121 7 feet
_	24.04					SILT WITH SAND - Reddish brown (5YR4/4); 75%				bls)
_	34.0/ 103.8				ML	non to low plastic tines; 25% fine to coarse subrounded to rounded sand; trace fine rounded				
_	10 E/					Moist, weak to moderate reaction to HCI.				
95 —	- 95.1									



Lithol	ogic and	d well o	construc	ction log: BMW-04B		
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic USCS		Lithologic Description		Comments
-	33.7/ 89.7		SM	SILTY SAND - reddish brown (7.5YR4/6); 65% fine to coarse, subrounded to rounded sand; 35% nonplastic fines; trace subrounded gravel to 1½". No reaction to HCl, wet.		
	28.7/ 86.1 33.7/ 93.3			SILT WITH SAND - Reddish brown (5YR4/4); 75% non to low plastic fines; 25% fine to coarse subrounded to rounded sand; trace fine rounded gravel. Moist, no reaction to HCI. At 100.5 to 102'; higher sand content, 5% fine subangular gravel, moderate reaction to HCI. At 103'; Contains siltstone clasts to 2½".		
 105 	50.4/		ML	At 113'; Wet.		4" ID Schedule 40 - PVC 0.020 inch Screen (78.8 -
 110	44.8/ 111.2 62.5/ 131.3					118.8 feet bis)
	_ 59.9/ _ 130.4					
115 —	_ 39.5/ 123.2		ML	SILT- Reddish brown (5YR4/4); 95% low plastic fines; 5% fine subrounded to rounded gravel; trace fine sand.		
	_ 13.0/ _ 98.2		ML	Moderate reaction to HCl, dry, visible clay stringers. SANDY SILT - Reddish brown (5YR4/4); 70% non to low plastic fines; 25% coarse subangular to subrounded to rounded sand; 5% fine subrounded gravel to 5/8"		Flush threaded end cap
 120	12.0/ 91.4			No reaction to HCl, contains clasts of well cemented silt to 2 1/2".		6 inch diameter borehole (120 - 121.7 feet bls)
_						Total depth = 121.7 feet bls





0		 			
_				Asphalt	Flush mounted
 5			ML	SILT - Reddish brown to yellowish red (5YR5/4 to 5YR4/6); 90% nonplastic fines; 10% fine sand. Dry, soft, strong reaction to HCL, formation harder at 6.5'. Borehole air knifed to 8 feet. At 9'; color change, caliche horizon.	vault 8.625 inch diameter borehole. (0.0 - 70.0 feet bls)
	_ 3.5/				4" ID Schedule 40 PVC Blank (0 50
_	86.1			SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine sand; trace coarse gravel to 3"	- 29.6 feet bls)
_	_ 2.2/ 85.1			Dry, soft to firm At 16'; formation shows bedding, slightly more plastic.	
 15	_ 0.5/ 87.9		ML		Coment (1.0
_	_ 0.7/ 88.3				23.0 feet bls)
20 —	_ 18.8/ 167.7			CLAYEY SILT - Reddish brown (5YR5/4 to 5YR4/4); 90% non to low plastic fines; 10% fine to medium, trace coarse sand.	
_	_ 5.5/ 102.2		ML/CL	Son, strong reaction to HCI, dry.	
	_ 2.7/				Bentonite Seal - (23.0 - 26.0 feet
	85.1 8.2/ - 104.9			SILT WITH SAND - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to medium sand. Strong reaction to HCI, soft, moist.	DIS)











East (East Central Phoenix, AZ									
Lithold	ogic and	d well c	onstruc	ction log:BMW-07B		LS F	W-05A 📀			
Northin Easting LS Ele Ref. Pr Ref. Pr Total D Depth Date 12	ng (ft) 90 g (ft) 67 v. (ft) 11 nt. Top o nt. Elev. (Depth bm to Water 2/27/13 -	04650.67 5136.29 87.77 of casing (ft) 1187 op (ft) 11 (ft) 37.0 12/29/13	, 7.29 4.9) 3	Drill Method RotoSonic Diameter of Casing 4" Type of Casing PVC Slot Size 0.020" Filter #10-20 Sand ADWR Reg. No. 55-916199	BMW-07A BMW-07B	E OSB	BMW-06A BMW-06B O4A -04B ORN RD			
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	nscs	Lithologic Description		Well Construction	Comments			

0				
U		Asphalt SILT - Reddish brown to yellowish red (5YR5/4 to 5YR4/6); 90% nonplastic fines; 10% fine sand. Dry, soft, strong reaction to HCL, formation harder		Flush mounted vault
5	ML	at 6.5'. Borehole air knifed to 8 feet. At 9'; color change, caliche horizon.		8.625 inch diameter borehole. (0.0 - 115.0 feet bls)
10 - 3.5/				4" ID Schedule 40 PVC Blank (0.51
86.1		SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine sand; trace coarse gravel to 3".		- 85.0 feet bls)
2.2/ 85.1		Dry, soft to firm At 16'; formation shows bedding, slightly more plastic.		
15	ML			
			_	Cement (1.0 - 70.0 feet bls)
_		CLAVEV SILT Paddiah brown (EVPE/4 to	-	
20 18.8/ 167.7		5YR4/4); 90% non to low plastic fines; 10% fine to medium, trace coarse sand. Soft, strong reaction to HCl, dry.		
5.5/ 102.2	ML/CL			
25 2.7/				
		SILT WITH SAND - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to medium sand. Strong reaction to HCl, soft, moist.		



TEMP = Temperature Degrees Fahrenheit PID = Photoionization detector bmp = below measuring point





Lithologic and well construction log: BMW-07B									
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments			
_									
65 — —	_ 0.4/ 86.1								
	_ 0.4/ 100.0								
70 —	_ 1.1/ 86.7			CLAYEY SILT - Reddish brown (5YR5/4); 90% non					
_	_ 0.8/ 86.3			to low plastic fines; 10% fine to medium sand. Moist, strong reaction to HCl. At 73 to 74.5'; formation hard to very hard.					
75	_ 0.5/ 87.2		ML/CL			Bentonite Seal			
	_ 0.5/ 96.8					bls)			
 80	_ 0.7/ 96.8								
_			SM	SILTY SAND - Reddish brown (5YR4/4); 55% fine to medium sand 45% low plastic fines.					
_	_ 2.8/ 96.6			Vet. At 51'; trace angular granitic gravel to 1".					
	_ 0.5/		ML	SANDY SILT - Reddish brown (5YR4/4); 65% non to low plastic fines; 35% fine to medium sand. Hard, moist to wet.					
_	69.4			SILT - Reddish brown (5YR4/4); 95% non to low plastic fines; 5% fine sand.					
	_ 0.8/ 100.4			No reaction with HCI, wet.					
_			ML						
90 —	_ 0.9/ 94.4					# 10-20 Sand			
_				SILTY SAND - Reddish brown (5YR4/4): 60% fine		- (80.0 - 116.0 feet bls)			
_			CM	to coarse sand; 40% nonplastic fines. Soft, firm 93 to 95', wet, no reaction to HCl.					
_	1 1/		ыN						
95 —	_ 1.4/ 82.9			SILT - Reddich brown (5VD4/4): 000/ pop to low					
_	_ 5.7/ 105			plastic fines; 10% fine sand, trace fine gravel to ½' at 103.5'. Firm to hard, weak to moderate reaction to HCI, sand content increases with depth.					



Lithol	Lithologic and well construction log: BMW-07B									
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic USCS		Lithologic Description		Comments				
	2.6/ 107 107 115.1 115.1 2.3/ 97.8 3.6/ 90.5 2.4/ 91 0.8/ 85.1		ML SM	SILTY SAND - Reddish brown (5YR4/4); 55% fine to coarse sand; 45% nonplastic fines. Soft, firm 93 to 95', wet, no reaction to HCI. SILT WITH SAND - Reddish brown (5YR4/4); 85% low plastic fines; 15% fine to medium sand. Wet, no reaction to HCI.		4" ID Schedule 40 PVC 0.020 inch Screen (85.0 - 115.0 feet bls) Flush threaded end cap 6.0 inch diameter borehole. (115.0 - 116.0 feet bls) Total depth = 116				
-						feet bls				





LITHOLOGIC LOG



LITHOLOGIC LOG





wood.
Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: BMW-09C

Page 1 of 3

			FIJenix, An	2011a 05034									
PROJEC	CT:		(ECP) 40th St	reet & Osb	orn Road	WQARF	PROJECT LOCATION:		34th St and Pinchot Avenue				
LOGGE	D BY:		L. Baader				PROJECT FEATURE:		Phoenix, AZ				
DRILLE	R:						WOOD PROJECT #:		14-2019-2034				
DRILLE	R FIR	м	Cascade Drilli	na I P			ADWR REG #		55-922867				
PIGID							STATION/OFFSET						
DIC TV	DE.		Sonic										
	- <u>c</u> .	F .	Judranunah		DOD	10"							
BURING			Hydropunch		BUR		COORDINATES:		55.462222 ⁻ , -112.006944 ⁻				
ORIENT		N:	90°				COORDINATE SYS:						
HAMME	RIY						SURFACE ELEV. (FT):		1170.54 [°] ±				
HAMME	RCA	LIBRATIC	DN-ENERGY I	RANSFER	RATIO:		VERTICAL DATUM:		NAVD88				
START	DATE	:	8/28/2019	1	START	FIME:	COMPLETION DATE:		8/28/2019 COMPLETION TIME:				
ee	÷) F				- .					
. <u>E</u>	Fee	_	D.	dd)	atio	VISUAL C	LASSIFICATION	Lee					
ttior	.⊑	Jica	Tir Je	 Lig	sific: S	(Color, Moist, % by	y wt., Plasticity, Dilatancy,	i.	(Construction Details and/or Drilling Remarks)				
leva	eptl	irapl	am	lete ead	nifie	Tougriness, Dry	Strength, Consistency)	eptl	eptr				
ш		۲0	0.20	σ≥α	<u>⊃0</u>								
- 1170.5 -	0-	p 6 4				2" Asphaltic Cond	crete over	0 -	Lock Well Cap, Flush Mounted				
					SW	6" Fill		-	-XX Steel Well Vault and Concrete Pad				
		°°°°°°						-					
		*****				AND GRAVEL. 7	70% fine to coarse	-					
1105 5	Ę	••••••	-			grained sand, 15	% fines (predominantly						
- 1105.5 -	5	******				silt), 15% fine gra	iined, subangular	5-					
						gravel, loose		_					
L _								_					
		• • • • • • • • • • • • • • • • • • •						-					
- 1160.5 -	10-	••••••						10 -					
	-							-					
	-	· · · · · · ·						-					
	-	· · · · · · · ·						-					
	-							-	$+ \bigotimes \otimes$				
- 1155.5 -	15-							15 -	5 - X 4" Diameter Flush Threaded				
					ML	SANDY SILT. 70	% fines	-	- Schedule 40 Blank PVC Casing From 0 to 95'				
	-					(predominantly si	It), 30% fine to medium	-					
						grained sand		-					
4450.5			-					-					
- 1150.5 -	20]							20-					
L _								_					
								-					
								-	$+ \bigotimes \otimes$				
- 1145.5 -	25-							25 -	5-XX Cement Bentonite Grout				
					SW/		SAND lone	-	- From 1.5' to 91'				
					500		OAND IEIIS	-					
-		<u> </u>			SW	WELL GRADED	SAND WITH SAND.	-					
F		*****			+	70% fine to coars	e grained sand, 30%	-					
- 1140.5 -	30-	•••••				tines (predominal	ntiy silt), weakly s	30 -					
F 1	1	*****	-					-					
[]	1	*****						-					
[]]	*****											
-1135 5 -	35							35-					
		؞؞ٚ؞ [°] ؞											
		••••••						-					
								-	\bowtie				
								-	$+ \bigotimes \otimes$				
- 1130.5 -	40	· · · · · ·		<u> </u>				40 -					
_	DEPTH(ft bgs) HOUR DATE								(Continued Next Page)				
Ā	5	1.03	N/A	N/A									
Ţ													
Ţ													
Ţ													
	MET	нор	N/A										

wood.
Environment & Infrastructure Solutions, Inc.
Phoenix, Arizona 85034

BORING LOG I.D.: BMW-09C

Page 2 of 3

PROJEC	CT:		(ECP) 40th St	reet & Osbo	orn Road \	VQARF	PROJECT LOCATION:	34th St and Pinchot Avenue				
ADWR F	REG. #	#:	Ę	55-922867				PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical	Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	(Construc	WELL INFORMATION uction Details and/or Drilling Remarks)		
- 1130.5 -	40-	°.	••••			SW	WELL GRADED S	SAND WITH SAND,	40 -		(Continued)		
 - 1125.5 - 	- - 45- -						continued		- - - 45 - -		10" ± Diameter Borehole		
 - 1120.5 - 	50-	*** ***				ML	SILT WITH SAND (predominantly sil grained sand, moi	, 85% fines t), 15% fine to medium st to very moist	- 50 - -		4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 95'		
 - 1115.5 - 	- 55- - -								55 - - -				
 - 1110.5 - 	60-					ML	note: manganese	staining at 60'	- 60 - -		Cement Bentonite Grout From 1.5' to 91'		
 - 1105.5 - 	65-					ML	SANDY SILT, 754 (predominantly sil 20% medium to co mostly coarse gra grained, angular g	% fines t), some clay content, parse grained sand, ined sand, 5% fine ravel, moist	65 -				
 - 1100.5 - 	70-								- 70 - -				
 - 1095.5 - 	- 75- -					ML	SILT WITH SAND (predominantly sil to coarse grained	, 85% fines t), some clay, 15% fine sand, wet	- - 75 - - -				
- 1090.5 - 	80-			BMW- 09C-80					80 -				
 - 1085.5 - 	85-					ML	Sandy Silt, (S/	AA)	85 -				
- 1080.5 -	90-	 	ROL	INDWATE	2				¹ 90 -				
⊻ ⊻ ⊻	DEP1 5	51.03 HOE)	N/A	DATE N/A						(Continued Next Page)		

W	Ό	0	d .
Environment	& Infrast	tructure S	Solutions, Inc
4600 East	Washing	ton Stree	t, Suite 600
Ph	oenix, Ar	izona 85	034

BORING LOG I.D.: BMW-09C

Page 3 of 3

PROJEC	CT:			(ECP) 40	th Street & O	born Road	WQARF	PROJECT LOCATION:	34th St and Pinchot Avenue			
ADWR F	REG.	# :		55-92286	7			PROJECT FEATURE:		Phoenix, AZ		
Elevation in Feet	Depth in Feet	Graphical	Log	Sample ID.	Date (TIMe) PID Meter Reading (nom)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	(Constru	WELL INFORMATION Iction Details and/or Drilling Remarks)	
- 1080.5 -	90-					ML	SANDY SILT, (SA	AA), continued	90 ·		(Continued)	
 - 1075.5 - 	95-						note: lense well gr to coarse grained angular gravel, 5% to 92'	aded sand, 90% fine sand, 5% fine grained, 6 fines, wet from 91'6"	95 -		Hydrated Bentonite Chip Seal From 91' to 93'	
 - 1070.5 - 	100-			BMV 09C-1	V- 00	SW CL SW	WELL GRADED S 80% fine to coarse fines (predominan grained, angular g CLAY WITH SANI (predominantly cla plastricity 15% fir	AND WITH SILT, e grained sand, 15% tly silt, 5% fine ravel, wet D, 85% fines ay), low to medium e to coarse grained	100 -		10/20 Colorado Silica Sand From 93' to 135'	
 - 1065.5 - 	105-					ML	wetling and wet WELL GRADED S coarse grained sa clay), wet	SAND, 90% fine to nd, 10% fines (silt to	105			
 - 1060.5 - 	110-					ML	SILT WITH SAND (predominantly sil to coarse grained coarse grained, au wet note: small cobble	, 80% fines t), some clay, 15% fine sand, 5% fine to ngular gravel, moist to ss at 105'	110 -		 4" Diameter Flush Threaded Schedule 40 Screen (0.020") From 95' to 130' 	
 - 1055.5 - 	115-						SANDY SILT, 60 (predominantly sil grained sand, wet note: silt lens, wet	% fines t), 40% fine to coarse from 110' to 112'	115			
 - 1050.5 - 	120-						note: increase fine (predominantly sil 20% fine to coarse fine grained, angu	es 70% fines t), decrease in sand, e grained sand, 10% lar gravel, wet at 112'	120 -		 ■ 10" ± Diameter Borehole 	
 - 1045.5 - 	125-								125 ·			
 - 1040.5 - 	130-						note: decrease fin predominantly silt, coarse grained sa grained, angular g	es, 60% increase fine to nd 30%, 10% fine ravel, wet	130 -		4" Diameter Threaded PVC Bottom Cap	
 - 1035.5 - 	135-						Total Depth = 135	'	135 ·		<──── Total Depth = 135'	
	140-								140			
1030.0	_ ++U]	G	RO	JNDWA	TER				140			
∇	DEP1	TH(ft b	gs)	HOUR N/A	DATE N/A	-						
Ţ												
⊻ ▼	<u> </u>		-			-						
¥	L MET	НОГ		N/A		_						

MON DATE D	I IT Ril	OR	WEL	L: 4/2/1	BMW	-09D DATE COMPLETED: 4/2/2018	PROJECT: ECP 40th St and PROJECT NUMBER: 113	Osborn 37	
DRILLIN	IG (D B	COMPA SY: <i>M W</i>	NY:Cas iese	scade	e Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION: 3436 E. Pinc Phoenix, AZ	hot Ave,	
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG nira	55-921 BY: <i>B.</i> METH e3000	'211 Waggle OD: hyo	e Iropur	nch	TOTAL BOREHOLE DEPTH: 288 ft bls LAND SURFACE ELEV: 1168.88 SCREEN INTERVAL: 180.7 - 230.7 DEPTH TO WATER: 51.5 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surfac		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRU DIAGRAM	CTION	
0 —				ABC ML		ASPHALT AGGREGATE BASE COURSE SILT – Dark reddish brown (5YR3/4); 95% nonplastic fines; 5% fine sand. Sof moist, wesk reaction to HCI.	t,	fic Rated ult	
5 —			3.9 4.8	ML		SANDY SILT WITH GRAVEL – Dark reddish brown (5YR3/4); 60% nonplastic fines; 25% fine to coarse subrounded sand; 15% fine subangular to subrounded gravel to ¾". Soft, dry, strong reaction to HCI, visible caliche nodules in formation, color change to	8.25" B	orehole	
 10			4.6 2.2	ML		reddish brown (5YR5/4) at 6'. Borehole hand augered to 5.6'. GRAVELLY SILT WITH SAND – Light brown (7.5YR6/4); 60%nonplastic fines; 25% fine angular to subangular, trace coarse subrounded granitic gravel to 1¼"; 20% fine to coarse subangular to subrounded sand. Soft. dry. strong	4" SCH	I40PVC	
 			3.2 3.8 8.6	ML		reaction to HCI. SILT – Brown (7.5YR5/4); 90% nonplastic fines; 10% fine to medium, less coarse subrounded sand. Soft, dry, strong reaction to HCI to 15', weak reaction to 16.5', no reaction below, colo change to reddish brown (2.5YR5/4) at 16'.	or	Jasing	
 20 			8.2 10.9 2.6	SM		SILTY SAND – Reddish brown (2.5YR4/4); 60% fine to coarse subangular to subrounded granitic sand 40% nonplastic fines. Loose, dry, no reaction to HCI. SILT – Strong brown (7.5YR4/6); 90% nonplastic fines; 10% fine to medium subrounded sand. Dry, firm, moderate to strong reaction to HCI.			
						HARGIS+ASSOCIATES, INC.	Page	1 of 10	

			WEL	L: 4/2/1	BMW	1-09D	PRC PRC	DJECT: ECP 40th St and Osborn
	IG (NY:Cas	scade	Drilling	DRILLING METHOD: Sonic	LOC	ATION: 3436 E. Pinchot Ave, Phoenix AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: VEC ING nira	55-921 BY: <i>B.</i> METH e3000	211 Waggle OD: hyd	e Iropur	nch	TOTAL BOREHOLE DEPTH: 288 ft bls LAND SURFACE ELEV: 1168.88 SCREEN INTERVAL: 180.7 - 230.7 DEPTH TO WATER: 51.5 ft bls	CON PCI ft bl	MMENTS: E = tetrachloroethene s = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM
_			8.4	ML		SILT cont.		
25 —			9.5			WELL GRADED SAND WITH GRAVEL Reddish brown (2.5YR4/4); 80% fine to coarse subrounded sand; 15% fine subrounded gravel to 5/8"; 5% nonplast fines. Dry loose no reaction to HCL	ic	
			3.3	SW		gruss.		
30 —			2.1					Neat Cement
_			2.3 8.1			nonplastic fines; 5% fine to medium, trace coarse subrounded sand. Soft to locally firm, moderate reaction to HCI.		
 35			5.0	ML				8.25" Borehole
_			4.2					
_			3.8	ML		SILT WITH SAND – Strong brown (7.5YR5/6); 80% nonplastic fines; 15% fine to coarse subangular to subrounde sand; 5% fine subrounded gravel to 3/8	d ".	4" SCH40PVC Blank Casing
40 —			3.1			Soft, moist, strong reaction to HCI.		
			17.6	ML		SILT – Strong brown (7.5YR5/6); 100% nonplastic fines; trace fine sand. Hard, well lithified, moderate to locally strong reaction to HCl, dry.		
-			6.4			SILT – Strong brown (7.5YR5/6); 95% nonplastic fines; 5% fine sand. Soft, moist, strong reaction to HCI.		
45 —			1.6	ML				
				SM		HARGIS+ASSOCIATES, INC.		ᡌ ⊮ Page 2 of 10

MON DATE D	IIT RIL	OR LED : 3	WEL /19/18 -	L: 4/2/1	BMW 8	/-09D DATE COMPLETED: 4/2/2018	PROJECT: ECF PROJECT NUM	9 40th St and Osborn MBER: 1137
	IG (D B	COMPA	NY:Cas	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION: 34	136 E. Pinchot Ave, noenix, AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG nira	55-92 <i>1</i>) BY: <i>B.</i> METH e3000	211 Waggle OD: hyd	e Iropur	nch	TOTAL BOREHOLE DEPTH: 288 ft bls LAND SURFACE ELEV: 1168.88 SCREEN INTERVAL: 180.7 - 230.7 DEPTH TO WATER: 51.5 ft bls	hloroethene elow land surface	
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL C	CONSTRUCTION DIAGRAM
_			8.3	SM		SALTDYSANDcoReddish brown (5YR5/4);	
			9.6			rounded sand; 20% nonplastic fines; 5% fine subrounded to rounded gravel to ½ Soft, moist, weak reaction to HCI.	,	Blank Casing
_			8.7			SILT – Brown (7.5YR5/4); 95% nonplastic fines; 5% fine to medium sand; trace fine rounded gravel to ¼". Soft to 51', hard below. Weak reaction to		51.5 bls
	_	<0.25				HCl, wet at 49'. 10% sand below 55'. Encounter groundwater at 51.5'.		
			6.2	ML				
55 —			4.7					
			7.9					Neat
			7.3			SILT WITH SAND – Reddish brown (5YR5/6); 80% nonplastic fines; 20% fine, less medium, trace coarse		Cement
60 —			12.9	ML		subrounded sand. Moist to wet, firm to hard, weak reaction to HCI.		
_								
			5.7					
65 —			10.0	ML		70% nonplastic fines; 30% fine to coarse subangular to subrounded sand; trace fine subangular gravel to 3/8". Hard, moist to wet, strong local reaction to HC); e I,	8.25" Borehole
_						visible caliche nodules. SILT WITH SAND – Reddish brown		
_			6.1	ML		(5YR5/4); Same as above.		
70 —			0.1					
			11.1	ML		SANDY SILT – Reddish brown (5YR5/4 Same as above. Granitic sands, contain hard siltstone horizons at 71, 73, and 76); is 5'.	
						HARGIS+ASSOCIATES, INC.		Page 3 of 10

			WEL	L:	B	BN	1V	1-09D	PRC PRC	DJECT: <i>ECF</i>	9 40th St and Osborn ABER: 1137	
DRILLIN	IG (D B	COMPA	NY:Cas iese	scade	9 E	Drii	ling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOC	ATION: 34	36 E. Pinchot Ave, noenix, AZ	
ADWR No.: 55-921211TOTAL BOREHOLE DEPTH: 288 ft blsCREVIEWED BY: B. WaggleLAND SURFACE ELEV: 1168.88PSAMPLING METHOD: hydropunchSCREEN INTERVAL: 180.7 - 230.7ftPID: Minirae3000DEPTH TO WATER: 51.5 ft blsF										COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	USCS		GRAPHIC	LOG	LITHOLOGIC DESCRIPTION OF MATERIAL DIAGRA			CONSTRUCTION DIAGRAM	
			27.1 8.9 15.7	ML				SANDY SILT cont.			Neat	
			4.3	SM				SILTY SAND – Dark reddish brown (2.5YR4/4); 60% fine to coarse subrounded sand; 40% nonplastic fines trace fine subrounded gravel to ¾". Wet loose with hard silt stringers, weak reaction to HCI.	- , ; ;		Cement	
_		<0.25	17.3	ML				SILT WITH SAND – Brown (7.5YR5/4); 85% nonplastic fines; 15% fine, less medium subrounded sand. Wet, weak reaction to HCI, moderately firm.				
85 —			4.4	ML				SANDY SILT – Reddish brown (5YR5/4 60% nonplastic fines; 40% fine to coarse subangular to subrounded sand; trace fine rounded gravel to 5/8". Soft, wet, no reaction to HCI.	·); e D		4" SCH40PVC Blank Casing	
90 —			9.2 3.3	SM				SILTY SAND – Dark reddish brown (5YR3/4); 55% fine to coarse subrounde to rounded sand; 35% nonplastic fines; 10% fine subrounded, trace coarse rounded gravel to 2". Loose, wet, no	əd			
-			2.3	ML				reaction to HCl. SANDY SILT WITH GRAVEL – Red (2.5YR4/4); 55% nonplastic fines; 30% fine to coarse subangular to subrounded sand; 15% fine, trace coarse subangula to rounded gravel to 1". Wet, hard.	d ır		8.25" Borehole	
95 —			3.4	ML				SILT WITH SAND – Reddish brown (5YR4/4); 75% nonplastic fines; 20% fin to medium, less coarse subangular sand 5% fine angular gravel to ½". Firm to	ne d;			
							4	HARGIS+ASSOCIATES, INC.			Page 4 of 10	

			WEL	L:	B	SN	١W	/-09D	PR PR	OJECT: ECP 40th St and Osborn OJECT NUMBER: 1137
	NG (D P	COMPA	NY:Ca: iese	scade) 2 E	Dril	ling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LO	CATION: 3436 E. Pinchot Ave, Phoenix. AZ
ADWR No.: 55-921211TOTAL BOREHOLE DEPTH: 288 ft blsREVIEWED BY: B. WaggleLAND SURFACE ELEV: 1168.88SAMPLING METHOD: hydropunchSCREEN INTERVAL: 180.7 - 230.7PID: Minirae3000DEPTH TO WATER: 51.5 ft bls										DMMENTS: CE = tetrachloroethene ols = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	USCS LOG LOG				LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM	
_			5.0	ML				Splrd, weak saageboebta. HCI, wet.		
 100	-		6.5	SM				SILTY SAND – Dark reddish brown (2.5YR3/4); 60% fine to medium subrounded to rounded sand; 40% nonplastic fines; trace rounded gravel to	D	Neat Cement
-			8.3		•••••			¹ / ₂ ". Loose, wet, no reaction to HCl.		
_		5.67						SILT – Light reddish brown (5YR6/4);		
105 —	-		9.3					90% nonplastic fines; 10% fine, trace medium subrounded sand.Wet, firm, weak reaction to HCI, contains well cemented siltstone stringers.		
_	-		19.7							
 110	-		18.8	ML						4" SCH40PVC Blank Casing
_			22.3							
_	-		8.0							
115 —			22.6							8.25" Borenole
			10.7	SM				SILTY SAND – Reddish brown (2.5YR4/4); 60% fine, less medium subrounded to rounded sand; 40% nonplastic fines. Firm, wet, no reaction	to	
			10.8							
				ML				SILT WITH SAND – Reddish brown		
	Page 5 of 10									

			WEL	L:	BMW	1-09D	PROJECT: ECF PROJECT NUM	9 40th St and Osborn MBER: 1137
			NY:Ca	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LOCATION: 34	136 E. Pinchot Ave, poenix AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: VEC ING	: <i>55-921</i>) BY: <i>B.</i> ; METH(e3000	211 Waggle OD: hyo	e Iropun	ch	TOTAL BOREHOLE DEPTH: 288 ft blsCOMMENTS:LAND SURFACE ELEV: 1168.88PCE = tetrachloroetheneSCREEN INTERVAL: 180.7 - 230.7Ft bls = feet below land s		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL C	CONSTRUCTION DIAGRAM
		10.22	14.3			9157 R444): SARenenglastic fines; 20% fine, trace medium subangular to		
			34.0	ML		subrounded sand. Firm to hard, wet, no to weak reaction to HCI.		
			14.2	SM		SILTY SAND – Dark reddish brown (2.5YR2.5/4); 65% fine to coarse		
-			10.5	ML		35%nonplastic fines. Loose, wet, no reaction to HCI, contains rounded grave size clasts of siltstone to 1½". SANDY SILT – Same as above.		9.25" Derehole
 130			5.3	SM		SILTY SAND – Same as above. Hard, wet, weak reaction to HCI.		8.25 Borenole
			6.6	ML		SILT WITH SAND – Reddish brown (5YR5/4); 80% nonplastic fines; 20% fir to medium subrounded to rounded sand Wet, firm, several well cemented silt horizons.	e I.	4" SCH40PVC
125			0.0			SILTY SAND – Same as above.		Diarin Casing
			0.5	SM				
_			2.5			SILT WITH SAND – Same as above; finer formation.		
			4.9	ML				Neat Cement
140 —			8.5					
_								
_		0.35	12.1			SILT – Reddish brown (5YR5/4); 90% nonplastic fines: 10% fine. less medium		Bentonite Seal
			10.6	ML		sand. Firm, wet, dries out 147', no to weak local reaction to HCl, color change to reddish brown (5YR4/4) 149 – 153'.	9	
					4	HARGIS+ASSOCIATES, INC.	ral k	Page 6 of 10

MON DATE D	IIT RIL		WEL	L:	В 8	N	W	/-09D DATE COMPLETED: 4/2/2018	PR PR	OJECT: ECP 40th St and Osborn OJECT NUMBER: 1137			
	IG (D E	COMPA	NY:Cas iese	scade	D	rill	ing	DRILLING METHOD: Sonic BOREHOLE DIA (inch): 8.25/6.125	LO	CATION: 3436 E. Pinchot Ave, Phoenix, AZ			
ADWR I REVIEW SAMPLI PID: Mir	No.: VEC ING nira	55-921 BY: <i>B.</i> METH e3000	211 Waggle OD: hyo	e Iropun	nch	1		TOTAL BOREHOLE DEPTH: 288 ft blsCOMMENTS:LAND SURFACE ELEV: 1168.88PCE = tetrachloroetheneSCREEN INTERVAL: 180.7 - 230.7ft bls = feet below land sDEPTH TO WATER: 51.5 ft blsPCE = tetrachloroethene					
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs		GRAPHIC	LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM			
-			9.4					SILT WITH SAND cont.		Bentonite Seal 4" SCH40PVC			
 150			16.3	ML						Centralizer			
_			14.6							8.25" Borehole			
_			7.2										
155 —			3.0							4" SCH40PVC 0.020" Screen			
								SILTY SAND – Dark reddish brown (2.5YR3/4); 55% fine, trace medium and coarse rounded sand; 45% nonplastic fines. Wet, firm, no reaction to HCI, fine to coarse rounded sand and 30% fines 162 to 166'.	d at				
- 160			1.4	SM						#10-20 Sand			
		12.66	2.1							Filter Pack			
165 —			1.9										
-			0.5	ML				SANDY SILT – Dark reddish brown (2.5YR3/4); 60% nonplastic fines; 40% fine, less medium, trace coarse rounded sand. Firm, wet, no reaction to HCI.	d				
				SM				SILTY SAND WITH GRAVEL – Dark					
				HARGIS+ASSOCIATES, INC. Page 7 of 10									

MON DATE D	RIL	OR .LED : 3	WEL 2/19/18 -	L:	BMW 8	/-09D DATE COMPLETED: 4/2/2018	PROJE PROJI	ECT: ECP 40th St and Osborn ECT NUMBER: 1137		
	IG (D P		NY:Cas	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LOCAT	TION: 3436 E. Pinchot Ave, Phoenix. AZ		
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG	55-921 BY: <i>B.</i> METH e3000	1211 Waggle OD: hyo	COMM PCE ft bls	/ENTS: = tetrachloroethene = feet below land surface					
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM		
170 — — — 175 —			1.5 2.3 2.4	SM		reddish brown (2.5YR3/4); 65% fine to coarse subrounded to rounded sand; 20% nonplastic fines; 15% fine rounded gravel to 5/8". Loose,wet, no reaction to HCI. SANDY SILT – Reddish brown to dark reddish brown (2.5YR5/4 to 2.5YR3/4); Same as above. Contains siltstone				
			4.6 3.4	ML		breccia clasts.		#12-20 Sand		
 180			5.6	SM		SILTY SAND WITH GRAVEL – Dark reddish brown (2.5YR3/4); 55% fine to coarse rounded sand; 25% fine, less coarse rounded gravel to 11/2"; 20% nonplastic fines. Loose, wet, no reaction		Filter Pack		
		16.60	4.5			to HCl. SILTY SAND – Dark reddish brown (2.5YR3/4); 75% fine to coarse subrounded to rounded sand; 20%		4" SCH40PVC		
 185			3.2	SM		to 1/2". Wet, loose, no to weak reaction to HCI.	0			
			3.9							
			13.1	SM/ ML		SILTY SAND/SANDY SILT – Dark reddish brown to dark red (2.5YR3/4 to 2.5YR3/6); 50% nonplastic fines; 40% fine to coarse subrounded sand; 10% fine subrounded to rounded gravel to ¾ No reaction to HCl, wet, firm to hard.				
_			8.1	ML		SANDY SILT WITH GRAVEL – Reddish brown (2.5YR4/4 TO 2.5YR4/6); 55% no to low plastic fines; 25% fine to coarse angular to subrounded sand; 20% fine, trace coarse subrounded granitic gravel	า วท			
			3.1	SM		to 11/2". Hard, wet, strong reaction to HCI, clay streak and caliche nodules		Ħ		
	HARGIS+ASSOCIATES, INC. Page 8 of 10									

MON			WEL	.L:	BMW	-09D	PROJECT	ECP 40th St and Osborn	
DRILLIN LOGGE	IG (D E	COMPA SY: M W	NY:Cas iese	4/2/1 scade	o Drilling	DATE COMPLETED: 4/2/2018 DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION	l: 3436 E. Pinchot Ave, Phoenix, AZ	
ADWR 1 REVIEW SAMPLI PID: Mir	No.: VEC ING nira	: <i>55-921</i>) BY: <i>B.</i>) METH e3000	'211 Waggle OD: hya	e Iropur	nch	TOTAL BOREHOLE DEPTH: 288 ft bls LAND SURFACE ELEV: 1168.88 SCREEN INTERVAL: 180.7 - 230.7 DEPTH TO WATER: 51.5 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surfac		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WE	LL CONSTRUCTION DIAGRAM	
195 — 			8.0	SM		throughout. SILT WITH SAND cont. SILTY SAND WITH GRAVEL – Reddish brown (2.5YR4/4); 45% nonplastic fines 40% fine to coarse angular to subrounded sand; 15% fine angular to subrounded gravel to ¾". Firm, wet, no reaction to HCI.	<u>)</u> ;	8.25" Borehole	
 200			4.0	ML		SANDY SILT WITH GRAVEL – Light reddish brown (2.5YR6/4); 55% nonplastic fines; 30% fine to coarse angular to subrounded sand; 15% fine angular, trace coarse subrounded grave to 1½". Firm to hard, wet, weak reaction to HCI. Dropped core 199 – 202'.	91	#12-20 Sand Filter Pack	
 205		23.37	13.7	SM		SILTY SAND WITH GRAVEL – 45 % nonplastic fines; 40% fine to coarse angular to subrounded sand; 15% fine subangular gravel to 1/2". Wet, firm, no reaction to HCI. 4" rounded cobble at 203.5'. Dropped core 202-209'. SANDY SILT – Light reddish brown	_	4" SCH40PVC 0.020" Screen	
-			1.4	ML		(2.5YR6/3); 60% nonplastic fines; 30% fine to coarse angular to subrounded sand; 10% fine, trace coarse subrounde gravel to 2". Firm, wet, to HCI to 208', moist, low plastic fines below, moderate reaction to HCI. Dropped core 202-209' SANDY SILT WITH GRAVEL – 55%	d		
210 —			22.9	ML		nonplastic fines, 30% fine to coarse angular to subrounded sand; 15% fine, trace coarse angular to subrounded gravel to 2". Firm, wet, no reaction to H0 to 211', hard, moist, moderate reaction HCI below.	CI 20	Centralizer PVC Well Cap	
-			22.8					Filter Pack	
215 —			10.6	SM		SILTY SAND WITH GRAVEL – Dark reddish brown (7.5YR3/4); 45% fine to coarse subangular to subrounded sand; 40% nonplastic fines; 15% fine angular subrounded, trace rounded gravel to 1". Wet, loose, no reaction to HCI.	to	8.25" Borehole #12-20 Sand Filter Pack	
						HARGIS+ASSOCIATES, INC.	-	Page 9 of 10	

		WEL	L:		-09D	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137		
	COMPA BY: M W	NY:Cas iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION: 3436 E. Pinchot Ave, Phoenix, AZ		
ADWR No REVIEWE SAMPLIN PID: Minii	.: <i>55-921</i> D BY: <i>B.</i> G METH ae3000	1211 Waggle OD: hyo	e Iropun	nch	TOTAL BOREHOLE DEPTH: 288 ft bls LAND SURFACE ELEV: 1168.88 SCREEN INTERVAL: 180.7 - 230.7 DEPTH TO WATER: 51.5 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface		
DEPTH (feet)	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
 220		52.0	SM			Bentonite		
_	10.40	24.9			SILTY SAND/SANDY SILT – Dusky rec (10R3/4); 50% nonplastic fines; 40% fir to coarse angular to subrounded sand;	e 8.25" Borehole		
		72.3			10% fine subangular gravel. Firm to han wet, strong local reaction to HCI.	d,		
		58.5	SM/ ML					
 230		32.6						
_		47.3			SILTY SAND WITH GRAVEL – Dark reddish brown (2.5YR2.5/4); Same as above with coarse subrounded gravel to			
_		41.2	SM			6.125" Borehole		
235 —		37.0			SANDY SILT- Weak red to Dusky red (10R4/4 to 10R3/4); 55% nonplastic fines; 35% fine to medium, less coarse angular to subrounded sand; 10% fine subangular gravel to ½". Firm to hard, wet, no to weak reaction to HCI.	XXXXX		
		66.6	ML			Bentonite Slough		
240 —		66.1				Lost core bit		

			Envii 460	ronment & I 00 East Wa Phoer	D Infrastri shingto nix, Ariz	OC ucture Soluti on Street, Su zona 85034	ons, Inc. ite 600				BORING I	_0	G I.D	.:	BMW-10B Page 1 of 3
PROJEC	ст:			(ECP) 4	0th St	reet & Osb	orn Road	WQARF	:	P	ROJECT LOCATION:		2538 Nor	th 3	0th Street
LOGGE	D BY:			L. Baade	ər					P	ROJECT FEATURE:		Phoenix,	AZ	
DRILLE	R:									w	OOD PROJECT #:		14-2019-2	2034	4
DRILLE	r fir	M:		Cascade	e Drillin	ng LP				A	DWR REG. #:		55-92286	8	
RIG I.D.	:									S	TATION/OFFSET:				
RIG TYP	E:			Sonic						R	EFERENCE:				
BORING	Э ТҮР	E:		Hydropu	Inch		BOR	ING DIA	A.: 10"	С	OORDINATES:		33.47638	9°, -	112.017222º
ORIENT	ΑΤΙΟ	N:		90°						С	OORDINATE SYS:		Latitude,	Lon	gitude
HAMME	R TY	PE:								S	URFACE ELEV. (FT):		1149.25' :	t	
HAMME	R CA	LIBF	ATI	ON-ENER	GY T	RANSFER	RATIO:			v	ERTICAL DATUM:		NAVD88		
START	DATE	:		9/3/2019)		START	TIME:		С	OMPLETION DATE:		9/4/2019		COMPLETION TIME:
Elevation in Feet	Depth in Feet	Granhical	Log	Sample ID. or	Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	(Color Tou	VISUAL r, Moist, % ughness, D	_ CLAS by wt Dry Str	SSIFICATION , Plasticity, Dilatancy, ength, Consistency)	Depth in Feet	(Cons	truc	WELL INFORMATION ction Details and/or Drilling Remarks)
-1149.3 -	0-							2" A	sphaltic Co	oncret	e over	0 -		X	Lock Well Cap, Flush Mounted
- 1144.3 - - 1144.3 - - 1139.3 - - 1139.3 - - 1134.3 - - 1134.3 - - 1129.3 - - 1129.3 - 								6" Fi	IÍ DY SILT, dominantly ed sand, 1 angular gra	70% f / silt), : l0% fi avel, d	înes 20% fine to coarse ne grained, ry				Steel Well Vault and Concrete Pad 10" ± Diameter Borehole 4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 75' Cement Bentonite Grout
 - 1119.3 - 	- - - 30- - -						ML	SILT med grav	7, 80% fine ium graine el, dry : weakly ce	es (silf ed san ement	i), 10% fine to d, 10% fine grained ed nodules at 29'	30 -		XXXXXXXXXXXXX	From 1.5' to 71'
- 1114.3 -	35-						ML	SAN (preo grair grair incre	DY SILT, dominantly ned sand, 2 ned, suban ease in coa	50% f v silt), 3 20% fi ngular arse gi	ines 30% fine to coarse ne to coarse gravel, dry, note: rained sand at 38'	35 -		XXXXXXXXX	
1109.3 -	40-	(GRC		ATEF							40 -			
∇	DEPTH(ft bgs) HOUR DATE														(Continued Next Page)
▼	'														
T T	<u> </u>														
⊥ ▼	<u> </u>														
<u>-¥</u> -					1										

METHOD N/A

wood	•
Environment & Infrastructure Solutions 4600 East Washington Street, Suite Phoenix, Arizona 85034	s, Inc 600

BORING LOG I.D.: BMW-10B

Page 2 of 3

	- I i		(E	CP) 40th	Street & Osb	orn Road	NQARF	PROJECT LOCATION:	2538 North 30th Street	
ADWR	REG. #	:	55	5-922868				PROJECT FEATURE:		Phoenix, AZ
Elevation in Feet	Depth in Feet	Graphical Log	2	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-1109.3 ·	40-		пF			MI	SANDY SILT. cor	ntinued	40 -	(Continued)
 - 1104.3 · 	45-						note: increase coa at 43' note: weakly ceme note: decrease in at 46'	arse grained gravel ented nodules at 45' coarse grained sand	- - - 45 -	10" ± Diameter Borehole
 - 1099.3 - 	50-								- - 50 - - -	4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 75'
- 1094.3 - 	55-								- 55 - - -	
	60-								60 -	Cement Bentonite Grout From 1.5' to 71'
 - 1084.3 - 	65-								- 65 - - -	
 - 1079.3 - 	70-						note: decrease in in fine to coarse g	fines (40%), increase rained sand (40%)	- 70 -	
 - 1074.3 - 	75-	<u>.</u>	, , , , , , , , , , , , , , , , , , ,			SW ML	WELL GRADED S lens SILT, 80% fines (some clay, 10% fi	SAND WITH SILT predominantly silt), ne grained sand, 10%	75 -	From 71' to 73'
 - 1069.3 - 	80-					ML	SANDY SILT (SA fine to medium gra cemented nodules	A, ugnuy compact, wet A), 80% fines, 20% ained sand, weakly	- 80 - -	4" Diameter Flush Threaded Schedule 40 Screen (0.020")
 - 1064.3 - 	85-						note: tightly comp fine 20%	act at 86', sand mostly	- 85 - - - -	From 75' to 105'
- 1059 3 -	90-								90 -	
1003.0		GR	OUI	NDWAT	ER				30	
⊻ ₹ ₹	DEPT	H(ft bgs 4.15	5) F	IOUR N/A	DATE N/A					(Continued Next Page)

wood	
Environment & Infrastructure Solutions, 4600 East Washington Street, Suite & Phoenix, Arizona 85034	Inc 600

BORING LOG I.D.: BMW-10B

Page 3 of 3

PROJEC	CT:		(ECP) 40	th Street & Osb	orn Road \	WQARF	PROJECT LOCATION:		2538 North 30th Street	
ADWR F	REG. #	<i>‡</i> :	55-92286	§8			PROJECT FEATURE:		Phoenix, AZ	
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID.	Date (Lime) PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)	
- 1059.3 -	90-				ML	SANDY SILT (SA	A). continued	90 -	(Continued)	
 - 1054.3 - 	- - 95- -						<i>y</i> , <i>continued</i>	- - - 95 -	10/20 Colorado Silica Sand From 73' to 107' 4" Diameter Flush Threaded Schedule 40 Screen (0.020")	
 - 1049.3 - 	- 100- -							- - 100 - - -	From 75' to 105'	
 - 1044.3 - 	105-					note: cobbles at 1	7	- 105 - - -	4" Diameter Threaded PVC Bottom Cap Total Depth = 107'	
 - 1039.3 - 	110-							- 110 - -		
 - 1034.3 - 	115-							- 115 - -		
 - 1029.3 - 	- 120- - -							- 120 - - -		
 - 1024.3 - 	- 125- - -							- 125 - - -		
	- 130- - -							- 130 - - -		
 - 1014.3 - 	135-							- 135 - - -		
	140+							- 140 -	1	
		GRC	UNDWA	TER				. 10		
Ţ Ţ Ţ	DEPT	H(ft bgs) 4.15	HOUR N/A	DATE N/A						
	METI	HOD _	N/A							

MON DATE D	I IT RIL		WEL /9/18 - 4	PR PF	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137							
	IG (D B	COMPA Y: <i>M W</i>	NY:Ca iese	scade	DI	illir	ng	DRILLING METHOD: Sonic BOREHOLE DIA (inch): 8.25/6.125	LO	CATION: 2538 N 30th St, Phoenix, AZ		
ADWR N REVIEW SAMPLI PID: Mir	No.: /ED NG	55-921 BY: <i>B.</i> METH e3000	212 Waggle OD: hyo	e Iropun	nch			TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	CC PC ft I	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs				LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM			
0 —				 ABC			XX	ASPHALT AGGREGATE BASE COURSE SILT WITH SAND – Reddish brown (5YR4/4); 85% nonplastic fines; 15% fir	ne	12" Traffic Rated Well Vault		
								to coarse subangular to subrounded sand. Firm, moist, moderate to strong reaction to HCI. Backfill – disturbed soil, abundant root fragments. 6" clay pipe at 4.7'. Borehole airknifed to 4.8'	•	Neat Cement		
5 —								SILT WITH SAND – Same as above. At	t 6	8.25" Borehole		
			5.6	ML				to 8 feet - 20% sand and frace fine subangular gravel to ¼".				
10 —			3.7									
_			12.6					SILT – Reddish brown (5YR5/4); 95% nonplastic fines; 5% fine sand. Soft with a few firm stringers, dry, strong reaction to HCl, root fragments at 19.5'.	ו ו	4" SCH40PVC Blank Casing		
 15			11.4									
			13.8	ML								
20 —			12.5									
			6.2									
								HARGIS+ASSOCIATES, INC.		Page 1 of 10		

MON DATE D	RIL	'OR .LED : 4	WEL /9/18 - 4	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137							
DRILLIN	IG (D B	COMPA	NY:Ca iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCA	ATION: 2538 N 30th St, Phoenix, AZ			
ADWR N REVIEW SAMPLI PID: Mir	lo.: /EC NG	55-921 BY: <i>B.</i> METH e3000	U212 Waggle OD: hyd	e Iropun	nch	TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	IMENTS: = tetrachloroethene s = feet below land surface				
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM				
			4.0 9.7 8.2 21.1 8.4	ML		SILTY Cont. SILTY SAND WITH GRAVEL – Light brown (7.5YR6/3); 45% fine to coarse subangular to subrounded sand; 30% nonplastic fines; 25% fine subangular to subrounded gravel to ½". Loose, dry, strong reaction to HCI. SILT – Reddish brown to yellowish red (5YR5/4 to 5YR5/6); 95% nonplastic fines; 5% fine, less medium sand. Dry, firm to locally hard, strong reaction to H SILTY GRAVEL WITH SAND – Reddish brown (2.5YR5/4); 40% nonplastic fines	CI.	Neat Cement 8.25" Borehole			
40 —			10.6 11.5 19.7 20.8 12.9	ML		 Silvin (2.3 r (3/4), 40% horiplastic lifes 35% fine subangular granitic gravel to 1/2"; 25% fine to coarse subangular sand. Dry, loose, strong reaction to HCI SANDY SILT – Yellowish red (5YR4/6); 65% nonplastic fines; 35% fine to coars subangular to subrounded sand; trace fine subrounded gravel to 3/8". Firm to 41', hard below, dry, strong reaction to HCI. SILTY SAND – Strong brown (7.5YR4/6 55% fine to coarse angular to subangular sand; 40% nonplastic fines; 5% fine subangular gravel to 1/2". Loose, dry, strong reaction to HCI. SILT – Yellowish red (5YR5/6); 100% nonplastic fines; trace fine sand. Soft, strong reaction to HCI, dry, contains ver hard lithified siltstones below 50', shows 	e e 3); ar	4" SCH40PVC Blank Casing			
	HARGIS+ASSOCIATES, INC. Page 2 of 10										

MON DATE D	MONITOR WELL: BMW-10DPROJECT: ECPDATE DRILLED : 4/9/18 - 4/24/18DATE COMPLETED: 4/25/2018PROJECT NUN											
DRILLIN LOGGEI	IG (D B	COMPA SY: <i>M W</i>	NY:Cas iese	scade	D D	rill	ing	DRILLING METHOD: <i>Sonic</i> BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION	N: 2538 N 30th St, Phoenix, AZ		
ADWR No.: <i>55-921212</i> REVIEWED BY: <i>B. Waggle</i> SAMPLING METHOD: <i>hydropunch</i> PID: Minirae3000								TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	COMMENT PCE = tet ft bls = fe	ITS: etrachloroethene eet below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs		GRAPHIC	LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WE	ELL CONSTRUCTION DIAGRAM		
			43.5					\$ዾ፼ጚዄዂቔኯ፼ኯ ፼ቚዀቚቘ		4" SCH40PVC		
50 — 			38.9	ML						Blank Casing		
			32.1									
55 —			34.4									
_			73.7					SANDY SILT – Reddish brown (5YR5/4 65% nonplastic fines; 30% fine to coars subangular to subrounded sand; 5% fine angular gravel to 3/8". Firm to hard, dry, strong reaction to HCL.); Ə Ə	Neat Cement		
60 — —			71.6	ML								
			16.5					SILT WITH SAND – Reddish brown (5YR5/4); 80% nonplastic fines; 20%fine to coarse subrounded sand. Firm to har dry, moist at 72', wet at 75', strong				
_			33.3							8.25" Borehole		
 70			46.0	ML								
					-		4	HARGIS+ASSOCIATES, INC.	•	Page 3 of 10		

MONI [®]		WEL	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137					
		NY:Ca:	scade	e Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LOCATION: 2538 N 30th St, Phoenix, AZ		
ADWR No REVIEWE SAMPLING PID: Minira	:: <i>55-921</i> D BY: <i>B.</i> G METH ae3000	1212 Waggle OD: hyd	e Iropur	nch	TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface		
DEPTH (feet) SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
_		22.9	ML		SANDY SILT cont.			
75 —		32.6			SILTY SAND – Reddish brown (5YR4/4);		
_	8.06	37.4	SM		45% fine to coarse subrounded sand; 45% nonplastic fines. Wet, firm with ver hard siltstone and breccias clasts, no reaction to HCI. Encounter groundwater	y 76.6 bls Neat Cement		
		82.0	ML		SILT – Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to medium, trace coarse subrounded sand. Moist, firm with hard hard siltstone clasts,			
_		12.0	ML		moderate to locally strong reaction to H SANDY SILT – Reddish brown (5YR4/4 70% nonplastic fines; 30% fine to medium, less coarse subrounded sand.	<u>);</u>		
_		12.9			SILT WITH SAND – Same as above.			
85 —		13.1 24.8	ML			4" SCH40PVC		
_		23.4				Blank Casing		
 90		46.2	SM		SILTY SAND – Reddish brown (2.5YR4/4); 55% fine to coarse subrounded to rounded sand; 35% nonplastic fines; 10% fine subrounded gravel to ¾". Wet, loose, no reaction to			
_		34.7			HCI. SILT – Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine, less medium trace coarse subrounded to rounded	, 8.25" Borehole		
		46.3			sand. Wet, firm, weak to moderate reaction to HCI.			
	0.50	23.9	ML		HARGIS+ASSOCIATES, INC.	Page 4 of 10		

MON DATE D	IIT RIL	TOR .LED : 4	WEL /9/18 - 4	PF Pf	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137						
DRILLIN	NG (D E	COMPA	NY:Cas iese	scade	Drillin	ng	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LC	DCATION: 2538 N 30th St, Phoenix, AZ		
ADWR N REVIEW SAMPLI PID: Mir	No.: VEC ING nira	: <i>55-921</i>) BY: <i>B.</i>) METH(e3000	212 Waggle OD: hyo	e Iropun	ch		TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	C P ft	OMMENTS: CE = tetrachloroethene bls = feet below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG		LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM		
-		0.00	8.8	ML			SILT WITH SAND cont.				
100 —			8.6						Neat Cement		
	-		7.3	SM			SILTY SAND – Reddish brown (5YR4/4 50% fine to coarse subrounded to rounded sand; 40% nonplastic fines; 10 fine subangular gravel to 3/8". Wet, no reaction to HCl, loose.	4);)%			
 105			2.2 3.8	ML		:1:	SILT WITH SAND – Reddish brown (5YR4/4); 80% nonplastic fines; 20% fine, less medium subrounded sand. So wet, no reaction to HCI.	oft,			
 110	-		3.9	SM			SILTY SAND – Same as above. SILT – Reddish brown (5YR4/4); 95% nonplastic fines; 5% fine sand. Wet, firm to hard, weak to locally strong reaction HCI, moist low plastic fines at 103'.	n to	4" SCH40PVC Blank Casing		
_	-		2.7	ML							
		3.83	4.4								
115 —	-		2.3	ML			SANDY SILT – Reddish brown (5YR4/4 70% nonplastic fines; 30% fine to coars subrounded sand. Firm, no to weak reaction to HCI, wet.	4); se	8.25" Borehole		
			1.7	SM			SILTY SAND – Reddish brown (5YR4/4 55% fine to coarse subangular to subrounded sand; 40% nonplastic fines 5% fine subangular gravel to ¼". Firm, wet, no reaction to HCl	4); ;;			
120 —				ML			SILT – Reddish brown (5YR4/4); 100%				
	HARGIS+ASSOCIATES, INC. Page 5 of 10										
				L:	B 8	M	W	/-10D	PF Pf	ROJECT: ECP 40th St and Osborn ROJECT NUMBER: 1137	
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	IG (D E	COMPA 3Y: <i>M W</i>	NY:Ca: iese	scade	e E	Drilli	ng	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8.25/6.125	LC	DCATION: 2538 N 30th St, Phoenix, AZ	
ADWR N REVIEW SAMPLI PID: Mir	Vo.: VED NG	: 55-921 D BY: <i>B.</i> D METH e3000	U212 Waggle OD: hyo	e Iropun	ncł	7		TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	C P ft	OMMENTS: CE = tetrachloroethene bls = feet below land surface	
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS		GRAPHIC	۲ C C	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM	
			2.7 1.3					sonplastic figes trace tine to medium sand. Wet, firm, weak to locally strong reaction to HCI, contains very hard dry siltstone stringers from 119 to 120'.			
125 —			0.9								
			4.8	ML						8.25" Borehole	
 130			2.9								
_			3.7								
		<0.25	11.4							4" SCH40PVC Blank Casing	
135 —			5.8					SILT WITH SAND – Reddish brown			
			3.0	ML				(5YR5/4); 85% nonplastic fines; 15% fine, less medium subrounded sand. Firm, wet, no reaction to HCI.		Neat Cement	
 140			3.2	ML				SILT – Same as above with 95% nonplastic fines; 5% fine sand.			
				ML				SILT WITH SAND – Same as above.		Bentonite	
			1.8					SILT – Same as above.		Seal	
145 —	1			ML		- III	4k	HARGIS+ASSOCIATES, INC.		₽age 6 of 10	

MON DATE D	RIL	'OR LED : 4	WEL /9/18 - 4	L: 4/24/1	E 8	31	٨N	/-10D DATE COMPLETED: <i>4/25/2018</i>	PF PF	ROJECT: ECP 40th St and Osborn ROJECT NUMBER: 1137
	IG (D B	COMPA Y: <i>M W</i>	NY:Cas iese	scade	e l	Dri	lling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8.25/6.125	LO	CATION: 2538 N 30th St, Phoenix, AZ
ADWR N REVIEW SAMPLI PID: Min	No.: /ED NG	55-921 BY: <i>B.</i> METH e3000	212 Waggle OD: hyo	e Iropun	nc	h		TOTAL BOREHOLE DEPTH: 293 ft blsLAND SURFACE ELEV: 1147.62COMMENTS:SCREEN INTERVAL: 230.6 - 280.6PCE = tetrachloroethenDEPTH TO WATER: 76.6 ft blsft bls = feet below land s		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs		GRAPHIC	POG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM
			6.3	ML				SILT WITH SAND cont.		Bentonite Seal 4" SCH40PVC Blank Casing
150 — — —			4.4	ML				SILT WITH SAND – Reddish brown (5YR4/4); 75% nonplastic fines; 25% fine, less medium subrounded sand. Firm, wet, no reaction to HCI.		8.25" Borehole
_		0.60	0.6					SILT – Same as above.		
155 — —			7.9	ML						4" SCH40PVC 0.020" Screen
			0.4	ML				SILT WITH SAND – Same as above wit 75% nonplastic fines and 25% fine to medium sand.	th	
160 — — —			0.6	SP				POORLY GRADED SAND – Brown (7.5YR4/4); 95% medium, less fine subrounded to rounded sand; 5% nonplastic fines. Wet, no reaction to HC loose to very hard, well cemented at 163.5'.	XI,	#10-20 Sand Filter Pack
 165 		1.41	4.6	sw				WELL GRADED SAND WITH GRAVEL Brown (7.5YR4/4); 75% fine to coarse subrounded to rounded sand; 20% fine rounded gravel to ¾"; 5% nonplastic fines. Wet, loose, no reaction to HCI. WELL GRADED SAND – Light brown (7.5YR6/3); 85% fine to coarse subrounded to rounded sand; 10% fine rounded gravel to 3/8"; 5% nonplastic		
				ML	1			HARGIS+ASSOCIATES, INC.	, (₿ 🕅 Page 7 of 10

MON DATE D	RII		WEL	.L: 4/24/1	BMW	/-10D DATE COMPLETED: 4/25/2018	PROJECT PROJEC	F: ECP 40th St and Osborn
DRILLIN	١G	COMPA	NY:Ca	scade	e Drilling	DRILLING METHOD: Sonic	LOCATIO	N: 2538 N 30th St,
ADWR I REVIEW SAMPLI PID: Mir	D E No. VEE ING nira	3Y: <i>MW</i> : 55-921 DBY: <i>B.</i> GMETH e3000	iese 1212 Waggle OD: hyc	e Iropur	nch	BOREHOLE DIA (inch).: 8.25 / 6.125 TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	COMMEN PCE = to ft bls = fo	NTS: etrachloroethene eet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WI	ELL CONSTRUCTION DIAGRAM
170 —			7.5	ML		hard, moderate to strong reaction to HC Core barrel stuck in formation at 167.5'. SILT – reddish brown (5YR4/4); 100% non to low plastic fines; trace fine sand.	l	
_		<0.25	1.6			Hard, low plastic fines with strong reaction to HCl to 169.5', 5% fine sand, firm, weak to moderate reaction below.		
 175			2.1	ML		(5YR4/4); 75% nonplastic fines; 25% fin sand. Soft, wet, no reaction to HCI. SILT – Reddish brown (5YR5/4); 95% nonplastic fines; 5% fine sand. Wet, firm	e	
_			1.2	ML		weak reaction to HCI.		
	-		0.5	SW- SM	1,10,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	WELL GRADED SAND WITH SILT – Dusky red (10R3/4); 90% fine to coarse rounded sand; 10% nonplastic fines; trace fine rounded gravel to 1%" Loose	_	#12-20 Sand Filter Pack
_	-		7.9	ML	39966	wet, no reaction to HCl. SILT – Reddish brown (5YR5/4); 95% nonplastic fines; 5% fine sand. Wet, firm to hard, moderate reaction to HCl,	1	
_	-		3.1	SM		contains well cemented siltstone nodule SILTY SAND WITH GRAVEL – Reddish brown (5YR4/4); 50% fine to coarse subangular to rounded sand; 35%	ו <u>א.</u> ו	4" SCH40PVC 0.020" Screen
185 —			4.1			rounded gravel to ¾". No reaction to HC wet, firm.) ; ,	
_			2.0	SW- SM		Same as above.	_	
			6.4	SM		(5YR3/4); 60% fine to coarse subangula to rounded sand; 40% nonplastic fines; trace fine subangular gravel to ½". Firm wet, no reaction to HCI.	,	
			5.6	ML		SILT WITH SAND – Reddish brown (5YR5/4); 80% nonplastic fines; 20% fin to coarse subangular to subrounded sand; trace fine 10% fine subangular	e	
		<0.25	5.1	SM		gravel to 3/8". Firm to hard, wet, weak reaction to HCI. SILTY SAND – Dusky red (2.5YR3/4); 65% fine to coarse subrounded to		
					4	HARGIS+ASSOCIATES, INC.		Page 8 of 10

			WEL	L: 4/24/1	BMW 8	/-10D DATE COMPLETED: 4/25/2018	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137	
	NG (D E	COMPA	NY:Ca: iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LOCATION: 2538 N 30th St, Phoenix, AZ	
ADWR I REVIEV SAMPL PID: Mit	No.: VEC ING nira	55-921 BY: <i>B.</i> METH e3000	212 Waggle OD: hyd	e Iropun	nch	TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surfac	ce
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM	
195 — 			9.2			Geunded sand: #0% posplastic tines; 5% fine subangular to rounded gravel to 34" Wet, firm, weak to locally strong reaction to HCI.	% n 8.25" Borehole	÷
_	-		3.5					
200 —	-		0.9	SM			#12-20 Sand Filter Pack	
	-		2.7				4" SCH40PV(С
205 —	-		4.5				0.020 Screen	1
_	-		5.5					
 210			2.0	ML		GRAVELLY SILT WITH SAND – Reddis brown (5YR5/4); 55% nonplastic fines; 25% fine, less coarse subangular to subrounded gravel to 1¼"; 20% fine to coarse subrounded to rounded sand. Firm to hard, wet, weak reaction to HCl,	sh Centralizer PVC Well Cap	
_		1.49	8.5			contains large clasts of breccias.	Filter Pack	
215 —			5.8	SM		SILTY SAND – Same as above.	8.25" Borehole #12-20 Sand Filter Pack	;
						HARGIS+ASSOCIATES, INC.	Page 9 of 10)

MON DATE D	RIL	'OR LED : 4	WEL /9/18 - 4	L: 4/24/1	BMV 8	/-10D DATE COMPLETED: 4/25/2018	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137		
DRILLIN LOGGE	IG (D B	COMPA Y: <i>M Wi</i>	NY:Cas iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION: 2538 N 30th St, Phoenix, AZ		
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG nira	55-921 BY: <i>B.</i> METH e3000	212 Waggle OD: hyo	e Iropur	nch	TOTAL BOREHOLE DEPTH: 293 ft bls LAND SURFACE ELEV: 1147.62 SCREEN INTERVAL: 230.6 - 280.6 DEPTH TO WATER: 76.6 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
			7.9	SM		SILTY SAND WITH GRAVEL – Dark reddish brown (10R4/2); 50%	Bentonite		
			4.7	SM		subrounded sand; 25% subrounded gravel; 25% nonplastic fines. Wet, weak reaction to HCI, loose.	8.25" Borehole		
			5.6	SM		(2.5YR6/8); same. Up to 1" diameter gravel.			
230 —			1.4			SILTY SAND WITH GRAVEL – Strong brown (7.5YR5/8); same as above. Subangular sand and gravel.			
		4.71	2.4	SM			6.125" Borehole		
235 —			6.9 5.2			SILTY SAND WITH GRAVEL – Yellowis red (5YR5/8); 40% well graded sand, 40% well graded subrounded gravel, 20% fines, Gravel up to 1½ ". Wet, weal HCI reaction.	sh <		
240			8.7	SM			Bentonite Slough Lost core bit		
	HARGIS+ASSOCIATES, INC. Page 10 of 10								

MON DATE D	I IT Ril		WEL /30/18 -	L: 5/8/1	BMW 8	/-11D DATE COMPLETED: 5/9/2018	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137
	IG (D B	COMPA	NY:Cas iese	scade	e Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION: 3013 N 38th St, Phoenix, AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG nira	55-921 BY: <i>B.</i> METH e3000	'213 Waggle OD: hyd	e Iropun	nch	TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM
0 —						ASPHALT	12" Traffic Rated
				ML		SANDY SILT – Brown (7.5YR4/4); 60% nonplastic fines; 30% fine to coarse subangular to subrounded sand; 10% fine subangular to subrounded gravel to 1". Firm, dry, strong reaction to HCI. At 6 – contains 40% sand and trace fine subangular gravel.	5, Neat Cement
_							8.25" Borehole
 10			8.3	ML		SILT – Reddish brown (2.5YR4/4); 90% nonplastic fines; 10% fine to medium subrounded sand. At 6 to 8 feet - 20% sand and trace fine subangular gravel to ¼".	
			30.2	SM		SILTY SAND WITH GRAVEL – Reddish brown (2.5YR4/4); 40% nonplastic fines 40% fine to coarse subangular sand;	- 4" SCH40PVC Blank Casing
 15			33.0			20% fine angular to subrounded gravel f 3/4". Loose, dry, strong reaction to HCI. SILT – Reddish brown (2.5YR5/4 to 5YR5/4); 95% nonplastic fines; 5% fine medium subrounded sand. Dry, hard to 17.5', soft below, strong reaction to HCI.	to
			16.1	ML			
20 —			12.4				
_			10.3	SM		SILTY SAND WITH GRAVEL – Same a above with ½" granitic gravel. SILT – Same as above. Contains siltstone horizons, very hard 26 to 20'	
				ML		HARGIS+ASSOCIATES, INC.	Page 1 of 10

MON DATE D	IIT RIL	'OR LED : 4	WEL /30/18 -	L: 5/8/1	E 8	BN	///	/-11D DATE COMPLETED: <i>5/9/2018</i>	PROJEC ⁻ PROJEC ⁻	T: ECP 40th St and Osborn T NUMBER: 1137
DRILLIN LOGGEI	ig (D B	COMPA Y: <i>M W</i>	NY:Cas iese	scade	e C	Dri	lling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATIO	N: 3013 N 38th St, Phoenix, AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG	55-921 BY: <i>B.</i> METH e3000	213 Waggle OD: hyd	e Iropur	nci	h		TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	COMMEN PCE = to ft bls = f	NTS: etrachloroethene eet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs		GRAPHIC	DOJ	LITHOLOGIC DESCRIPTION OF MATERIAL	W	ELL CONSTRUCTION DIAGRAM
 25			6.8	ML				SILT cont.		
_			5.3							
30 —			7.4	MI				SANDY SILT – Reddish brown		Neat Cement
			5.4					(2.5YR4/4); 70% nonplastic fines; 30% fine to coarse angular to subrounded sand. Hard to very hard, dry, strong reaction to HCI. SILT WITH SAND – Reddish brown (5YR5/4); 85% nonplastic fines; 15% fin	e	8.25" Borehole
35 —			11.6					sand. Hard, strong reaction to HCl, dry.		
_			56.6	ML						4" SCH40PVC
40 —			11.6							Blank Casing
_			11.1					SANDY SILT – Reddish brown (5YR5/4 60% nonplastic fines; 35% fine to coarse subangular to subrounded sand; 5% fine subangular gravel to 3/8". Firm, moist to 43, wet below, weak to locally strong); Ə Ə	14 bls
45 —		<0.25	5.4	NAL				reaction to HCI. Encounter groundwater at 44'.		
				IVIL		1		HARGIS+ASSOCIATES, INC.	1	⊭ Page 2 of 10

MON DATE D	IIT RIL	OR .LED : 4	WEL /30/18 -	L: 5/8/1	B 8	BN	///	/-11D DATE COMPLETED: <i>5/9/2018</i>	PROJECT: ECF PROJECT NUM	9 40th St and Osborn MBER: 1137
DRILLIN LOGGE	IG (D B	COMPA BY: <i>M W</i>	NY:Cas iese	scade	e E	Drii	lling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LOCATION: 30	013 N 38th St, noenix, AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG	: 55-921) BY: <i>B.</i> ; METH e3000	1213 Waggle OD: hyd	e Iropun	ncl	h		TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	TOTAL BOREHOLE DEPTH: 241 ft blsLAND SURFACE ELEV: 1178.54COMMENTS:SCREEN INTERVAL: 151 - 211PCE = tetrachloroetherDEPTH TO WATER: 44 ft blsft bls = feet below land	
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs		GRAPHIC	LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL C	CONSTRUCTION DIAGRAM
50 — 50 — 55 —			8.9 7.1 8.6 6.2	ML				SANDY SILT cont. SILT WITH SAND – Reddish brown (5YR5/4); 85% nonplastic fines; 15% fin sand. Hard, moist, strong reaction to HC	e SI.	4" SCH40PVC Blank Casing
60 —			3.6 6.4	ML				GRAVELLY SILT WITH SAND – Reddis brown (5YR5/4); 70% non to low plastic fines; 20% fine angular to subangular gravel to ½"; 10% fine to coarse subangular sand. Hard, strong reaction HCI, moist.	h to	Neat Cement
		<0.25	4.1 2.0 	ML				SILT WITH SAND – Reddish brown (5YR5/4); 80% nonplastic fines; 15% fin to coarse subangular sand; 5% fine angular gravel to ½". Moist, hard, strong reaction to HCI. SILT – Reddish brown (5YR5/4); 95% nonplastic fines; 5% fine, less medium subrounded sand. Hard, wet, moderate reaction to HCI.	e	8.25" Borehole
70 —				ML				SANDY SILT – Reddish brown (5YR5/4 70% nonplastic fines; 30% fine, less medium subrounded sand; trace fine subangular gravel to 3/4". Firm, no reaction to HCl to 70', hard, weak reaction below, wet.);	
								HARGIS+ASSOCIATES, INC.		Page 3 of 10

MON DATE D	RIL	'OR LED : 4	WEL /30/18 -	L: 5/8/1	B 8	M١	W	/-11D DATE COMPLETED: 5/9/2018	PF PF	ROJECT: ECP 40th St and Osborn ROJECT NUMBER: 1137
	IG (D B	COMPA	NY:Cas iese	scade	e D	rillir	ng	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LO	CATION: 3013 N 38th St, Phoenix, AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG	55-921 9 BY: <i>B.</i> 9 METH e3000	213 Waggle OD: hyo	e Iropun	nch			TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	C(P(ft	DMMENTS: CE = tetrachloroethene bls = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs		GKAPHIC I OG		LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM
								SANDY SILT cont.		
75 —										
										Neat Cement
 80				ML						
_										
		<0.25								
_			24.4							4" SCH40PVC Blank Casing
_			30.0					SILTY SAND – Reddish brown (5YR5/4	1);	
90 —			26.4	SM				rounded sand; 35% nonplastic fines; 5% fine subrounded gravel to 3/8". Wet, loose, no reaction to HCl.	6	
			31.6					SILT WITH SAND – Reddish brown (5YR5/4); 85% nonplastic fines; 15% fir	ne	8.25" Borehole
95 —			40.5	ML				to medium, less coarse subrounded to rounded sand. Firm, wet, weak reaction to HCI, hard silt stringers at 99', strong reaction.	1	
					<u></u>	1111111		HARGIS+ASSOCIATES, INC.		Page 4 of 10

MON DATE D	RIL		WEL /30/18 -	L: 5/8/1	BMN 8	/-11D DATE COMPLETED: 5/9/2018	PROJECT: ECI PROJECT NU	P 40th St and Osborn MBER: 1137
	IG (D F		NY:Cas	scade	Drilling	DRILLING METHOD: Sonic	LOCATION: 30	013 N 38th St, hoenix. AZ
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG	: <i>55-921</i>) BY: <i>B.</i>) METH e3000	213 Waggle OD: hyd	e Iropun	nch	TOTAL BOREHOLE DEPTH: 241 ft blsCOMMENTS:LAND SURFACE ELEV: 1178.54PCE = tetrachloroetheneSCREEN INTERVAL: 151 - 211ft bls = feet below land sDEPTH TO WATER: 44 ft blsPCE = tetrachloroethene		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL (CONSTRUCTION DIAGRAM
			36.7	ML		SILT WITH SAND cont.		
100 —			36.9	ML		SANDY SILT – Reddish brown (5YR5/4 55% nonplastic fines; 45% fine to coars subrounded to rounded sand. Wet, no reaction to HCI, soft.); e	Neat Cement
		<0.25	36.1	SM ML		SILTY SAND – Reddish brown (5YR4/4 55% fine to coarse subrounded to rounded sand; 40% nonplastic fines; 5% fine subrounded gravel to ½". Wet, loose no reaction to HCI.); e, /	
105 —			92.1			nonplastic fines; 30% fine to coarse subrounded sand; trace fine subrounded gravel to ¼".	d	5 5 5 5 5 5 5 5
_				ML		SILT WITH SAND – Same as above. Loose, wet, no reaction to HCI.		
_			85.6	ML		SANDY SILT – Reddish brown (5YR4/4 Same as above.);	4" SCH40PVC Blank Casing
			85.5					
			81.3	SM		SILTY SAND – Reddish brown (5YR4/4 55% fine to coarse angular to subrounded granitic sand; 35% nonplastic fines; 10% fine rounded grav to ½". Loose, no reaction to HCl, wet.); el	
115 —			223.0	ML		brown (2.5YR4/4); 50% nonplastic fines 40% fine to coarse angular to subrounded sand; 10% fine angular gravel to ¼". Hard, wet, no to weak	-	8.25" Borehole
 120			214.0	М		\reaction to HCl. SILT WITH SAND – Reddish brown (5YR4/4); 85% nonplastic fines; 25% fin to coarse subrounded sand; trace fine subrounded gravel to ½". Wet, hard to very hard, weak reaction to HCl, contain well cemented siltstone stringers.	e	
				_ IVI∟	2	HARGIS+ASSOCIATES, INC.	• K	Page 5 of 10

MON DATE DE	IT Rill		WEL /30/18 -	L: 5/8/1	B 8	ßN	11	/-11D DATE COMPLETED: 5/9/2018	PR PR	ROJECT: ECP 40th St and Osborn ROJECT NUMBER: 1137
	G C D B	COMPA Y: <i>M W</i>	NY:Cas iese	scade	E	Dril	ling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8.25/6.125	LO	OCATION: 3013 N 38th St, Phoenix, AZ
ADWR N REVIEW SAMPLIN PID: Min	lo.: 'ED NG irae	55-921 BY: <i>B.</i> METH 3000	213 Waggle OD: hyo	e Iropun	ncl	ל		TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	CC PC ft I	OMMENTS: CE = tetrachloroethene bls = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS		GRAPHIC	DOJ	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM
		<0.25	224.8 18.2 16.6 51.8 53.8 50.2	ML				SILT WITH SAND cont. SANDY SILT – Reddish brown (5YR4/4 55% nonplastic fines; 40% fine to coars subrounded sand; 5% fine subangular gravel to ½". Soft, wet, no reaction to H SILT WITH SAND – Reddish brown (5YR5/4); Same as above with 80% nonplastic fines and 20% fine, less medium subrounded sand	l); ;e Cl.	8.25" Borehole 4" SCH40PVC Blank Casing
135 — — — —			21.4							Neat
 140			14.7	ML						Pontosito
		<0.25	12.7							Seal
140	HARGIS+ASSOCIATES, INC. Page 6 of 10									

MON DATE D	RIL		WEL	L: 5/8/1	BM\ 8	V-11DPROJECT: ECP 40th St and OsbornDATE COMPLETED: 5/9/2018PROJECT NUMBER: 1137
	IG (D B	COMPA	NY:Cas iese	scade	Drillin	g DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125
ADWR N REVIEW SAMPLI PID: Mir	No.: /ED NG	55-921 BY: <i>B.</i> METH e3000	1213 Waggle OD: hyo	e Iropun	nch	TOTAL BOREHOLE DEPTH: 241 ft blsLAND SURFACE ELEV: 1178.54COMMENTS:SCREEN INTERVAL: 151 - 211PCE = tetrachloroetheneDEPTH TO WATER: 44 ft blsft bls = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL WELL CONSTRUCTION DIAGRAM
_			77.5	ML		SILT WITH SAND cont.
			82.0			SANDY SILT – Reddish brown (2.5YR4/4); 65% nonplastic fines; 35% fine, less medium, trace coarse subrounded sand. Firm with hard silt
150 — —			89.6	ML		stringers, wet, no to weak reaction to HCI.
			96.1			SILTY SAND – Dark reddish brown
155 — —			117.3	SM ML		4" SCH40PVC subrounded to rounded sand; 25% nonplastic fines; 10% fine rounded gravel to ½". Loose, wet, no reaction to HCI. SILT – Reddish brown (5YR5/4); 80% nonplastic fines; 20% fine to medium subrounded sand. Soft to firm, wet
 160			116.0			moderate to strong reaction to HCl. SILTY SAND – Dusky red (10R3/4); 70% fine to coarse rounded sand; 20% nonplastic fines; 10% fine rounded gravel to ½". Loose, wet, no reaction to HCl, lost core 158 to160'.
			3.0	5111		#10-20 Sand Filter Pack
		<0.25	5.0	ML		SILT – Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to coarse angular to subrounded sand. Hard, dry to
			4.5	SM/ ML		164, wet below, strong reaction to HCI. SILTY SAND/SANDY SILT WITH GRAVEL – Reddish brown (5YR4/4); 50% nonplastic fines; 35% fine to coarse subangular to subrounded sand; 15% fine angular to subangular. trace coarse
			4.1	SM		subangular gravel to 2". Wet, hard, no reaction to HCI. SILTY SAND WITH GRAVEL – Dark
						HARGIS+ASSOCIATES, INC. Page 7 of 10

		WEL	_L:	/-11D	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137		
	G COMP	PANY:Ca Wiese	scade	e Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LO	CATION: 3013 N 38th St, Phoenix, AZ
ADWR N REVIEW SAMPLI PID: Min	lo.: <i>55-9</i> ED BY: NG MET irae3000	21213 B. Waggl HOD: hyd	e Iropur	nch	TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	CC PC ft I	DMMENTS: CE = tetrachloroethene bls = feet below land surface
DEPTH (feet)	HINDER HI	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM
170 —		6.3			reddish brown (2.5YR3/6); 45% fine to coarse subrounded to rounded sand; 40% nonplastic fines; 15% fine angular, trace coarse subrounded gravel to 1½".	,	
		6.4			Firm, wet, no reaction to HCI.		
175 —		44.8	SM				
_		49.9					#12-20 Sand
180 — — —		53.0					
	<0.2	50.4	SM/		SILTY SAND/SANDY SILT WITH GRAVEL – Reddish brown (2.5YR4/4); 50% nonplastic fines; 35% fine to coars	se	4" SCH40PVC 0.020" Screen
185 — —		96.6	ML		subangular to subrounded sand; 15% fine angular to subrounded gravel to 5/8 Firm, wet, weak reaction to HCI.	8". sh	
		85.4			brown (2.5YR4/4); 55% nonplastic fines 30% fine angular, less coarse subrounded gravel to 2¾"; 15% fine to coarse subangular to subrounded sand. Wet, firm to locally hard, weak reaction HCI.	s; to	
190 — —		83.4					
		82.5 6.0					
			ML		HARGIS+ASSOCIATES, INC.		Page 8 of 10

MON DATE D		OR .LED : 4	WEL	L: 5/8/1	BMV 8	/-11D DATE COMPLETED: <i>5/9/2018</i>	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137		
			NY:Ca:	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8 25 / 6 125	LOCATION: 3013 N 38th St, Phoenix, AZ		
ADWR I REVIEV SAMPL PID: Mit	No.: VEC ING nira	55-921 BY: <i>B.</i> METH e3000	213 Waggle OD: hyo	e Iropun	ch	TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL CONSTRUCTION DIAGRAM		
195 — 	-		1.6	ML		GRAVELLY SILT WITH SAND cont.	8.25" Borehole		
_	-		2.2				#12.20 Sand		
200 —	-		1.5				Filter Pack		
-		<0.25	4.0			SANDY SILT – Reddish brown (5YR5/4 60% nonplastic fines; 40% fine to coars subangular to subrounded sand; trace fine subrounded gravel to 3/8". Soft, we); e4" SCH40PVC 0.020" Screen		
			2.4	ML		weak reaction to HCI.			
_			1.3			SILTY SAND/SANDY SILT WITH GRAVEL – Reddish brown (5YR4/4);			
210 —	-		2.5	SM/ ML		50% honplastic fines; 35% fine to coars angular to subrounded sand; 15% fine subangular, trace coarse rounded grav to 2".	e Centralizer el PVC Well Cap		
215			5.5 7.6	SM		SILTY SAND WITH GRAVEL – Reddish brown (5YR4/4); 50% fine to coarse subangular to subrounded sand; 25% nonplastic fines; 25% fine, less coarse subangular to rounded gravel to 3". We loose, no reaction to HCl.	t,		
	-			ML		SANDY SILT – Reddish brown (5YR4/4 55% nonplastic fines; 40% fine to coars subangular to subrounded sand; 5% fin angular to subrounded gravel to ¾". Fin); e e m, #12-20 Sand Filter Pack		
						HARGIS+ASSOCIATES, INC.	Page 9 of 10		

MON DATE D			WEL	PROJECT: ECP 40th St and Osborn PROJECT NUMBER: 1137							
DRILLIN LOGGE	NG D E	COMPA BY: <i>MW</i>	NY:Ca iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.25 / 6.125	LC	DCATION: 3013 N 38th St, Phoenix, AZ			
ADWR REVIEV SAMPL PID: Mi	No.: VEC ING nira	: <i>55-921</i>) BY: <i>B.</i>) METH e3000	1213 Waggle OD: hyd	e Iropur	ich	TOTAL BOREHOLE DEPTH: 241 ft bls LAND SURFACE ELEV: 1178.54 SCREEN INTERVAL: 151 - 211 DEPTH TO WATER: 44 ft bls	C ⁱ P ft	OMMENTS: CE = tetrachloroethene bls = feet below land surface			
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL CONSTRUCTION DIAGRAM			
-	-		6.9	ML		wet, weak reaction to HCI. SILTY SAND WITH GRAVEL – Same a	as	XX			
220 —	-		2.4			above with coarse rounded gravel to 2" Wet, soft to locally firm, no to weak reaction to HCI, dropped core 228 to 23	33'.	Bentonite			
_		<0.25	3.1					8.25" Borehole			
225 —			3.3	SM				XXXXXX			
_	-		5.1	•				XXXXX			
230 —	-							XXXXXX			
-								6.125" Borehole			
			1.3			UPPER TEMPE BEDS – Very hard, we cemented silt and fine sand, abundant mica.) 	XXXXX			
_	-			Ttbu				X X Bentonite ∴ Slough			
240 —								Lost core bit			
	HARGIS+ASSOCIATES, INC. Page 10 of 10										

Project	Numbe	er: <u>14-2018-2039</u>		D	ate: <u>10-</u>	23-18 to 10-31-18 Page 1 of 12
Boring	Locatio	n: BMW	/-14D			Logged By: Lauren Bender
Elevati	on and	Datum: 1138	1			Project Manager: James Clarke
Drilling	J Start D	ate: 10-23	3-18			Drilling Contractor: Cascade Drilling LP
Drilling	Compl	etion Date: 10-31	I-18			Drilling Method:
Total D	epth (ft	bgs): 300				Drilling Equipment: Sonic
Depth 1	to Wate	r (ft bgs): 90.6'				Sampling Method: Hydropunch
epth Below round Surface set)	B Sample ID B B S S S S S S S S S S S S S S S S S		ID Meter eading (ppm) low Counts nified Soil lassification ystem		nified Soil assification /stem	Soil Classification Description and Notes
00£	۵٦		ਰੁਣ	BI	500	
5					ML	0 to 2" Asphalt SILT WITH SAND, 75-80% fines, nonplastic, reddish-brown, 15% medium to coarse grained sand, <5% small gravel, dry
10					ML	SILT WITH GRAVEL, 75% nonplastic fines, light to reddish-brown, dry, loose
						note: very compacted from 14' to 15'
20					ML	SILT WITH SAND & GRAVEL, 65-80% fines, nonplastic, reddish-brown, loose, dry, medium to large angular gravel
20					ML	SANDY SILT, 65% nonplastic fines, reddish-brown, loose, dry, 25-30% medium to coarse grained sand, 5-10% coarse gravel
25						



Boring	١D٠	BMW-14D
	ID.	

Boring Ievati Prilling Prilling Total D Potal D Popth	Locatio ion and Start I Compl Depth (ft to Wate	BMW Datum: 1138 Date: 10-23 letion Date: 10-3 bgs): 300 r (ft bgs): 90.6'	/-14D ' 3-18 1-18			Logged By: Lauren Bender Project Manager: James Clarke Drilling Contractor: Cascade Drilling LP Drilling Method: Drilling Equipment: Sonic Sampling Method: Hydropunch			
Ground Surface (feet)	Graphical Log	Graphical Log PID Meter Reading (ppm) Blow Counts Blow Counts System		Unified Soil Classification System	Soil Classification, Description and Notes				
30					ML	SANDY SILT, continued			
35					ML	SILT WITH GRAVEL, 80% fines, nonplastic, very compact, reddish-brown, dry, coarse angular gravel, dry note: loose from 25' to 37'			
					ML	SILTY SAND WITH GRAVEL, 40-50% medium to coarse, light brown sand, 25-30% nonplastic fines, reddish-brown, 25% coarse gravel & few cobbles, loose, dry			
40						HARDPAN/CALICHE, very hard, compact layer, white caliche, matrix with coarse sand & angular fragments			
45					ML GM	SILT, very compact, light reddish-brown, dry SILTY GRAVEL WITH SAND, fine to coarse grained, angular gravel, reddish-brown, fines with poorly graded, medium sand, loose, dry			
					ML	SILT, highly compact nodules, reddish-brown, dry			

Project	Νι	um	nbei	r: <u>14-2018-2039</u>		Da	ate: <u>10-</u>	23-18 to 10-31-18 Page 3 of 12
Boring	L	oca	atio	n: BMW	-14D			Logged By: Lauren Bender
Elevati	ion	ar	nd E	Datum: 1138'	10			Project Manager: James Clarke
Drilling	35	tar	t Da	tion Date: 10-23	10			Drilling Contractor: Cascade Drilling LP
Total D)en	on	fft b	ngs): 300	-10			Drilling Equipment: Sonic
Depth t	to	Wa	ater	(ft bgs): 90.6'				Sampling Method: Hydropunch
Depth Below Ground Surface (feet)		Graphical	LUG	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System	Soil Classification, Description and Notes
50		П					N/I	SILT continued
							IVIL	SILI, continued
							ML	SANDY SILT WITH GRAVEL, 65-70% nonplastic, reddish-brown fines, 20% subangular coarse sand, 20% angular to subangular, coarse grained
55								
60								
							ML	SILT WITH GRAVEL, 70-80% dark reddish-brown, nonplastic fines, 20-30% subangular to angular coarse gravel, caliche (white) nodules included
65								
70								
75 -								



Project	oject Number: <u>14-2018-2039</u> Date: <u>10-23-18 to 10-31-18</u> Page 4 of 12											
Boring	g l	_00	ati	on: BMW	/-14D			Logged By: Lauren Bender				
Elevat	tio	n a	anc	Datum: 1138'				Project Manager: James Clarke				
Drilling	g	Sta	ırt	Date: 10-23	3-18			Drilling Contractor: Cascade Drilling LP				
Drilling	g	Co	mp	letion Date: 10-31	I-18			Drilling Method:				
Total L	De	pti	n (1	t bgs): 300				Drilling Equipment: Sonic				
Depth) VV	au	er (it bgs): 90.6				Samping Method: Hydropunch				
Depth Below Ground Surface (feet)	og Graphical og ID Meter Slow Counts Slow Counts Slow Counts Slow Soil Slow Counts Slow Co		Unified Soil Classification System	Soil Classification, Description and Notes								
75		Π	Π				MI	SILT WITH GRAVEL continued				
80								note: moist at 85'				
90 ⊻							ML	SILT, very compact nodules, dark reddish-brown, dry, trace calcite veination/marbling in nodules				
95							ML	 SILT, extremely compact, hard, dark reddish-brown fines with black band of shale from 93' to 94', dry SILT, dark reddish-brown fines, compact, but moldable, cohesive, medium plasticity 				
100							ML	SILT, water sample collected from 100' to 101', very compact silt with rounded, polished medium gravel, trace gray to green fine sand, dry				



Project	Numbe	r: <u>14-2018-2039</u>)	D	ate: <u>10-</u>	23-18 to 10-31-18 Page 5 of 12
Boring	Locatio	n: BMW	/-14D			Logged By: Lauren Bender
Elevati	on and D	Datum: 1138	' . 40			Project Manager: James Clarke
Drilling	g Start Da 1 Comple	ate: 10-23	3-18 1-18			Drilling Method:
Total D)epth (ft l	bas): 300	1-10			Drilling Equipment: Sonic
Depth	to Water	(ft bgs): 90.6'				Sampling Method: Hydropunch
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System	Soil Classification, Description and Notes
100		BMW-14D-100			ML	GRAVELLY SILT, very cohesive, tan to brown silt (80%), 20% rounded, polished large gravel to small cobbles, moist
						HARDPAN/CALICHE, 5% thick layer of hardpan, white caliche with rounded to subrounded medium to large gravel matrix
					ML	SANDY SILT WITH GRAVEL, 60% fines, reddish-brown, 30% poorly
					ML	graded fine sand, 10% rounded to subrounded polished large gravel, wet
						gravel, dark reddish-brown, dry
105					SP	POORLY GRADED SAND WITH GRAVEL, trace fines, little cobbles,
						polished & rounded
110						
		BMW-14D-110				
115					CW/	WELL CRADED SAND WITH CRAVEL 65% dark raddich brown madium
					500	to coarse grained sand, 30% coarse grained gravel, 5% fines, light grav.
	•••••					moist, loose, rew cobbles (rounded/river rocks)
	· · · · · · · · · · · · · · · · · · ·					
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120	•••••	<u> </u>				
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	• • • • • • • • • • • • • • • • • • •	<u> </u>				
125	<u>^`^`^^</u> ^^	1	I			



Project	roject Number: 14-2018-2039 Date: 10-23-18 to 10-31-18 Page 6 of 12											
Boring	Locatio	n: BMW	/-14D			Logged By: Lauren Bender						
Elevati	ion and [Datum: 1138	l			Project Manager: James Clarke						
Drilling	g Start Da	ate: 10-23	3-18			Drilling Contractor: Cascade Drilling LP						
Drilling	g Comple	tion Date: 10-31	1-18			Drilling Method:						
I otal L	bepth (ft i	bgs): 300				Drilling Equipment: Sonic						
Depth	to water	(it bys). 90.6										
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System	Soil Classification, Description and Notes						
125	/////.	BMW-14D-125			CL	CLAY, reddish-brown, cohesive, medium plasticity, moist, homogeneous,						
						few cobbles, coarse grained sand, rounded						
130												
140												
						CLAY, conesive medium to high plasticity, reddish-brown, fines, trace coarse grained sand (rounded)						
145		BMW-14D-145										



Project	Number	r: <u>14-2018-2039</u>)	D	ate: _ 10-	23-18 to 10-31-18 Page 7 of 12
Boring	Location	n: BMW	/-14D			Logged By: Lauren Bender
Elevat	ion and D	Datum: 1138				Project Manager: James Clarke
Drilling	g Start Da	ite: 10-23	3-18			Drilling Contractor: Cascade Drilling LP
Drilling	g Comple	tion Date: 10-31	1-18			Drilling Method:
I otal L	bepth (ft t	ogs): 300				Drilling Equipment: Sonic
Depth	to water	(it bgs). 90.6				Samping weulou. Hydropunch
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System	Soil Classification, Description and Notes
150	·/ /. /.				SC	CLAYEY SAND 75% well graded sand subangular 15% fines cobesive
155					SW	WELL GRADED SAND WITH SILT, 85-90% well graded fine to coarse grained, subangular sand, reddish-brown & many colors/stones (river sand),
160						10% silt, nonplastic, wet
165		BMW-14D-165				CLAY, medium brown, very compact, medium to high plasticity, moist
170					SW	WELL GRADED SAND WITH CLAY, brown fine to coarse sand, wet, 10% fines





Project	Numbe	r: <u>14-2018-2039</u>		D	ate: 10-	23-18 to 10-31-18	Page 9 of 12
Boring	Location	n: BMW	/-14D			Logged By:	Lauren Bender
Elevati	ion and D	Datum: 1138	'			Project Manager:	James Clarke
Drilling	g Start Da	tien Dete: 10-23	3-18			Drilling Contractor:	Cascade Drilling LP
	g Comple	200 200	1-18			Drilling Method:	 Sonio
Depth	to Water	(ft bas): 90.6'				Sampling Method:	Hydropunch
		(- Hydropanon
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System		Soil Classification, Description and Notes
200	1.1.1.				SC	CLAYEY SAND WI	TH GRAVEL. 60% well graded sand, 30% cohesive.
205		BMW-14D-205				CLAYEY SAND Wi medium to high plas grained, subangula	IH GRAVEL , 60% well graded sand, 30% cohesive, sticity, fat clay, reddish-brown, moist, 10-15% fine to coarse r gravel
210							
215							
220					SC	CLAYEY SAND WI 15-20% fine grained high plasticity, wet	TH GRAVEL , 60-70% coarse grained sand, subangular, d gravel, subangular, 10-20% fines, cohesive, medium to
					CL	SANDY CLAY, 75-	80% fines, brown, medium plasticity, cohesive, compact.
						20% coarse grained	d sand, <5% fine gravel, moist, wet at 233'
225	'/////						_



					23-18 to 10-31-18 Page 10 of 12				
g Locatio	n: BMW	/-14D			Logged By: Lauren Bender				
tion and D	Datum: 1138				Project Manager: James Clarke				
g Start Da	ate: 10-23	3-18			Drilling Contractor: Cascade Drilling LP				
g Comple	tion Date: 10-31	1-18			Drilling Method:				
to Water	(ft bas): 00 6'				Sampling Method: Hydropupch				
	(it bgs). 90.0				Camping method. Trydropanch				
Graphical Log	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System	Soil Classification, Description and Notes				
1111	BMW-14D-225			CI	SANDY CLAY continued				
	BMW-14D-225				SANDY CLAY, continued				
				SC	CLAYEY SAND WITH GRAVEL , 40-50% coarse grained sand, subangular, 25-30% clay, brown, cohesive, medium plasticity, 20-25% fine to medium				
	BMW-14D-245				grained gravel, subangular, moist				
	g Location ig Start Da ig Comple Depth (ft I is Co	g Location: Driving ion and Datum: 1138 ig Start Date: 10-23 ig Completion Date: 10-37 Depth (ft bgs): 300 io Water (ft bgs): 90.6' in to Water BMW-14D-225 in the second sec	g Location: BMW-14D ion and Datum: 1138' ig Start Date: 10-23-18 ig Completion Date: 10-31-18 Depth (ft bgs): 300 ito Water (ft bgs): 90.6' Image: Sample ID Image: Sample ID Image: Sample ID Image: Sample ID <td< td=""><td>g Location: DMW-14D ion and Datum: 1138' g Start Date: 10-23-18 g Completion Date: 10-31-18 Depth (ft bgs): 300 i to Water (ft bgs): 90.6' Image: Sample ID Image: Sample ID Image: Sample ID Image: Sample ID</td><td>BIOWE 1410 tion and Datum: 1138' ig Completion Date: 10-23-18 Depth (ft bgs): 300 to Water (ft bgs): 90.6' Image: Sample ID Image: Sample ID Image: Sample I</td></td<>	g Location: DMW-14D ion and Datum: 1138' g Start Date: 10-23-18 g Completion Date: 10-31-18 Depth (ft bgs): 300 i to Water (ft bgs): 90.6' Image: Sample ID Image: Sample ID Image: Sample ID Image: Sample ID	BIOWE 1410 tion and Datum: 1138' ig Completion Date: 10-23-18 Depth (ft bgs): 300 to Water (ft bgs): 90.6' Image: Sample ID Image: Sample ID Image: Sample I				



Project	Number	r: <u>14-2018-203</u> 9)	D	ate: <u>10-</u>	23-18 to 10-31-18	I	Page	11 of	12
Boring	Locatior	n: BMW	/-14D			Logged By:	Lauren Bender			
Elevat	ion and D	Datum: 1138				Project Manager:	James Clarke			
Drilling	g Start Da	tion Date: 10-23	3-18			Drilling Contractor:	Cascade Drilling LP			
Total C)onth (ft b	ans). 300	1-18			Drilling Method:	Sonic			
Depth	to Water	(ft bas): 90.6'				Sampling Method:	Hydropunch			
		(Tyaropanon			
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	PID Meter Reading (ppm)	Blow Counts	Unified Soil Classification System		Soil Classification, Description and Notes			
250	111				SC	CLAYEY SAND WI	TH GRAVEL. continued			
							······································			
255										
260										
265										
		BIVIVV-14D-205								
						1				
270										
210										
275	1. 1 /. '		I	1	I	1				=
							W)(





Date: 15-Nov-18-10:47

Project	Nar	ne:	(ECP) 40th	n Street &	Osborn F	Road WQ/	ARF	Boring ID: BMW-16D				
Project	Nur	nho	• 14-2018-2	039 03		ato: 04-	11-2019	2011.g 121	Page 1 of 12			
Boring	I Loc	atio	n:	BMW-16D	D		Logged By:	Issac Torres				
Elevati	ion a	nd E	Datum:	1131.69' (1	NAVD88)		Project Manager:	James Clarke				
Drilling	y Sta	rt Da	ite: (04-11-2019	9		Drilling Contractor:	Cascade Drilling LP				
Drilling	g Col	mple	tion Date: (04-16-2019	9		Drilling Method:	Sonic				
Total D	Depth	n (ft l	ogs):	290			Drilling Equipment:					
Depth 1	to W	ater	(ft bgs):	32.95			Sampling Method:					
Depth Below Ground Surface (feet)	Graphical	Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	otion and Notes			
0						ML	SILT WITH SAND, subangular sand, 5	80% fines, 15% fine to c 5% fine to coarse grained	coarse grained, subrounded to , surounded to subangular gravel,			
							nonplastic, reddish	-brown, slightly moist, loc	ose, no odor, no stains			
							note: moderately to of clay	highly effervecent, grad	es to blocky soil structure, lenses			
5												
						note: increase in pi	asticity					
10												
15												
13												
							-					
20												
					1							
							-					
							1					
				-	1		1					
I I							4					

ML

25

SANDY SILT WITH GRAVEL

wood.

Project	Name	(ECP) 401	th Street &	Osborn F	Road WQ	ARF		
D		14 2019 1	2020.02		04	11 2010	Boring ID:	Page 2 of 12
Project	NUMD	er:	2039.03	D	ate:4-	11-2019		
Boring	Locati	on: Datum:	BMW-16D			Logged By: Project Manager:	Issac Torres	
Drilling	Start I	Date:	04-11-2019	<u>140000)</u> 1		Drilling Contractor	Cascade Drilling I P	
Drilling	J Comp	letion Date:	04-16-2019	- 		Drilling Method:	Sonic	
Total D	epth (f	t bgs):	290			Drilling Equipment:		
Depth 1	to Wate	er (ft bgs):	82.95			Sampling Method:		
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descri	ption and Notes
25					ML	SANDY SILT WITH	HGRAVEL, 60% fines, 2	5% fine to coarse grained,
						subrounded to sub	pangular sand, 15% fine t	o coarse grained, surounded to
						subangular gravel,	, nonplastic, brown, slight	ly moist, loose, no odor, no stains
						note: lenses of cla	у	
30								
						note: increase in fi	nes & some white stainin	g
35								
						note: caliche prese	ent	
						note: lenses of cer	nentation	
40								
						1		
						1		
					ML	SILT WITH SAND,	75% tines, 15% fine to 0 10% fine to coarse grains	coarse grained, subrounded to
45						gravel, reddish-bro	own to light brown, slightly	y moist to moist, no odor
						noto: tropp black	oing (1mm thigk 7mm la	ag) in computed longer
						note. trace black V		ig) in cemenieu ienses
			_			note: predominant	lenses of siltstone & cali	che
						-		
						1		
50								

W	Ό	0	d.
• •			-

Project Name:	(ECP) 40th Street & Osborn Road WQA	٩RF

Project	Nam	1 e: .	(ECP) 40th	Street &	Osborn I	Road WQ	ARF	Boring ID:	BMW-16D	
Project	Nun	nber	: 14-2018-20	39.03	D	ate:	11-2019		Page	e 3 of 12
Boring	Loca	atior	: В	MW-16D			Logged By:	Issac Torres		
Elevati	ion a	nd D	atum: 1	131.69' (1	NAVD88)		Project Manager:	James Clarke		
Drilling	g Stai	t Da	te: 04	4-11-2019	9		Drilling Contractor:	Cascade Drilling LP		
Drilling	ng Completion Date: 04-16-2019 Depth (ft bgs): 290						Drilling Method:	Sonic		
Total D	otal Depth (ft bgs): 290						Drilling Equipment:			
Depth	Depth to Water (ft bgs): 82.95						Sampling Method:			
Depth Below Ground Surface (feet)	Graphical	год	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descripti	ion and Notes	
50		\mathbf{m}				ML	SILT WITH SAND.	continued		
							, ,	oontindod		
55										
60										
		111					1			

60					
			 -		
65					
			 -		
70					
				ML	SILT WITH CLAY
75	Ш		1	I	



Project	Name:	(ECP) 40	th Street &	Osborn F	Road WQ	ARF		
						44.0040	Boring ID:	
Project	Numbe	er: <u>14-2018-</u>	2039.03	D	ate: <u>04-</u>	11-2019		
Boring	Locatio	n:	BMW-16D			Logged By:	Issac Torres	
Elevati	on and	Datum:	1131.69' (N	VAVD88)		Project Manager:	James Clarke	
Drilling	J Start D	ate:	04-11-2019	9		Drilling Contractor:	Cascade Drilling LP	
Drilling	Comple	etion Date:	04-16-2019	9		Drilling Method:	Sonic	
Total D	epth (ft	bgs):	290			Drilling Equipment:		
Depth 1	to Water	· (ft bgs):	82.95			Sampling Method:		
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descript	ion and Notes
75							050/ 5 400/ 5 4	
					ML	SILT WITH CLAY, subangular sand, gravel, medium pla hard, white stainin note: caliche nodu	85% fines, 10% fine to co 5% fine to coarse grained, asticity, brown to light brow g (caliche), trace black veir les & laminated clay/silt ler	arse grained, subrounded to subrounded to subangular, n, moist to slightly moist, loose to ns, no odors nses present
80								
-						note: decrease in o	caliche with no HCl reaction	n from 82'6" to 83'6"
85 90						note: cementation	increases, increased lense	es of siltstone from 83'6" to 95'
95 -					CL	CLAY WITH SANE subangular sand, a no caliche, mediur), 75% fines, 20% fine to c 5% fine to coarse grained, n to high plasticity, reddish	oarse grained, subrounded to subrounded to subangular gravel, -brown, moist, very firm, no odor,
I	//////					10 310113		

note: lense of gravel from 96' to 97'



100

Project	Name:	(ECP) 40th	n Street &	Osborn F	Road WQ/	ARF	Boring ID:	BMW-16D
Proiect	Numbe	r: 14-2018-20	039.03	D	ate: ⁰⁴⁻	11-2019		Page 5 of 12
Boring Elevati Drilling	Location ion and E Start Da	n: E Datum: ^ ate: (3MW-16D 1131.69' (N 04-11-2019			Logged By: Project Manager: Drilling Contractor:	lssac Torres James Clarke Cascade Drilling LP	
Drilling Total D Depth	g Comple Depth (ft I to Water	tion Date: (ogs): 2 (ft bgs): 8	04-16-2019 290 32.95	9		Drilling Method: Drilling Equipment: Sampling Method:	Sonic 	
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	tion and Notes
100 -					CL	CLAY WITH SAND), continued se in fines	
105								
110					SM	SILTY GRAVEL W subangular gravel, sand, 20% fines, n soft to loose, no oc note: rare cobble lo	ITH SAND, 45% fine to c , 35% fine to coarse graine ionplastic, dark brown to r dors, no stains enses (<10cm) present	coarse grained, subrounded to ed, subrounded to subangular eddish-brown, moist to wet, very
115						note: slight increas	se in sand	
120					SM GM	SILTY SAND, 55% 40% fines, 5% fine nonplastic, reddish note: rare cobbles SILTY GRAVEL W subangular gravel, sand 20% fines	6 fine to coarse grained, s to coarse grained, subrou h-brown, very soft, wet, no (10cm) present TTH SAND, 50% fine to co , 30% fine to coarse graine ome cobbles, nonplastic to	ubrounded to subangular sand, unded to subangular gravel, odor, no stains parse grained, subrounded to ed, subrounded to subangular o low plasticity, brown to
125						reddish-brown, we	t (highly saturated), dense	e, no odor, no stains



Project	Name: _	(ECP) 40th	Street &	Osborn I	Road WQ	ARF	Boring ID: BMW-16D			
Ducient	- -	. 1/-2018-20	130 03		-t 04	-11-2010	Boring ID.	Page 6 of 12		
Project Boring	Location	: 14-2018-20 : E	39.03 3MW-16D	D	ate:4-	Logged By:	Issac Torres			
Elevat	ion and Da	atum: 1	131.69' (1	NAVD88)		Project Manager:	James Clarke			
Drilling	g Start Dat	te: C	4-11-201	9		Drilling Contractor:	Cascade Drilling LP			
Drilling	g Complet	cion Date: ()	04-16-2019	9		Drilling Method:	Sonic			
Depth	to Water ((11 bas): 2	<u>.90</u> 32.95			Sampling Method:				
						J J J J J J J J J J				
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	tion and Notes		
125	• •				GM		I SAND , continued			
]				
								· · · · · · · · · · · · · · · · · · ·		
	//////. -					Subangular sand	, oo% lines, 10% line to 5% fine to coarse grained	coarse grained, subrounded to subrounded to subrounded to subandular dravel		
						high plasticity, red	dish-brown to light brown,	moist to slightly moist, no odor,		
						white staining (cali	che)			
						-				
130										
						-				
						-				
						-				
						-				
						note: increase in s	and			
] ,				
						note: caliche nodu	les present			
135						-				
						-				
						-				
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140										
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						JANUT SILI WIII	GRAVEL			
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150			1	I	I	1				



Project	Name:	(ECP) 40th	Street &	Osborn F	Road WQ/	ARF	Boring ID: BMW-16D	
Project	Numbe	r: 14-2018-20	39.03	Da	ate: ⁰⁴⁻	11-2019	Page 7 of 12	
Boring Elevati Drilling Drilling Total D Depth	Location on and E Start Da Comple Depth (ft I to Water	B Datum: 1 ate: 0 tion Date: 0 ogs): 2 (ft bgs): 8	MW-16D 131.69' (I 4-11-201 4-16-201 90 2.95	NAVD88) 9 9		Logged By: Project Manager: Drilling Contractor: Drilling Method: Drilling Equipment: Sampling Method:	Issac Torres James Clarke Cascade Drilling LP Sonic 	
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Description and Notes	
150 -						SANDY SILT WITH subrounded to sub subangular gravel, medium, medium s CLAY, 90% fines, sand, 2% fine to cc plasticity, brown, sl	I GRAVEL , 60% fines, 25% fine to coarse grained, vangular sand, 15% fine to coarse grained, subrounded to nonplastic to low plasticity, brown to reddish brown, stiff, no odor, no stains, no caliche 10% fine to coarse grained, subrounded to subangular parse grained, subrounded to subangular gravel, medium lightly moist, hard, no odor, white staining (calcihe)	_
165					SC	CLAYEY SAND, 5 sand, 35% fines, 1 gravel, nonplastic, odor, no stains	55% fine to coarse grained, subrounded to subangular 0% fine to coarse grained, subrounded to subangular brown to reddish-brown, moist, very soft to very sitff, no	
170					CL	CLAY, 90% fines, sand, 2% fine to co high plasticity, light at 174'), very firm to	10% fine to coarse grained, subrounded to subangular oarse grained, subrounded to subangular gravel, medium to t brown to reddish-brown, slightly moist to moist (increases to stiff, no odor, whitish-brown staining (caliche)	

wood.

Project Name:(ECP) 40th Street & Osborn Road WQARF							Davis a ID.	BMW/-16D	
Decise of Number 14-2018-2039-03 Decise 04-11-2019					ato: 04-	11-2019	Boring ID:	Page 8 of 12	
Project number: 14-2010-2009.00 Date: 04-11-2019 Boring Location: BMW_16D Logged By: Lesse Torres									
Elevation and Datum: 1131.69' (NAVD88))	Project Manager:	James Clarke		
Drilling Start Date: 04-11-2019						Drilling Contractor:	Cascade Drilling LP		
Drilling Completion Date: 04-16-2019						Drilling Method:	Sonic		
Depth	to Water	(ft bgs):	82.95			Sampling Method:			
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	ption and Notes	
175 -	1////				CL	CLAY, continued			
						note: silt, sand & g	gravel, slight increase (sar	nd & gravel <15%), plasticity	
						decrease (medium), reddish-brown from 183'6" to 185' note: moisture decreases & whitish-brown staining from 186' to 187'			
185									
					CL	CLAY WITH GRAVEL, 80% fines, 15% fine to coarse grained, subrounded to subangular gravel, 5% fine to coarse grained, subrounded to subangular sand, high plasticity, reddish-brown, moist, medium stiff, no odors, trace whitish-brown staining			
						1			
				-					
						•			
						1			
						1			
200									
200									

wood.
Project Name:		(ECP) 40th	n Street &	Osborn F	Road WQ/	ARF	Boring ID: BMW-16D				
Project	Numbor	•• 14-2018-20	039 03	D	ato: 04-	11-2019		Page 9 of 12			
Boring Location: Elevation and Date Drilling Start Date: Drilling Completio Total Depth (ft bgs Depth to Water (ft		Image: Constraint of the second sec	3MW-16D 1131.69' (1)4-11-2019)4-16-2019 290 32.95	NAVD88) 9 9		Logged By: Project Manager: Drilling Contractor: Drilling Method: Drilling Equipment: Sampling Method:	Issac Torres James Clarke Cascade Drilling LP Sonic 				
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	otion and Notes			
200					CL	CLAY WITH GRAV	/EL, continued				
					SC	CLAYEY SAND WI to subangular sand subangular gravel, wet, moderately firm	ITH GRAVEL, 50% fine to d, 30% fines, 20% fine to high plasticity to nonplas m to medium dense, no o	o coarse grained, subrounded coarse grained, subrounded to tic, dark reddish-brown, moist to dors, no stains			
205											
210											
						note: increase in fi	nes & plasticity				
215											
220						note: increase in g	gravel				
225						note: clay lense (4'	" thick, trace sand & grave	əl) at 224'			



Project Name:		(ECP) 40	Oth Street &	Osborn I	Road WQ	ARF	Boring ID: BMW-16D			
Project	Project Number:		-2039.03	D	ate: ⁰⁴⁻	11-2019	Page 10 of 12			
Boring Elevati Drilling Drilling Total D Depth	Location on and D J Start Da J Complet Depth (ft b to Water	i: atum: te: tion Date: gs): (ft bgs):	BMW-16D 1131.69' (N 04-11-2019 04-16-2019 290 82.95	NAVD88) 9 9		Logged By: Project Manager: Drilling Contractor: Drilling Method: Drilling Equipment: Sampling Method:	Issac Torres James Clarke Cascade Drilling LP Sonic 			
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Description and Notes			
225					SC	CLAYEY SAND W	VITH GRAVEL, continued			
					CL	SANDY CLAY WIT subangular to subr subrounded grave very stiff, whitish s	TH GRAVEL, 65% fines, 20% fine to coarse grained, brounded sand, 15% fine to coarse grained, subangular to el, medium to high plasticity, brown to reddish-brown, moist, staining around gravel (calcium carbonate)			
						note: silt lense (6"	' thick, loose, low plasticity) at 229'			
230					SM	note: decrease in f note: increase in m	fines & increase in sand moisture H GRAVEL , 55% fines, 35% fine to coarse grained,			
240						subangular to subr subangular gravel, moist, stiff, some v note: decreae in fir	prounded sand, 20% fine to coarse grained, subrounded to I, moderate eff, medium to high plasticity, reddish-brown, whitish-brown staining around gravel, no odors ines & increase in sand			
245						note: lenses of gravel at 245'				
250										

W	0	0	d.
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Project	Name:	(ECP) 401	th Street &	Osborn F	Road WQ	ARF	Paring ID:	BMW-16D			
Project	Numbe	r: 14-2018-2	2039.03	D	ate: ⁰⁴⁻	-11-2019		Page 11 of 12			
Boring Elevati	Location	n: Datum:	BMW-16D 1131.69' (N	AVD88)		Logged By: Project Manager:	Issac Torres James Clarke				
Drilling	y Start Da	ate: tion Doto:	04-11-2019)		Drilling Contractor:	Cascade Drilling LP				
Drilling Total D	g Comple Jonth (ft I	ation Date:	200	1		Drilling Method:	Sonic				
Depth	to Water	(ft bgs):	<u>290</u> 82.95		1	Sampling Method:					
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descrip	otion and Notes			
250 -					SM	SILTY SAND WITI	I GRAVEL, continued				
255					CL	SANDY CLAY WI subrounded subar subrounded sand, reddish-brown, mo	H GRAVEL , 45% fines, 3 ngular sand, 25% fine to c medium to high eff, nonp bist, very stiff, whitish-brow	85% fine to coarse grained, oarse grained, subangular to lastic to low plasticity, vn, no odors			
						- - - -					
260						note: silty sand wit	h gravel lense at 259'				
265											
205						CLAYEY SAND W subrounded sand, subrounded grave no odor, very stiff,	ITH GRAVEL, 50% fine to 35% fines, 15% fine to co I, no eff, medium plasticity trace whitish-brown staini	o coarse grained, subangular to barse grained, subangular to γ, dark reddish-brown, wet to moist ing			
270						note: increase in g	note: increase in gravel				
						- - - - -					
275	1.1.1.			1	1	1		-			

W	00	d.
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Project	Name:	(ECP) 40th	n Street &	Osborn F	Road WQ/	ARF							
	-						Boring ID:						
Project	Number	14-2018-2	039.03	Da	ate: <u>04</u> -	11-2019		Page 12 of 12					
Boring	Location	n: l	3MW-16D			Logged By:	Issac Torres						
Elevati	on and D	atum:	1131.69 (N	AVD88)		Project Manager:	James Clarke						
Drilling	Comple	tion Date: ()4-16-2019	<i>)</i>		Drilling Method:							
Total D	epth (ft k	ogs):	290	,		Drilling Equipment:							
Depth t	to Water	(ft bgs): 8	32.95			Sampling Method:							
Depth Below Ground Surface (feet)	Graphical Log	Sample ID	Blow Counts	PID Meter Reading (ppm)	Unified Soil Classification System		Soil Classification, Descri	iption and Notes					
275 -					SC	CLAYEY SAND W	TH GRAVEL, continued	I					
					SM	SILTY SAND WITH sub angular sand, gravel, 20% fines, to dense, trace wh	I GRAVEL, 50% fine to o 30% fine to coarse grain nonplastic to low plastic itish-brown staining, no o	coarse grained, subrounded to led, subangular to subrounded ity, dark reddish-brown, wet, loose odor					
280					CL	GRAVELLY CLAY WITH SAND, 45% fines, 35% fine to coarse graine subangular to subrounded gravel, 20% fine to coarse grained, subroun subangular sand, low to very high eff, low to medium plasticity, brown brown, moist to slightly moist, very stiff to hard, whitish-brown staining carbonate)							
285													
					SC	CLAYEY SAND Wi subrounded, 35% fines, no to high ef moist, loose to der	fine to coarse grained, su fine to coarse grained, su f (calcium carbonate), da use, no odor	to coarse grained, subangular to ubangular to subrounded, 25% ark brown to white, moist to slightly					
						note: increases in	gravel inbetween clay ler	nses with high cementation					
290 -						Total Depth = 290'							
295	-												
300 -													





DATE:

Environmental & Infrastructure Solutions, Inc. 4600 East Washington Street, Suite 600 Phoenix, Arizona

wood.
Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix Arizona 85034

BORING LOG I.D.: BMW-17D

Page 1 of 6

	Phoenix, Arizona 85034								1					
PROJECT: (ECP) 40th Street & Osborn Road WQARF					WQARF	PROJECT LOCATION:		3233 North 3	7th Street					
LOGGE			L. Baade	r			PROJECT FEATURE:		Phoenix, AZ					
	D.							WOOD PRO JECT #:		14-2019-203	4			
DDULE	<u>г.</u> р сір			Casada	Drilling LD			ADWD DEC #		55 000046				
DRILLE								ADWR REG. #:		55-922346				
RIG I.D.: STATION/OFFSET:								STATION/OFFSET:						
RIG TY	PE:			Sonic				REFERENCE:						
BORING	Э ТҮР	E:		Hydropur	nch	BOR	ING DIA.: 10"	COORDINATES:		33.487500°, ·	-112.001944°			
ORIENT	ATIO	N:		90°				COORDINATE SYS:		Latitude, Lon	gitude			
HAMME	RTY	PE:						SURFACE ELEV. (FT):		1185.97' ±				
НАММЕ	R CA	LIBR	ATIC	N-ENER	GY TRANSFER	RATIO:								
START				8/19/201	a	START	TIME:			8/19/2019				
		•		0/10/201				COMPLETION DATE.		0/10/2010	COMPLETION TIME.			
Elevation in Fee	Depth in Feet	Graphical	Log	Sample ID.	Date (Lime) PID Meter Reading (ppm)	Unified Soil Classification	VISUAL C (Color, Moist, % b Toughness, Dry	CLASSIFICATION y wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)				
-1186.0 -	0-	P	\$. \$				2" Asphaltic Con	crete over	0		Lock Well Cap, F	lush Mounted		
		ا ا				MI	10" Aggregate Ba	ase Course	-{		Steel Well Vault a	and Concrete Pad		
	+													
							SILT WITH SAND	D, 75% fines (silt),	-[>	$X \times X$				
							coarse grained a	se grained sand, 5%						
-1181.0 -	5-			-			gravel	····g-·····g-····	5-2		10" ± Diameter B	orehole		
	1 1													
	1 1													
-	1 1													
	1.1													
-1176.0 -	10-													
	1 1	•••	••••			SW	WELL GRADED	SAND WITH	1 1⁄2					
	1 1	÷.					GRAVEL, 60% to	o 65% medium to						
	1 1	*.°	°°°'				coarse grained sa	and, 25% fine grained,						
						SM	SII TY SAND WIT	TH GRAVEL 60%	ł k					
-1171.0 -	15-						fine to coarse gra	ained sand, 20% fines	15		4" Diameter Flush Schedule 40 Blar	h Threaded		
	1 1	İ	T			ML	(silt), 20% fine to	coarse grained,			Casing From 0 to	135'		
	1 1								12		0			
	1 1						fines (nonplastic)	. 30% fine to medium	l k					
1100 0							grained sand, 10	% fine grained,						
	20						subangular grave	9	2° R					
L .									K					
-1161 0 -	25-								25-		Cement Bentonite	e Grout		
									l - K		From 1.5' to 130'			
				L										
									ļ					
									k					
- 1156.0 -	30-								30-1	\bowtie				
									X					
	{	++	┼┼┼┼	+		N AL	SILT 0.00/ finan	(popplastic) 100/ fina	2					
	$\left\{ \begin{array}{c} 1 \\ 1 \end{array} \right\}$					IVIL	grained sand. nee	dominantly silt with	- X					
-1151.0 -	35-						some clay conter	nt ,	35 -					
	+								$ - \mathbf{k}$					
									-2					
									K					
									12					
- 1146.0 -	40						<u> </u>		40 🗵					
-	DEPTH(ft		ogs)	HOUR	DATE						(Continued Next Page)		
Ţ	8	2.95		N/A	N/A									
Ţ														
Ā														
Ţ														
-		н∩г	<u></u>	N/A										

W	Ό	0	d .
Environment	& Infrast	tructure S	Solutions, Inc
4600 East	Washing	ton Stree	t, Suite 600
Ph	oenix, Ar	izona 850	034

BORING LOG I.D.: BMW-17D

Page 2 of 6

PROJECT:				(ECP) 40th	Street & Osb	orn Road	WQARF	PROJECT LOCATION:	3233 North 37th Street			
	ADWR REG. #:			55-922346				PROJECT FEATURE:		Phoenix, AZ		
Elevation in Fee	Elevation in Fee Depth in Feet Graphical		Sample ID. or Date (Time)		PID Meter Reading (ppm)	Unified Soil Classification	VISUAL C (Color, Moist, % by Toughness, Dry	LASSIFICATION / wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)		
- 1146.0 -	40-					ML	SILT, continued		40 -	(Continued)		
 - 1141.0 - 	- 45- -						note: moist at 44'		- - 45 - - -	10" ± Diameter Borehole		
 - 1136.0 - 	- 50- - -						note: wet at 51'		- 50 - - -	4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 135'		
- 1131.0 - - 1131.0 - 	55-								- 55 - - -			
- 1126.0 - 	60-								60 -	Cement Bentonite Grout From 1.5' to 130'		
- 1121.0 - 	65-					ML	SILT WITH SAND (high silt), trace cl medium grained s grained, angular g slightly compacted	b, brown, 80% fines lay, 20% fine to sand, trace fine gravel, moist to wet, d to tightly compacted	65 - - -			
- 1116.0 - 	70-								70 -			
- 1111.0 - 	75-			BMW- 17D-74					75 -			
- 1106.0 - 	80- - -								80 - - -			
- 1101.0 -	85-					ML	SANDY SILT WIT fines (predominar 15% fine to coars fines grained, sub gravel, moist	H GRAVEL, 70% ntly silt), some clay, e grained sand, 15% vangular to angular	85 -			
- 1096.0 -	90					ML	SILT WITH SAND	(SAA), moist	90			
L		G Hift h	RO							(Continued Next Doco)		
Ā	8	2.95	331	N/A	N/A					(Conunued Next Fage)		
Ţ		_										
⊥ T			+									
<u> </u>				N/A]							

wood.
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Phoenix, Arizona 85034

BORING LOG I.D.: BMW-17D

Page 3 of 6

PROJECT:			(ECP) 40)th Street & C	sborn Road	WQARF	PROJECT LOCATION:		3233 North 37th Street				
ADWR F	REG.	#:		55-9223	46			PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical	Log	Sample ID. or	Date (Time) PID Meter	Unified Soil Classification	VISUAL C (Color, Moist, % by Toughness, Dry	LASSIFICATION / wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL (Construction Deta	INFORMATION ails and/or Drilling Remarks)		
- 1096.0 -	90-						SILT WITH SAND	(SAA), continued	90 -		(Continued)		
	- - 95- - -			BM\ 17D-	N- 94		note: increase in f sand (25%), trace gravel at 97'	fine to medium grained fine grained, angular	- - - 95 - - - -		10" ± Diameter Borehole		
 - 1086.0 - 	- 100- - -						-		- 100 - - -		4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 135'		
 - 1081.0 - 	- 105- - -						note: decrease in fine to coarse grained sand, trace angular gravel at 104' note: tightly compacted from 104' to 111'						
 - 1076.0 - 	110-					SM	SILTY SAND 60	% fine to coarse	- 110 - -		Cement Bentonite Grout From 1.5' to 130'		
	- - 115- - -			BM\ 17D-	N- 114		grained sand, 309 silt), some clay, 1 subangular grave	% fines (predominantly 0% fine grained, I, wet	- - 115 - - -				
 - 1066.0 - 	- 120- -						note: increase in (coarse grained sand	- 120 - - -				
	- 125- - -						(70%) at 122' note: cobbles at 1 note: decrease in (60%) at 126'	24' coarse grained sand	- 125 - - - -				
- 1056.0 - 	130- -						-		130 - - -		Hydrated Bentonite Chip Seal From 130' to 133'		
 - 1051.0 - 	135-			BM\ 17D-	N- 134	ML	SILT WITH GRAV	/EL, 80% fines	- 135 -		10/20 Colorado Silica Sand From 133' to 247'		
							(predominantly sil fine grained, angu	It with some clay), 20% Ilar gravel, moist	-		4" Diameter Flush Threaded Schedule 40 Screen (0.020") From 135' to 245'		
- 1046.0 -	140-		 GRC						140 -				
⊥ ⊻ ⊻ ⊻	DEP1 8	TH(ft 32.95	bgs)	HOUR N/A	DATE N/A					(Conti	nued Next Page)		

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BORING LOG I.D.: BMW-17D

Page 4 of 6

PROJEC	CT:			(ECP) 40th Street & Osborn Road WQARF							WQARF	PROJECT LOCATION:	3233 North 37th Street				7th Street	
	REG.	#:		55-922346							1	PROJECT FEATURE:		Phoenix, AZ				
Elevation in Feet	Depth in Feet		Granhical	Graphical Log Sample ID. or Date (Time)			or Date (Time)		PID Meter Reading (ppm)	Unified Soil Classification	VISUAL C (Color, Moist, % by Toughness, Dry	LASSIFICATION / wt., Plasticity, Dilatancy, Strength, Consistency)	ncy, y) ta 0 (Construc				WELL INFORMATION ction Details and/or Drilling Remarks)	
- 1046.0 -	140-		П		I					ML	SILT WITH GRAV	/EL, continued	140 -	 			(Continued)	
	-										-		-					
- 1041.0 - 	- 145- -	-								ML	SANDY SILT WIT fines (predominar 20% coarse grain grained, subangu	H GRAVEL, 60% htly silt), some clay, led sand, 20% fine alr gravel, wet	- 145 - -				■ 10" ± Diameter Borehole	
 - 1036.0 -	- 150-		ļ							SM	note: fine to coars note: cobbles at 1	se grained sand at 146' 47'	- 150 -					
		· .			•						fine to coarse gra 15% fine grained, 15% fines (silt), w	ined sand, well graded, , subangular gravel, <i>v</i> et	. .				Schedule 40 Screen (0.020") From 135' to 245'	
- 1031.0 - 	155- - -	-								ML	SILT WITH SAND 80% fines (predor to coarse grained grained, subangu	D AND GRAVEL, minantly silt), 10% fine sand, 10% fine lar to angular gravel	155 -				 10/20 Colorado Silica Sand From 133' to 247' 	
 - 1026.0 - 	- 160- -	· ·								SM	SILTY SAND WIT fine to coarse gra 15% fines (predor grained, subangu	H GRAVEL , 70% ined sand, well graded, minantly silt), 15% fine lar gravel, wet	160 - -					
 - 1021.0 - 	- 165- -				•						-		- 165 - -	-				
 - 1016.0 - 	- - 170- -			•••						SW	WELL GRADED S	SAND WITH SILT,	- 170 -					
	-									SM	increase in coarse decrease in fines SILTY SAND WIT	e grained sand (80%), (10%) TH GRAVEL , 80%	-					
- 1011.0 - 	1/5- - -	· ·			•						fine to coarse gra coarse grained, s gravel, 20% silt (p	ined sand, 20% fine to ubangular to angular oredominantly silt)	1/5 -	-				
 - 1006.0 - 	- 180- -				•						-		- 180 - -					
- 1001.0 - 	- - - - - -										- - - - -		- - - - - - -					
- 996.0 -							FR			-		- 190 -						
	DEP	- TH	(ft bgs) HOUR DATE														(Continued Next Page)	
∑ Ţ Ţ Ţ		82.	95			N/A			N/A									

METHOD <u>N/A</u>



BORING LOG I.D.: BMW-17D

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PROJE	CT:		(EC	P) 40	h Street & Osl	orn Road \	WQARF	PROJECT LOCATION:	3233 North 37th Street					
ADWR F	REG.	#:	55-9	92234	6			PROJECT FEATURE:		Phoenix, AZ				
Elevation in Feet	Depth in Feet	Graphical Log		Sample ID. or	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)			WELL INFORMATION (Construction Details and/or Drilling Remarks)				
-996.0 - 	190-					SM	SILTY SAND, 70 ^o grained sand, 30% silt), some clay, w	% fine to coarse % fines (predominantly et	- 190 - - -	(Continued)				
 -991.0 - 	195-								- 195 - -	10" ± Diameter Borehole				
 -986.0 - 	200-					SM SM	SILTY SAND WIT SILTY SAND WIT fine to coarse grai (predominantly sil to coarse grained.	H GRAVEL, 50% ined sand, 25% fines t), some clay, 25% fine , angular gravel, wet	200 -	4" Diameter Flush Threaded Schedule 40 Screen (0.020") From 135' to 245'				
 -981.0 - 	205-					ML	note: poorly grade with fine to coarse fines, wet from 20	ed coarse graineds and grained gravel, trace 4' to 206'	- 205 - -	10/20 Colorado Silica Sand From 133' to 247'				
 - 976.0 - 	210-						SANDY SILT, 70 ^o (predominantly sill to medium grained	% fines t), some clay, 30% fine d sand, moist, compact	210 -					
 - 971.0 - 	215-			BMW 17D-2	14	SM ML	SILTY SAND WIT fine to coarse grai (predominantly sil grained gravel SILT WITH SAND (predominantly sil to coarse grained	H GRAVEL, 60% ined sand, 20% fines t), 20% fine to coarse 9, 80% fines t), some clay, 20% fine sand, tightly	215 -					
 -966.0 - 	220-						note: driller report at 222'	ed difficulty drilling	- 220 - -					
 - 961.0 - 	225-						note: small cobble at 223' and 225' note: increase in c at 223' note: loose and w	coarse grained sand	- - 225 - -					
 - 956.0 - 	230-					SM	SILTY SAND WIT medium to coarse fines (predominan 15% fine to coarse cobbles	H GRAVEL, 60% e grained sand, 25% tily silt), some clay, e grained gravel, few	230 -					
- 951.0 - - 951.0 - 	235			BMW 17D-2	34	SW-SM	WELL GRADED S GRAVEL, 70% m grained sand, 20% grained gravel, 10 (predominantly sil SILTY SAND WIT fine to coarse grained gr	SAND WITH nedium to coarse % fine to coarse 1% fines t), wet H GRAVEL, 50% ined sand, 25% fine to avel 25% fines	235 -					
-946.0 -	240						(predominantly sil	t), moist	240					
L										(Continued Next Dave)				
Ţ	8	32.95	N	/A	N/A					(Conunded Next Page)				
⊻ ⊻ ⊻														

METHOD <u>N/A</u>

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BORING LOG I.D.: BMW-17D

Page 6 of 6

PROJEC	CT:		(ECP) 40th S	Street & Osb	orn Road \	VQARF	PROJECT LOCATION:		3233 North 37th Street			
ADWR F	REG.	#:	55-922346				PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry s	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WEI (Construction D	LL INFORMATION etails and/or Drilling Remarks)		
-946.0 -	240-	지난다			SM	SILTY SAND WIT	H GRAVEL.	240 ·		(Continued)		
 -941.0 - 	- - - 245- - -					note: increase in c (60%), decrease in large cobbles obse note: increase in f in coarse grained	coarse grained sand n fines (15%), some erved ines (30%), decrease sand (50%) at 246'	245 - - -		 - 4" Diameter Flush Threaded Schedule 40 Screen (0.020") From 135' to 245' - 4" Diameter Threaded PVC Bottom Cap 		
 -936.0 - 	250-							250 -		- 10" ± Diameter Borehole		
 -931.0 - 	255-					No Recovery - Slo grained sand, very	ough material = fine y wet from 254' to 260'	255		- Bentonite Chips From 247' to 267'		
 -926.0 - 	260-	\mathbf{X}				POORLY GRADE AND CLAY, 85% 15% silt to clay mi	D SAND WITH SILT fine grained sand, x fines, verv	260				
 -921.0 - 	- 265- -					compacted, hard, at 262' SILTY SAND, 609 grained sand, 309 silt), 10% fine grai	dry at 261', clay lens % fine to coarse 6 fines (pedominantly ned gravel, wet	265		- Total Depth = 267'		
 -916.0 - 	- 270- -							270 -				
 -911.0 - 	275-							275 -				
 -906.0 - 	- 280- -							280 -				
 - 901.0 - 	285-							285				
]								.				
	-								-			
- 896.0 -	290-	GRO		Ŕ				-290	1			
∑ Ţ Ţ Ţ	DEP1	TH(ft bgs) 32.95	HOUR N/A	DATE N/A								
	MET	HOD _	N/A									

			Envi 46	ironment & 00 East Wa Phoe	D Infrastru ashingto	OC ucture Solution Street, Su rona 85034	ions, Inc.			BORI	NG L	_0	G I.I	D.:	BMW-18D Page 1 of 6			
PRO JECT: (ECP) 40th Street & Osborn Road W(\//\^P	F				2801 1	Jorth 7	t1st Street			
LOGGE				(ECF) 4	our Su or	eel a Osb	om Roau	WQAR	Г									
	<u>лы.</u> Б.	•		L. Daau	51						TURE.		14-2019-2034					
	R FIR	м٠		Cascade	- Drillir	na I P					WOOD PROJECT #: 14-2019-2034 ADWR REC. #: 55.000965							
	<u>.</u>									STATION/OFFS				-000				
PIG TV	DE:			Sonic						BEEERENCE:								
BORING	TYP	E:		Hvdropu	inch		BOR		A .: 10"	COORDINATES	5:		33.479	9444°.	-112.015000°			
ORIENT		N:		90°						COORDINATE	SYS:		Latitud	le. Lor	naitude			
HAMME	RTY	PE:								SURFACE ELE	V. (FT):		1157.0)03' ±	5			
HAMME	R CA	LIBF	RATI	ON-ENER	RGY TI	RANSFER	RATIO:			VERTICAL DAT	TUM:		NAVD	88				
START	DATE			9/5/2019			START	TIME:		COMPLETION	DATE:		9/6/20	19	COMPLETION TIME:			
Elevation in Feet	Depth in Feet	Crossico	Log	Log Sample ID. or Date (Time)		PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)		Depth in Feet	(Cc	onstru	WELL INFORMATION ction Details and/or Drilling Remarks)					
-1157.0 -	0-	P	6.4	:				2"/	Sephaltic Co	porete over		0 -	XX		Lock Well Cap, Flush Mounted			
 - 1152.0 -	- - - 5-		ML 2" Asphal ML 6" Fill SANDY S grained si silt), 10% drv						NDY SILT, ined sand, 3 , 10% fine t	60% fine to coarse 30% fines (predomi o coarse grained g	inantly ravel,	5 -			Steel Well Vault and Concrete Pad			
 - 1147.0 - 	- - - 10- - -																	
- 1142.0 - 	15- - -					ML SILT WITH SANE (predominantly si grained sand, 10 subangular grave			ND, 70% fines silt), 20% fine to co 10% fine grained, vel, loose, dry	D, 70% fines silt), 20% fine to coarse 9% fine grained, el, loose, dry				4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 215'				
- 1137.0 - 	20- - -							-				20 -						
								note 26'	e: weakly ce to 30'	emented nodules fr	om	25 -			Cement Bentonite Grout From 1.5' to 211'			
- 1127.0 - 	30- - - -							-				30 -						
-1122.0 - 	35-							-				35 -						
-1117.0 -	40-	(JII GR(ATER	2	l					40	<u> </u>					
	DEP	TH(ft	bgs)	HOUR		DATE									(Continued Next Page)			
$\overline{\Delta}$		32.95	;	N/A		N/A												
Ţ																		
Ţ																		
$\bar{\mathbf{Y}}$																		

METHOD <u>N/A</u>

wood.
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BORING LOG I.D.: BMW-18D

Page 2 of 6

PROJEC	CT:			(ECP) 40	0th Str	eet & Osb	orn Road	WQARF	PROJECT LOCATION:		2801 North 31st Street			
ADWR F	REG. #	:		55-9228	65				PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical	Log	Sample ID. or	Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	LASSIFICATION v wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	(Construc	WELL INFORMATION ction Details and/or Drilling Remarks)		
- 1117.0 -	40-						ML	SILT WITH SAND	, continued	40 -		(Continued)		
	45-							note: weakly ceme 44' to 53'	ented nodules from	45 -				
 - 1107.0 - 	- 50- - -									- 50 - - -		10" ± Diameter Borehole		
	55-						ML	SANDY SILT, 50 (predominantly sil grained sand, 109 subangular gravel	% fines t), 40% fine to coarse % fine grained, I, loose, dry	55 -				
- 1097.0 - 	60-									60 -		4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 215'		
- 1092.0 - 	65-						ML	SANDY SILT WIT fines (predominar coarse grained sa grained, angular t	H GRAVEL, 40% tily silt), 40% fine to ind, 20% fine to coarse o subangular gravel,	65 -				
- 1087.0 - 	70-						ML	SILT WITH SAND (predominantly sil grained sand, 109 moist, slightly con	 75% fines t), 15% fine to coarse 6 fine grained gravel, ppact 	70 -		Cement Bentonite Grout From 1.5' to 211'		
- 1082.0 - 	75-									75 -				
- 1077.0 - 	80-			BMV 18D	W- -80				0/ 5 - 1	80 -		<u>7</u>		
 - 1072.0 - 	85-						ML	sill i sAND, 70 grained sand, 25% silt), 5% fine grain wet SILT WITH SAND (predominantly sil	% fines (predominantly hed, angular gravel, , 80% fines t), 15% fine to coarse	85 - -				
- 1067 0 -	90-							grained sand, 5% gravel, moist, slig	fine grained, angular htly compact	90				
⊥	DEPT 82 METH	G H(ft b 2.95	iRO igs)	UNDWA HOUR N/A		DATE N/A				JU -		(Continued Next Page)		

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BORING LOG I.D.: BMW-18D

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PROJECT:			(ECP) 40th St	reet & Osbori	n Road V	VQARF	PROJECT LOCATION:	ATION: 2801 North 31st Street				
	REG. #:		55-922865				PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry s	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)			WELL INFORMATION nstruction Details and/or Drilling Remarks)		
- 1067.0 - 	90- 						, continued	90 -		(Continued)		
 - 1062.0 - 	- 95- - -							95 -				
 - 1057.0 - 	100-		BMW- 18D-100		ML SANDY SILT, 70 (predominantly si sand, wet, uniforr		A) % fines t), 30% fine grained	100 -		—— 10" ± Diameter Borehole		
 - 1052.0 - 	- 105- - -					sand, wet, uniform	1	105 -				
 - 1047.0 - 	- 110				ML	SILT, 80% fines (10% fine grained g	predominantly silt), sand, 10% fine to avel, few cobbles,	- 110 - - -		4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 215'		
 - 1042.0 - 	- 115- -					moist		115 -				
 - 1037.0 - 	- 120- -		BMW- 18D-120					120 -		—— Cement Bentonite Grout From 1.5' to 211'		
 - 1032.0 - 	125-				ML	SANDY SILT WIT fines (predominan coarse grained sa grained gravel	H GRAVEL, 60% tly silt), 25% fine to nd, 15% fine to coarse	125 -				
 - 1027.0 - 	- 130- -							130 -				
 - 1022.0 - 	- - 135- - -							135 -				
 - 1017.0 -	140							140 -	\otimes			
⊥ ↓ ↓ ↓ ↓	DEPTH 82.	GRO (ft bgs) .95	UNDWATEF HOUR N/A	R DATE N/A						(Continued Next Page)		

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BORING LOG I.D.: BMW-18D

Page 4 of 6

PROJEC	CT:		(ECP) 40	th Street & O	sborn Road	WQARF	PROJECT LOCATION:	2801 North 31st Street				
ADWR F	REG.	#:	Ę	55-92286	5			PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical Loc	L G G	Sample ID.	Pate (Time) PID Meter	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)			WELL INFORMATION (Construction Details and/or Drilling Remarks)			
- 1017.0 -	140-					ML	SANDY SILT WIT	H GRAVEL,	140 -		(Continued)		
 - 1012.0 - 	145								145 -				
 - 1007.0 - 	- 150- -						-		150 -		——— 10" ± Diameter Borehole		
 - 1002.0 - 	- 155- - -					ML	SILT, 90% fines (some clay, 10% fi	(predominantly silt), ne grained sand	155 -				
 -997.0 - 	- 160- -		, ,	BMV 18D-1	60	SW	WELL GRADED S	SAND, 90% fine to	160 -		—— 4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 215'		
 - 992.0 - 	- 165- -						grained gravel, we	et, trace fines	165 -				
 -987.0 - 	- 170- -						note: cobbles at 1	68'	170 -		—— Cement Bentonite Grout From 1.5' to 211'		
 - 982.0 - 	- 175- - -						SILI (SAA), 90% silt), some clay, 10 note: cobbles at 1	fines (predominantly 0% fine grained gravel 72'	175 -				
 -977.0 - 	180-					ML	SANDY SILT WIT	H GRAVEL, 40%	180 -				
 - 972.0 -	- - 185- -						tines (predominar coarse grained gr	ntiy silt), 30% fine to avel, few cobbles, wet	185 -				
 - 967.0 -	- - 190-				TER	SW	WELL GRADED S 75% fine to coarse fines (predominar coarse grained, su	SAND WITH SILT, e grained sand, 15% htly silt), 10% fine to ubangular gravel, wet] 190				
⊥ ⊥ ⊥ ⊥	DEP1 8	TH(ft bgs 32.95		HOUR N/A N/A	DATE N/A						(Continued Next Page)		

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4600 East	Washing	ton Stree	t, Suite 600
Ph	oenix, Ar	izona 85	034

BORING LOG I.D.: BMW-18D

Page 5 of 6

PROJE	CT:		(ECP)	40th S	treet & Osb	orn Road \	WQARF	PROJECT LOCATION:		2801 North 31st Street			
	REG.	#:	55-92	2865				PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical Loo	Sample ID.	or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)			
-967.0 -	190-	****	•			SW	WELL GRADED S	SAND WITH SILT,	190 - -		(Continued)		
						ML	SANDY SILT WIT	H GRAVEL (SAA)	-				
-962.0 - 	195-						note: increase in c at 196'	coarse grained sand	195 - - -		Cement Bentonite Grout From 1.5' to 211'		
-957.0 - 	200-						note: increase in f	ines (50%) at 200'	200 - - -		 4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 215' 		
- 952.0 - 	205-								205 - - -				
- 947.0 - - 947.0 - 	210-						note: decrease in	coarse grained sand	- 210 - - -				
 -942.0 - 	215-						(back to fine to co note: well graded 215' to 216'	arse grained) at 212' sand lens from	- 215 - - - -		FIOIT 211 10 213		
 -937.0 - 	220-		• • • • •			SW	WELL GRADED S AND GRAVEL, 60 coarse grained sa (predominantly sil grained gravel	SAND WITH SILT 0% medium to nd, 255 fines t), 15% fine to coarse	- 220 - - -				
- 932.0 - 	225-		· · · · · · · · · · · · · · · · · · ·				granied graver		- 225 - - - -		——— 10/20 Colorado Silica Sand From 133' to 247'		
- 927.0 - 	230-		• • • • • • • • • • •						- 230 - - - -				
- 922.0 - - 922.0 - 	235-		• • • • • • •				note: increase in f	ines (35%) at 235'	235 -				
-917.0 -	240-	 ۹۵	• 100 ויסואו		 २				240 -				
⊥ ↓ ↓	DEP ⁻ 8	TH(ft bgs 32.95) HOUI N/A		DATE N/A						(Continued Next Page)		
<u>¥</u>	L MET	HOD	N/A										

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BORING LOG I.D.: BMW-18D

Page 6 of 6

PROJEC	CT:		(ECP) 40th S	treet & Osb	orn Road \	NQARF	PROJECT LOCATION:		2801 North 31st Street				
ADWR F	REG.	#:	55-922865	T			PROJECT FEATURE:		Phoenix, AZ				
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL C (Color, Moist, % by Toughness, Dry	LASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)				
-917.0 -	240-	<u>```````</u>			SW	WELL GRADED	SAND WITH SILT	240 -	(Continued)				
 - 912.0 -	245-					AND GRAVEL, C	ontinued	- - - 245 -	10" ± Diameter Borehole				
 -907.0 - 	250-				ML	SANDY SILT WIT fines (mix silt to cl 20% fines to coars	H GRAVEL, 60% ay, predominantly silt), se grained sand, 20%	-250 -	4" Diameter Flush Threaded Schedule 40 Screen (0.020") From 215' to 265'				
 - 902.0 - 	255-					fine to coarse grai note: primarily fine 252' to 259'	ned gravel	- 255 - - -	10/20 Colorado Silica Sand From 213' to 267'				
 - 897.0 - 	260-		BMW- 18D-260				20/ 5	260 -					
 - 892.0 - 	265-					note: predominant at 266'	ay), some silt, 50% fine sand tly fine grained sand	- 265 - -	4" Diameter Threaded PVC Bottom Cap				
 - 887.0 - 	270-					note: bedrock tag Head Formation (ged at 267'6", Camel's no recovery)	- 270 - - -	Bentonite Chips From 247' to 267'				
- 882.0 - 	275-					Total Depth = 274	!	275 -	Total Depth = 274'				
 -877.0 - 	280-							- 280 - - -					
	285-							285 -					
867.0 -	290-							290 -					
001.0	2.00	GRC	UNDWATE	R				200					
⊻ ⊻ ⊻	8	1 H(ft bgs) 82.95	N/A	DATE N/A									
	MET	HOD _	N/A										

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Phoenix Arizona 85034

BORING LOG I.D.: BMW-19D

Page 1 of 6

Phoenix, Arizona 85034																
PROJEC	CT:			(ECP) 40	th Street & Osb	orn Road	WQARF		PROJECT LOCATION:		3218 East Sh	eridan Avenue				
LOGGE	D BY			L. Baade	r				PROJECT FEATURE:		Phoenix, AZ					
	D .	-									14-2019-2034	1				
DDULE	<u>г.</u> р гір			Casaada	Drilling LD						55 000966					
DRILLE				Cascaue					ADWK REG. #:		55-922600					
RIG I.D.	:								STATION/OFFSET:							
RIG TYP	PE:			Sonic					REFERENCE:							
BORING	Э ТҮР	E:		Hydropur	nch	BOR	ING DIA.:	10"	COORDINATES:		33.475000°, -	112.011944°				
ORIENT	ATIO	N:		90°					COORDINATE SYS:		Latitude, Long	gitude				
HAMME	RTY	PE:							SURFACE ELEV. (FT):		1152.042' ±					
HAMME	R CA	LIBF	RATIO	ON-ENERG	GY TRANSFER	RATIO:			VERTICAL DATUM:		NAVD88					
START	DATE	:		9/16/2019)	START	TIME:		COMPLETION DATE:		9/20/2019	COMPLETION TIME:				
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Ъе	iet				(md	5				g						
n ir	Цщ	5	ç	<u> </u>	g (p	Soil	V (Color M	/ISUAL C	LASSIFICATION	۲ ۳		WELL INFORMATION				
atic	th i				dinç	ied	Toughn	ness. Drv	Strength. Consistency)	th th	(Construc	nstruction Details and/or Drilling Remarks)				
	Jep			Sar	Aete	Jnif	5	, ,	3, - , ,) e b						
4450.0				0,01												
-1152.0 -	0-		<u>6</u> 4				2" Aspha	altic Cond	crete over	0.		Lock Well Cap, F	Iush Mounted			
[1 -					SM	6" Fill					Steel Well Vault	and Concrete Pad			
									TH GRAVEL 60%	-						
							fine to co	oarse gra	ained sand, 20% fines							
-11/7 0 -	5-						(predom	inantly si	It), 20% fine grained,	5.		10" + Diameter B	orebole			
							angular	to suban	gular gravel, dry							
L _																
L _																
L -																
-1142.0 -	10-			_						10						
						ML	SANDY SILT WITH GRAVEL, 60% fines (predominantly silt) 25% fine									
	- 1						grained	sand, 15	% fine grained gravel,							
	-						dry		0 0 1		\boxtimes					
	-															
-1137.0 -	15-									15		4" Diameter Flus	h Threaded			
	-											Schedule 40 Blar	nk PVC			
	-											Casing From 0 to	202'			
	-															
	-															
-1132.0 -	20-						note: fine	e to coars	se grained sand (25%)	20 ·						
	-						from 20'	to 22'								
	-									· ·						
	-	1														
F		1											a <i>i</i>			
-1127.0 -	25-	1					note: fine	e grained	l sand (25%) from	25		Erom 1 5' to 19/1	e Grout			
F -	-	1					22' to 40)'		· ·	\boxtimes \boxtimes	110111.0 10 104				
F -	-	1								· ·	\bowtie					
	-										\boxtimes					
[1122.0]	30									30						
	30						note: we	akly cem	ented nodules at 30'	50	\boxtimes \boxtimes					
L -										.						
	-			<u> </u>						.						
	-									.						
-1117.0 -	35-									35 -						
	-															
	-															
	-															
	-										\bigotimes					
-1112.0 -	40-	<u> </u>								40	KX KX					
L		1 (SRC													
-	DEP	TH(ft	bgs)	HOUR	DATE							(Continued Next Page	e)			
Ţ	8	32.95	;	N/A	N/A											
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	MET	HOI	D _	N/A												

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BORING LOG I.D.: BMW-19D

Page 2 of 6

PROJECT: (ECP) 40th S				th Stre	eet & Osb	orn Road \	ECP) 40th Street & Osborn Road WQARF				3218 East Sheridan Avenue			
ADWR F	REG. #	#:		55-	92286	6				PROJECT FEATURE:		Phoenix,	AZ	
Elevation in Feet	Depth in Feet		Graphical Log		Sample ID.	Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	LASSIFICATION / wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	(Cons	WE truction D	EL INFORMATION Details and/or Drilling Remarks)
- 1112.0 -	40-							ML	SANDY SILT WIT continued	H GRAVEL,	40 -		X	(Continued)
 - 1107.0 -	- - 45-								note: fine to coars	e grained sand at 40'	45 -		XXXXXX	
 - 1102.0 - 	- - 50- -							ML	SANDY SILT WIT fine to coarse grai (predominantly sil subangular gravel	H GRAVEL, 40% ined sand, 40% fines t), 20% fine grained, i, dry	50 -			– 10" ± Diameter Borehole
	55-								note: caliche from	56' to 58'	55 -		XXXXXX	
 - 1092.0 - 	60-										60 -		×× ××	 4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 202'
 - 1087.0 - 	65-		· · · · · · · · · · · · · · · · · · ·					SW	WELL GRADED S	SAND WITH SILT	65 -		XXXXXX	
 - 1082.0 - 	- 70-							ML	grained sand, 30% silt), 20% fine grai subrounded grave	6 fines (predominantly ined, subangular to el, dry (predominantly silt),	70 -		×××	 Cement Bentonite Grout From 1.5' to 194'
 - 1077.0 -	75-								10% fine grained s grained, subround	sand, 10% fine led gravel, moist	75 -		XXXXX	
								ML	SANDY SILT, 60 fine to coarse grai grained, subround gravel, wet	% fines (silt), 30% ined sand, 10% fine led to subangular			XXXX	
	-								SILT, 90% fines (medium grained s	(silt), 10% fine to sand, wet			XXX XX Z	
- 1067.0 - 	85-							ML	SILT WITH SAND (predominantly sil subangular to sub grained, subround	, 80% fines t), 15% fine grained, rounded sand, 5% fine led gravel, weakly	85 -		XXXXX	
 - 1062.0 -	90-								cemented nodules plasticity, dark bro	s at 85', medium own, moist, no odor	90		×	
⊥ ↓ ↓ ↓ ↓	DEP1	TH(ft 32.9	GR (bgs) 5 D		DWA DUR //A		DATE N/A						(Cc	ntinued Next Page)

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Environment	& Infras	tructure 3	Solutions, Ind	;
4600 East	Washing	ton Stree	et, Suite 600	
Ph	oenix, Ar	rizona 85	034	

BORING LOG I.D.: BMW-19D

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PROJEC	CT:				(ECP) 40	ECP) 40th Street & Osborn Road WQARF PROJECT LOCATION						3218 East Sheridan Avenue				
ADWR F	REG.	#:			55-92286	6				PROJECT FEATURE:		Phoenix, AZ				
Elevation in Feet	Depth in Feet	:	Graphical Log)	Sample ID.	Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	(Construc	WELL INFORMATION ction Details and/or Drilling Remarks)			
- 1062.0 -	90-			1				ML	SILT WITH SAND	, continued	90 -		(Continued)			
	-								note: <5% fine gra grained sand	ined gravel, 20% fine	-					
- 1057.0 - 	95- - -							ML	SANDY SILT, 70 ⁰ (predominantly sill grained, subround grained, subround plasticity, dark bro	% fines t), 25% fine to coarse led sand, 5% fine led gravel, medium ware moist no odor	95 -					
 - 1052.0 - 	- 100- -										- 100 - -		10" ± Diameter Borehole			
 - 1047.0 - 	105-							SM	SILTY SAND, 709 subrounded sand, (predominantly silt	% fine grained, 25% fines t), 5% coarse grained,	- 105 - -					
 - 1042.0 - 	- - 110- -								subrounded to sub uncemented, nong wet, no odor	oangular gravel, olastic, dark brown,	- - 110 - -		4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 202'			
 - 1037.0 - 	115-										- - 115 - - -					
 - 1032.0 - 	- 120- -							ML	SANDY SILT, 70 ^o (predominantly sill grained sand, poo	% fines i), some clay, 25% fine rly graded, 5% fine to unded to subrounded	- 120 - - -		Cement Bentonite Grout From 1.5' to 194'			
 - 1027.0 - 	- 125- -								gravel		- 125 - - -					
 - 1022.0 - 	- 130- -										- 130 - -					
 - 1017.0 - 	- 135- -										- 135 - - -					
											-					
- 1012.0 -	140-		GR	οι	JNDWA	TER	I				J140 -					
∑ Ţ Ţ	DEP ⁻	TH(ff 32.9	bgs) 5)	HOUR N/A		DATE N/A						(Continued Next Page)			
	MET	НО	D.		N/A											

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BORING LOG I.D.: BMW-19D

Page 4 of 6

PROJEC	CT:		(ECP) 4	Oth Street & Os	oorn Road	WQARF	PROJECT LOCATION:	3218 East Sheridan Avenue			
ADWR F	REG.	#:	55-9228	66			PROJECT FEATURE:		Phoenix, AZ		
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or	Date (Time) PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	te e L L L L L L L L L L L L L L L L L L			
- 1012.0 -	140-				ML	SANDY SILT, cor	ntinued	140 -		(Continued)	
 - 1007.0 - 	- - - 145- - -					note: increase fine at 140'	e grained sand (30%)	- - - 145 - - -			
 - 1002.0 - 	- - 150- - -					- - - -		- - 150 - - -		10" ± Diameter Borehole	
- 997.0 - 	- 155- -				SM	note: weakly ceme 154' to 156' SILTY SAND, 60' grained sand, 40% silt) wet uniform	ented nodules from % poorly graded, fine % fines (predominantly consistency	- 155 - - -			
 -992.0 - 	- 160- -							- 160 - -		4" Diameter Flush Threaded Schedule 40 Blank PVC Casing From 0 to 202'	
 -987.0 - 	- 165- -					- - - -		- - 165 - - -			
 -982.0 - 	- 170- -					-		- - 170 - - -		Cement Bentonite Grout From 1.5' to 194'	
 -977.0 - 	- 175- - -				SM	SILTY SAND WIT predominantly coa 40% fines (predor grained, angular c	H GRAVEL, 40% arse grained sand, ninantly silt), 20% fine gravel, wet	175 - - -			
 -972.0 - 	- 180- -				SW	WELL GRADED S AND GRAVEL, 6	SAND WITH SILT 0% fine to coarse	- - 180 -			
 - 967.0 - 	- - 185- - -					grained sand, pre- grained, 20% fine 20% fine grained,	cominantiy coarse s (predominantly silt), angular gravel, wet	- - 185 - - -			
 -962.0 -	- 190-	GRC						- 190 -			
	DEP	TH(ft bgs)	HOUR	DATE						(Continued Next Page)	
⊥ ∑ ▼	8	32.95	N/A	N/A							
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_	MFT	нор	N/A								

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BORING LOG I.D.: BMW-19D

Page 5 of 6

PROJECT:			(ECP) 40	th Street & Osb	orn Road	WQARF	PROJECT LOCATION:	IECT LOCATION: 3218 East Sheridan Avenue				
ADWR REG. #:		# :	55-92286	6			PROJECT FEATURE:		Phoenix, AZ			
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID.	Date (Time) PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry	LASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	(Construc	WELL INFORMATION tion Details and/or Drilling Remarks)		
-962.0 -	190-	• • • • • •			SW	WELL GRADED S	SAND WITH SILT	190 -		(Continued)		
						AND GRAVEL, co	ontinued	. .		Cement Bentonite Grout From 1.5' to 194'		
 -957.0 - 	195-							- 195 - -		Hydrated Bentonite Chip Seal From 194' to 197'		
 - 952.0 -	200-					note: fine to coars (20%)	e grained gravel	- - 200 -		4" Diameter Flush Threaded Schedule 40 Blank PVC		
 - 947.0 -	205-							- - 205 -		Casing From 0 to 202' —— 10/20 Colorado Silica Sand From 197' to 252'		
	210				ML	SANDY SILT, 40 ^o (predominantly sil	% fines t), 30% fine to coarse	210				
					SW	WELL GRADED S AND GRAVEL, 50	SAND WITH SILT 0% fine to coarse	-				
 -937.0 - 	215-					grained sand, pred grained, 30% fines 20% fine to coarse to angular gravel,	s (predominantly coarse s (predominantly silt), e grained, subangular trace cobbles	- 215 - -				
 -932.0 -	220-							- - 220 -		4" Diameter Flush Threaded Schedule 40 Screen (0 020")		
 	225-									From 202' to 252'		
								-				
-922.0 - 	230-							230 -				
 - 917.0 - 	235-					note: fines increas predominantly silt	sed clay/silt	235 -				
 -912.0 -	240							240				
L		GRC										
⊻ ₹ ₹	8	2.95	N/A	N/A						(Continued Next Page)		
¥	MET	HOD _	N/A									

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Phoenix, Ārizona 85034	Environment & Infrastructure Solutions, Inc. 4600 East Washington Street, Suite 600 Phoenix, Arizona 85034	

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BORING LOG I.D.: BMW-19D

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PROJECT: (ECP) 40th Street & Osborn Ro			orn Road \	WQARF	PROJECT LOCATION: 3218 East Sheridan Avenu		3218 East Sheridan Avenue		
ADWR I	REG. #	# :	55-922866				PROJECT FEATURE:		Phoenix, AZ
Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CI (Color, Moist, % by Toughness, Dry :	ASSIFICATION wt., Plasticity, Dilatancy, Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-912.0 -	240-	•.•.•.•			SW	WELL GRADED S	AND WITH SILT	240 ·	(Continued)
						AND GRAVEL, co	ontinued	- - - -	10" ± Diameter Borehole
-907.0 - 	245-					note: increase per predominantly fine decrease in fines at 246'	centage, grained sand (70%), (20%), gravel (10%)	245 ·	Schedule 40 Screen (0.020") From 202' to 252'
 -902.0 - 	250-					note: weakly ceme	ented nodules at 250'	250 ·	From 197' to 252'
 - 897.0 -	255-					note: sand decrea predominantly coa to coarse grained coarse grained, ar	se to 60%, arse grained, but fine fines (30%), fine to ngular (20%)	255 ·	- · · · · · · · · · · · · · · · · · · ·
						Total Depth = 256	,		
- 892.0 - 	260-							260 -	-
	265-							265 -	
 -882.0 - 	270-							270 -	-
 -877.0 - 	275-							275 ·	
 - 872.0 - 	280-							280 ·	
 - 867.0 - 	285-							285 -	
 - 862.0 -	290	0.00						290 -	
L		GRC							
∇		2.95	N/A	N/A					
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Ā									
Ţ									
	METI	HOD _	N/A						

ECP - 48th Street and Indian School Road

Lithologic Log: **BBH-15D** E Indian School Rd s N 40th Northing (ft): 906450.10 Drill Method: Sonic Easting (ft): 677131.12 Diameter of Casing: NA Type of Casing: NA LS Elev. (ft): Approx. 1,120 Ref. Pnt.: Not Applicable (NA) Slot Size: NA Ref. Pnt. Elev. (Ft): 1208 Filter: NA Total Depth bls (ft): 245 ADWR Reg. No. 55-920470 N BBH-15D Depth to Water (ft):41.8 Note:PID = Photoionization detector Date: 5/23/17 - 5/30/17 Temperature in degrees Fahrenheit PID/TEMP (ppmv/degF) Land Surface) DEPTH (feet Below Lithologic Log USCS Lithologic Description 0 SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines; 15% fine trace medium sand. Firm, moist, moderate reaction to HCI. ML Color change to Yellowish red (5YR4/6) at 5.5'. Borehole hand augered to 5.6 feet. 39.6/ Color change to Yellowish red (7.5YR7/6) at 8'. 90.3 SILTY SAND - Reddish brown (5YR4/4); 60% fine to coarse subrounded sand; 55.2/ 10 89.9 40% nonplastic fines; 10% fine subangular to subrounded gravel to $\frac{3}{4}$ ". SM 62.2/ Loose, dry, moderate reaction to HCI. 89.7 SANDY SILT - Light reddish brown to reddish brown (5YR6/4 to 5YR5/4); 68.5/ 65% nonplastic fines; 30% fine to medium, less coarse subrounded sand; 125.9 ML 5% fine subrounded granitic gravel to 3/8". 55.3/ Hard to 13', firm below, strong reaction to HCl, dry. 111.9 SILT - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine sand. Strong reaction to HCl, hard, dry. 90.2/ 103.4 ML 63.2/ 127.7 20-45/ SANDY SILT - Reddish brown (5YR4/4); 65% nonplastic fines; 30% fine to 108.6 ML coarse subrounded sand; 5% fine subrounded gravel to 5/8". 59.3/ Soft, moist, no reaction to HCI. 123.2 At 21.5' - Contains gravel size sandstone clasts with black cement. SILT WITH SAND- Light reddish brown to reddish brown (5YR6/4 to 5YR4/4); 59.7/ 102.7 80% nonplastic fines; 15% fine, less medium, trace coarse subrounded sand; 5% fine subangular gravel to 3/8". 31.9/ ML Firm, strong reaction to HCl, contains pink (5YR8/3) stringers of caliche. 105.8 46.3/ 101.4 44.1/ 30 110.8 Logged by MFW; Checked by MFW HARGIS + ASSOCIATES, INC. PAGE 1 OF 9 Hydrogeology/Engineering

Lithologic Log: BBH-15D									
DEPTH (feet Below Land Surface)	PID/TEMP (ppmv/degF)	Lithologic Log	NSCS	Lithologic Description					



Litho	Lithologic Log: BBH-15D									
DEPTH (feet Below Land Surface)	PID/TEMP (ppmv/degF)	Lithologic Log	NSCS	Lithologic Description						



PAGE 3 OF 7

Lithol	logic L	.og: B	BH-15	5D
DEPTH (feet Below Land Surface)	PID/TEMP (ppmv/degF)	Lithologic Log	NSCS	Lithologic Description
110	49.4/ 117.4		ML	GRAVELLY SILT WITH SAND - Reddish brown (5YR4/4); 55% nonplastic fines; 25% fine, less coarse subangular to subrounded gravel to 1½"; 20% fine to coarse subangular to subrounded sand.
	109.7		SM	SILTY SAND WITH GRAVEL - Dark reddish brown (5YR3/4); 40% fine to coarse subrounded to rounded sand; 35% nonplastic fines; 25% fine, less coarse subrounded gravel to 11/2".
	24.9/ 139.2			Loose, no reaction to HCl, wet. GRAVELY SILT WITH SAND - Same as above with fine, less coarse angular to
_	50.6/ 133.3		ML	subangular gravel. Very hard 118 to 120'.
120	15.7/			
	18.1/ 115.3			SILT WITH SAND - Yellowish red (5YR4/6); 20% fine to coarse subangular to subrounded sand; 80% nonplastic fines; trace fine angular gravel to 3/8". Strong reaction to HCI, very hard, moist.
_	_ 22.9/ 114.2		ML	
	19.6/ 93.3			
130—	_ 11.4/		T	SILTY SAND/SANDY SILT WITH CRAVEL - Poddish brown (5YP4/4): 50%
_	91.5 20.6/ 92.8		SM/ML	nonplastic fines; 30% fine to coarse subangular to subrounded sand; 20% fine subangular to rounded gravel to 3/4".
_				SILT WITH SAND - Same as above.
	_ 11.7/ 109.7		ML	
	13.8/ 94.2		ML	SANDY SILT WITH GRAVEL - Reddish brown (5YR5/4); 55% nonplastic fines; 30% fine to coarse subangular to subrounded sand;15% fine to coarse subangular to subrounded gravel to $2\frac{1}{2}$ ". No to weak reaction to HCI, soft, wet.
140	_ 11.2/ 109.7 45.2/ 165.7		ML	SILT WITH SAND - Yellowish red (5YR4/6); 80% nonplastic fines; 20% fine to coarse subangular to subrounded sand; trace fine subangular gravel to 1/4". Moist, very hard, moderate to strong reaction to Hcl.
_	13.6/			SANDY SILT - Reddish brown (5YR4/4); 55% nonplastic fines; 35% fine to coarse subangular to subrounded sand; 10% fine angular to subangular gravel to $\frac{3}{4}$ ".
_	95.1		ML	Firm, no reaction to HCI, wet.
	25.2/ 130.2		SM	SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 40% nonplastic fines; 35% fine to coarse subangular to subrounded sand; 25% fine, trace coarse angular to subrounded gravel to 1½".
150	_ 10.5/ 97.5	····]	Firm, no reaction to HCI, wet.
	HARGIS	+ ASSO geology/Eng	CIATES, I gineering	NC. Logged by MFW; Checked by MFW PAGE 4 OF 7

Lithologic Log: BBH-15D									
DEPTH (feet Below Land Surface)	PID/TEMP (ppmv/degF)	Lithologic Log	NSCS	Lithologic Description					



Lithologic Log: BBH-15D								
DEPTH (feet Below Land Surface)	PID/TEMP (ppmv/degF)	Lithologic Log	NSCS	Lithologic Description				







MONI DATE DRI	MONITOR WELL: SMW-14B PROJECT: ECP 48th Indian School RdDATE DRILLED : 12/18/17 - 12/21/17DATE ABANDONED: 12/22/2017PROJECT NUMBER: 1133										
DRILLING	COMPA BY: <i>M W</i>	NY:Cas iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.125/6.0	LOCATION: 4212 E. Weldon Ave, Phoenix, AZ					
ADWR No REVIEWE SAMPLING PID: Minira	.: <i>abande</i> D BY: <i>B.</i> G METH ae3000	oned Waggle OD: hyd	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface								
DEPTH (feet) SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM					
		0.5 0.8 1.6 0.2 0.0 4.1 1.5	 		ASPHALT AGGREGATE BASE COURSE SILT – Reddish brown (5YR4/4); 95% nonplastic fines; 5% fine subrounded sand. Soft to locally firm, moist to 5', dry below, strong reaction to HCI, contains visible caliche. Color change to Light reddish brown (5YR6/4) at 5.5'. Color change to reddish brown (5YR5/4), sand up to 10% at 12'. 5% subangular gravel to 3/8" at 25.5'. Borehole air knifed to 5.1 feet.	0					
 	HARGIS+ASSOCIATES, INC. Page 1 of 13										

MONITOR WELL: SMW-14BPROJECT: ECP 48th Indian School RdDATE DRILLED : 12/18/17 - 12/21/17DATE ABANDONED: 12/22/2017PROJECT NUMBER: 1133											
DRILLING COMPANY: Cascade Drilli LOGGED BY: M Wiese	g DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.125/6.0	OCATION: 4212 E. Weldon Ave, Phoenix, AZ									
ADWR No.: abandoned REVIEWED BY: <i>B. Waggle</i> SAMPLING METHOD: hydropunch PID: Minirae3000	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface									
DEPTH (feet) (feet) (feet) (mdd) DEPTH SAMPLE (not) (bbu) USCS USCS USCS DEPTH	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM									
20 — 0.6 ^{ML}	SILT cont.	20 —									
8.2											
25 15.9	SII T WITH SAND - Dark reddich brown	²⁵ — Neat Cement									
— ML	(5YR3/4); 85% nonplastic fines; 15% fine to medium, trace coarse subrounded sand. Wet, weak reaction to HCI.										
	SILT – Reddish brown (5YR5/4 to 5YR4/4); 90% nonplastic fines; 10% fine, trace medium sand. Dry, strong reaction to HCl to 30', wet, weak reaction below.	8.125" Borehole									
	SILT WITH SAND – Yellowish red (5YR4/6); 80% nonplastic fines; 15% fine to medium, trace coarse subangular to subrounded sand; 5% fine subangular to subrounded gravel to 3/8". Weak reaction to HCI, soft, moist.										
35 — 11.8 ML	SANDY SILT – Reddish brown (5YR4/4) 65% nonplastic fines; 30% fine to coarse subangular to subrounded sand; 5% fine subangular gravel to 3/8".	35 —									
12.7	SILT WITH SAND – 85% nonplastic fines; 15% fine, less medium subrounded sand. Firm, weak to locally strong reaction to HCI at 38', moist.	- 39 bls									
	HARGIS+ASSOCIATES, INC.	40 🕅 Page 2 of 13									

MON DATE D	MONITOR WELL: SMW-14BPROJECT: ECP 48th Indian School RdDATE DRILLED : 12/18/17 - 12/21/17DATE ABANDONED: 12/22/2017PROJECT NUMBER: 1133									
DRILLIN	NG (D B	COMPA	NY:Cas iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.125/6.0	LOCATION: 4212 E. Weldon Ave, Phoenix, AZ			
ADWR N REVIEW SAMPLI PID: Mir	No.: VEC ING nira	<i>abando</i>) BY: <i>B.</i>) METH e3000	oned Waggle OD: hyo	e Iropun	nch	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface			
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM			
-			8.8 28.1	ML		SILT WITH SAND cont.				
 45	-	<0.25	31.0	SM		SILTY SAND WITH GRAVEL – 45% fin to coarse subrounded sand; 40% nonplastic fines; 15% fine subrounded t rounded gravel to ¾". Loose, wet, weak reaction to HCI. Groundwater at 39.3' when borehole advanced to 55'.	e – o – 45 – Neat Cement			
_	-		14.9	ML		SANDY SILT – Reddish brown (5YR5/4 65% nonplastic fines; 35% fine to coars subrounded sand. Moist, weak reaction to HCI, firm.); e			
50			14.1	SM		SILTY SAND WITH GRAVEL – Reddisl brown (5YR4/4); 45% nonplastic fines; 40% fine to coarse subrounded sand; 15% fine subangular to subrounded gravel to ½". Wet, firm, weak to modera reaction to HCI.	n – 8.125" Borehole te 50 – –			
-	-		9.3	ML		SANDY SILT – Reddish brown (5YR4/4 65% nonplastic fines; 35% fine to coars sand. Firm, moist, weak reaction to HCI); e . –			
55 —	-		6.0	SM		SILTY SAND WITH GRAVEL – Same a above with 20% fine subrounded gravel to ¾". Loose, wet, no reaction to HCI.	55 — S S			
_			3.0	ML		SANDY SILT – Same as above.				
60 —			1.7	SM ML		above with fine gravel to ½". SANDY SILT – Same as above. Hard a	t 60			
	HARGIS+ASSOCIATES, INC. Page 3 of 13									



MONITOR WELL: SMW-14B PROJECT: ECP 48th Indian School Rd PROJECT: NUMBER: 1133										
DATE DRILLED : 12/18/17 - 12/21/17DATE ABANDONED: 12/22/2017Threader HomoletterDRILLING COMPANY: Cascade DrillingDRILLING METHOD: SonicLOCATION: 4212 E. Weldon Ave, Phoenix, AZLOGGED BY: M WieseBOREHOLE DIA (inch).: 8.125 / 6.0Phoenix, AZ										
ADWR N REVIEW SAMPLII PID: Min	lo.: EC NG ira	abando) BY: <i>B.</i>) METH0 e3000	oned Waggle OD: hyo	e Iropun	nch	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrac ft bls = feet b	chloroethene below land surface		
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL A	ABANDONEMENT DIAGRAM		
_			6.0	SM		SILTY SAND WITH GRAVEL cont.				
			35	ML		SILT WITH SAND – Dark reddish browr (5YR3/4); 80% nonplastic fines; 20% fin to coarse subrounded sand; trace fine subrounded gravel to ¼". Firm, no reaction to HCI, wet. GRAVELLY SILT WITH SAND – Reddis brown (5YR4/4); 60% nonplastic fines; 25% fine subangular to subrounded gravel to ¾"; 15% fine to coarse subrounded sand. Firm to hard, wet, weak reaction to HCI.	e – 85 –			
_		7.36	15.5	ML			h _	Neat Cement		
 90			13.3	SM		SILTY SAND – Reddish brown (5YR4/4) 55% fine to coarse subrounded to rounded sand; 35% nonplastic fines; 10% fine subrounded gravel to 3/8". Wet, loose, no reaction to HCl.); – % 90 ––	8.125" Borehole		
_			12.4	ML		SANDY SILT WITH GRAVEL – Reddish brown (5YR4/4); 60% nonplastic fines; 25% fine to coarse subrounded sand; 15% fine subangular to subrounded gravel to 5/8". Hard, wet, weak to moderate reaction to HCI. SILTY SAND – Same as above.				
95 — —			6.5			SANDY SILT WITH GRAVEL – Reddish brown (5YR5/4); 55% nonplastic fines; 30% fine to coarse subrounded sand; 15% fine angular, trace coarse	95			
_			36.5	ML		98', hard, moderate to locally strong reaction to HCI.				
 100			28.3	SM		SILTY SAND WITH GRAVEL – Reddish brown (5YR4/4); 40% fine to coarse subrounded to rounded sand; 40% nonplastic fines; 20% fine, trace coarse subrounded to rounded gravel. Loose.				
HARGIS+ASSOCIATES, INC. Page 5 of 13										

MONITOR WELL: SMW-14B PROJECT: ECP 48th Indian School Rd PROJECT: NUMBER: 1133										
DATE DRILLED : 12/18/17 - 12/21/17DATE ABANDONED: 12/22/2017TROSECT NOMBERDRILLING COMPANY: Cascade DrillingDRILLING METHOD: SonicLOCATION: 4212 E.LOGGED BY: M WieseBOREHOLE DIA (inch).: 8.125 / 6.0Phoenix										
ADWR N REVIEW SAMPLI PID: Mir	No.: /EE NG	: <i>aband</i> e) BY: <i>B.</i>) METHe e3000	oned Waggle OD: hyd	e Iropur	nch	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface			
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM			
			18.9	SM		wet, no reaction to HCI in matrix, weak reaction on gravel. SANDY SILT WITH GRAVEL – Reddish brown (5YR5/4): 60% popplastic fines:				
 105		<0.25	7.6	ML		25% fine to coarse subangular to subrounded sand; 15% fine subangular to subrounded gravel to 5/8". Hard, wet weak reaction to HCI.				
			4.5				_ Neat _ Cement			
110 — — —			11.9	ML		SILT WITH SAND – Reddish brown (5YR4/4); 40% fine to coarse subrounde to rounded sand; 35% nonplastic fines; 25% fine, less coarse subrounded grave to 11/2". Loose, no reaction to HCl, wet.				
				SM		SILTY SAND – Dark reddish brown (5YR3/4); 55% fine to coarse subangula to subrounded sand: 45% nonplastic fines; trace fine angular gravel to 5/8". Loose to firm, no reaction to HCl, wet. SILT WITH SAND – Reddish brown (5YR4/6); 80% nonplastic fines; 15% fin to coarse subangular to subrounded sand; 5% fine subrounded gravel to ½". Hard, no to moderate reaction to HCl to 115.5', strong reaction below, moist. Contains well cemented siltstones.				
115 —			15.3				115 e			
			37.2	ML						
 120			44.1				120 —			
_				SM		SILTY SAND – Reddish brown (5YR4/4) 55% fine to coarse subangular to subrounded sand; 40% nonplastic fines; 5% fine angular gravel to ½". Wet, firm, no reaction to HCI.				
HARGIS+ASSOCIATES, INC. Page 6 of 13										
MONITOR WELL: SMW-14B DATE DRILLED: 12/18/17 - 12/21/17 DATE ABANDONED: 12/22/2017 PROJECT: ECP 48th Indian School Rd PROJECT NUMBER: 1133										
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	IG (D B	COMPA	NY:Ca: iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) : 8.125/6.0	LOCATION: 4212 E. Weldon Ave, Phoenix, AZ			
ADWR No.: abandoned REVIEWED BY: <i>B. Waggle</i> SAMPLING METHOD: hydropunch PID: Minirae3000						TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface			
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM			
			10.9 14.2 45.7 24.0	ML		SILT WITH SAND – Light reddish browr (5YR6/4); 85% nonplastic fines; 15% fin to medium subangular to subrounded sand. Wet, moderate to strong reaction HCI, hard, siltstone at 124.5'. GRAVELLY SILT WITH SAND – Reddis brown (5YR5/4); 60% nonplastic fines; 25% fine subangular gravel to ¾"; 15% fine to coarse subangular to subrounded sand. Firm to hard, moist, strong reactio to HCI to 127.5, wet, weak reaction belo	he			
 135 —		2.66	31.0 39.2							
			36.2			SILT WITH SAND – Reddish brown (5YR5/4 to 140', 5YR4/4 below); 85% nonplastic fines; 15% fine to medium, trace coarse subrounded to rounded sand.				
140 — —			20.1 26.2 21.2	ML						

	RII		WEL	L:	SMW	-14B	PROJECT: ECP 48th Indian School Rd PROJECT NUMBER: 1133
DRILLING COMPANY: Cascade Drilling DRILLING METHOD: Sonic LOGGED BY: M Wiese BOREHOLE DIA (inch).: 8.125 / 6.0 LOCATION: 4212 E. Weldon Ave, Phoenix, AZ							
ADWR No.: abandoned REVIEWED BY: <i>B. Waggle</i> SAMPLING METHOD: hydropunch PID: Minirae3000						TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM
			16.5	ML		SANDY SILT – Reddish brown (5YR4/4) 70% nonplastic fines; 25% fine to medium, less coarse sand; 5% fine angular gravel to ½". Soft, moist, strong	;
_			10.5	ML		_ reaction to HCI. SILT WITH SAND – Same as above.	
			55.2				
 150			25.3	ML		GRAVELLY SILT WITH SAND – Reddis brown (5YR4/4); 60% nonplastic fines; 25% fine, less coarse subangular to subrounded gravel to 2"; 15% fine to coarse subangular to subrounded sand. Wet, firm, weak reaction to HCI, strange sweet earthy odor.	h _ Neat 150 — Cement _
			25.9				_ 8.125" Borehole
 155		1.75	9.6	SM		SILTY SAND – Dark reddish brown (5YR3/4); 60% fine to coarse subrounde to rounded sand; 40% nonplastic fines. No reaction to HCI, wet, loose.	d 155 —
			6.9	ML		SANDY SILT WITH GRAVEL – Dark reddish brown (5YR3/4); 55% nonplastic fines; 25% fine to coarse subangular to rounded sand; 20% fine, trace coarse subangular to rounded gravel to 2½".	
						SILTY SAND – Same as above. SILTY SAND/SANDY SILT WITH GRAVEL – Dark reddish brown (5YR3/4);
160 —			21.0	SM/ ML		50% non to low plastic fines; 30% fine to coarse angular to subrounded sand; 20% fine angular to subangular granitic gravel to ¾". Firm to hard, wet, no reaction to HCL abundant biotite, clay	160 —
_			36.5			streak.	
				SM		SILTY SAND – Dark reddish brown	
	HARGIS+ASSOCIATES, INC. Page 8 of 13						

		WEL	L:	SMW	-14B	PROJECT: ECP 48th Indian School Rd PROJECT NUMBER: 1133
		PANY:Ca Wiese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch) · 8 125 / 6.0	LOCATION: 4212 E. Weldon Ave, Phoenix, AZ
ADWR N REVIEWI SAMPLIN PID: Mini	o.: <i>abar</i> ED BY: NG MET irae3000	ndoned B. Waggle HOD: hyc	ə Iropur	nch	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface
DEPTH (feet)	BTH PCE Resu (ug/L	lt PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM
165 — —		70.9			(2.5YR3/4); 65% fine to coarse angular t subrounded sand; 35% non to low plasti fines. Wet, firm to hard, locally strong reaction to HCI. Contains granitic sands in a clayey silt matrix.	
_		58.7	SM			
 170		80.4			SILTY SAND/SANDY SILT WITH GRAVEL – Dark reddish brown (2.5YR3/4); 50% non to low plastic fines	170 Neat Cement
_		20.6			35% fine to coarse subangular to subrounded sand; 15% fine, trace coarse angular to subrounded gravel to 1½". Wet, hard, no reaction to HCI, drills hard	e
 175	<0.2	23.9	SM/ ML			
_		87.4				
 180		37.1			SILTY SAND WITH GRAVEL – Dark reddish brown (2.5 YR3/4 to 2.5YR3/6); 45% fine to coarse subangular to subrounded sand; 40% nonplastic fines; 15% fine subangular to rounded gravel t	
_		18.0	SM			
	HARGIS+ASSOCIATES, INC. Page 9 of 13					

		WEL	L:	SMW	-14B	PROJECT: ECP 4 PROJECT NUM	48th Indian School Rd BER: 1133	
DRILLING (COMPA	NY:Cas iese	scade	Drilling	DRILLING METHOD: Sonic BOREHOLE DIA (inch).: 8.125/6.0	LOCATION: 421	12 E. Weldon Ave, penix, AZ	
ADWR No.: REVIEWED SAMPLING PID: Minira	<i>abande</i>) BY: <i>B.</i>) METH e3000	oned Waggle OD: hyd	e Iropun	nch	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrach ft bls = feet be	nloroethene elow land surface	
DEPTH (feet) SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL AE D	BANDONEMENT DIAGRAM	
185 — —		32.6			SILTY GRAVEL WITH SAND – Dark rec (2.5YR3/6); 40% non to low plastic fines 35% fine to coarse angular to rounded gravel; 20% fine to coarse subangular to subrounded sand; 5% subangular	, 185 — –		
_		79.5	GM		cobbles to 4½". Hard, wet, similar to above – granitic sands and gravels in a matrix of clayey silt.			
190 —		29.2				190 —	Neat Cement	
		12.3 11.8	ML		GRAVELLY SILT WITH SAND – Reddis brown (2.5YR4/4); 55% nonplastic fines; 25% fine subangular to subrounded gravel to ³ / ₄ "; 20% fine to coarse subangular to subrounded sand. Wet, hard, no reaction to HCI.	h –	8.125" Borehole	
 195	<0.25	13.1			SILTY SAND WITH GRAVEL – Reddish brown (2.5YR4/4); 40% fine to coarse subrounded to rounded sand; 35% nonplastic fines; 25% fine, trace coarse subangular to rounded gravel. Firm to 201', loose below, wet, no reaction to HC	195 — (195 —		
_		10.6	SM					
200 —		8.8				200 —		
		5.4 17.1	ML/ CL		CLAYEY SILT – Yellowish red (5YR4/6) – 95% non to low plastic fines; 5% fine sand; trace fine gravel to ¼". Hard, wet,			
205 —			ML		SILT WITH SAND – Reddish brown	205 — 🛞		
	HARGIS+ASSOCIATES, INC. Page 10 of 13							

MON	 T	OR	WEL	.L:	SMW	-14B	PROJ PROJ	ECT: ECP 48th Indian School Rd
DRILLING COMPANY: Cascade Drilling DRILLING METHOD: Sonic LOGGED BY: M Wiese BOREHOLE DIA (inch).: 8.125 / 6.0								
ADWR N REVIEW SAMPLI PID: Mir	No.: /EC NG	: <i>aband</i>) BY: <i>B.</i>) METH e3000	oned Waggle OD: hyd	e Iropun	nch	TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMI PCE ft bls	MENTS: = tetrachloroethene = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	NSCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL ABANDONEMENT DIAGRAM
			13.2 23.2	GM	$\begin{array}{c} \bullet_{0}	(5YR4/4); 85% nonplastic fines; 15% fin to coarse subrounded to rounded sand. Soft, wet, weak reaction to HCI. SILTY GRAVEL WITH SAND – Dark brown (7.5YR3/4); 40% nonplastic fines 35% fine, less coarse subrounded to rounded gravel to 2¾"; 25% fine to coarse sand.	e ;	
			37.8 20.4			SILTY SAND WITH GRAVEL – Dark red (2.5YR3/6); 45% fine to coarse subangular to subrounded sand; 35% nonplastic fines; 20% fine, trace coarse subangular to subrounded gravel to 3". Firm to hard, wet, no reaction to HCI.	210 d	- Neat Cement
			29.2	5101		SANDY SILT WITH GRAVEL cont.	045	_ _ 8.125" Borehole
		<0.25	31.2	ML		SANDY SILT – Dark red (2.5YR3/6); 60 nonplastic fines; 40% fine to coarse subangular to subrounded sand; trace fine subangular gravel to 3/8". Firm to hard, wet, no reaction to HCI.	%	
 220			29.6				220	
			16.4	SM		SILTY SAND – Dark red (2.5YR3/6); 60 fine to coarse subangular to subrounded sand; 35% nonplastic fines; 5% fine angular to subrounded gravel to ½". Loose, wet, no reaction to HCI.	% t	
 225			27.1	ML		SANDY SILT WITH GRAVEL – Red (2.4YR4/6); 55% nonplastic fines; 30% fine to coarse subangular to subrounded sand; 15% fine subangular gravel to ½".	225	
						HARGIS+ASSOCIATES, INC.		Page 11 of 13

MON DATE D	RIL		WEL 2/18/17	L:	SMW	-14B DATE ABANDONED: 12/22/2017	PROJECT: ECP 48th Indian School Rd PROJECT NUMBER: 1133
DRILLING COMPANY: Cascade Drilling DRILLING METHOD: Sonic LOGGED BY: M Wiese BOREHOLE DIA (inch).: 8.125 / 6.0							
ADWR No.: abandoned REVIEWED BY: <i>B. Waggle</i> SAMPLING METHOD: hydropunch PID: Minirae3000						TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	COMMENTS: PCE = tetrachloroethene ft bls = feet below land surface
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL ABANDONEMENT DIAGRAM
_			35.9	ML		Hard, wet, no reaction to HCI.	
			37.1	GM		SILTY GRAVEL WITH SAND – Dark reddish brown (2.5YR3/4); 40% fine, les coarse subangular to subrounded grave to 3": 40% popplastic fines: 20% fine to	s
230 —			37.9			coarse subrounded sand. Firm, wet, no reaction to HCI. SANDY SILT WITH GRAVEL – Same a above.	s
_			54.6				- Neat Cement
_			16.4	ML			
235 —							235 —
_			12.3				_ 8.125" Borehole
			8.8	SM		SILTY SAND – Dark reddish brown (5YR3/4); 60% fine to coarse subangula to subrounded sand; 30% nonplastic fines; 10% fine, trace coarse gravel to 2 Firm, wet, no reaction to HCI. SILTY SAND – Reddish brown	
240 —		0.74		SM		(2.5YR4/4); 85% fine to coarse subrounded sand; 15% nonplastic fines; trace fine subrounded gravel to 1/4". Loose, wet, no reaction to HCI.	240 —
_			7.3	SM		SILTY SAND – Same as above.	
245 —			12.8	ML		GRAVELLY SILT WITH SAND – Reddis brown (5YR4/4); 55% nonplastic fines, 30% fine, less coarse subrounded grave	
	_			_	4	HARGIS+ASSOCIATES, INC.	Page 12 of 13

MONITOR WELL: SMW-14BPROJECT: ECP 48th Indian SchoolDATE DRILLED : 12/18/17 - 12/21/17DATE ABANDONED: 12/22/2017PROJECT NUMBER: 1133									
DRILLING COMPANY: Cascade DrillingDRILLING METHOD: SonicLOCATION: 4212 E.LOGGED BY: M WieseBOREHOLE DIA (inch).: 8.125 / 6.0Phoenix									
ADWR No.: abandoned REVIEWED BY: <i>B. Waggle</i> SAMPLING METHOD: hydropunch PID: Minirae3000						TOTAL BOREHOLE DEPTH: 261 ft bls LAND SURFACE ELEV: 1210 U SCREEN INTERVAL: ABANDONED DEPTH TO WATER: 39 ft bls	CC PC ft	DMMENTS: CE = tetrachloroethene bls = feet below land surface	
DEPTH (feet)	SAMPLE	PCE Result (ug/L)	PID (ppm)	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL ABANDONEMENT DIAGRAM	
			29.7			to 3"; 15% subrounded sand. Firm, wet becomes drier with depth, no reaction t HCI, low plastic fines from 253' to 256'.	t, to	8.125" Borehole Neat Cement	
250 —			24.8	ML				250 —	
			22.4					6.0" Borehole	
255 —		<0.25	61.7					255 —	
_			25.6			Upper weathered bedrock (Camelshea Formation). Becomes competent and d at 260'. Core barrel stuck in formation 261'.	id Iry at		
			61.9						
260 —			31.5					260 —	
	HARGIS+ASSOCIATES, INC. Page 13 of 13								



APPENDIX B

HYDROGRAPHS AND PCE CONCENTRATION VERSUS TIME GRAPHS







AMSL - Above Mean Sea Level AWQS - Aquifer Water Quality Standard ft - Feet PCE - Tetrachloroethene µg/L - Micrograms per Liter



AMSL - Above Mean Sea Level AWQS - Aquifer Water Quality Standard ft - Feet PCE - Tetrachloroethene µg/L - Micrograms per Liter



Notes:

AMSL - Above Mean Sea Level AWQS - Aquifer Water Quality Standard ft - Feet PCE - Tetrachloroethene

µg/L - Micrograms per Liter



APPENDIX C

VERTICAL PROFILE GROUNDWATER SAMPLE ANALYTICAL REPORTS (INCLUDED ON CD ONLY)



This appendix is a separate file included with this submittal.



APPENDIX D

HISTORICAL GROUNDWATER SAMPLING ANALYTICAL REPORTS (INCLUDED ON CD ONLY)



This appendix is a separate file included with this submittal.



APPENDIX E

GROUNDWATER ANALYTICAL DATA (INCLUDED ON CD ONLY)



This appendix is a separate file included with this submittal.



APPENDIX F

LAND AND WATER USE REPORT





Land and Water Use Report East Central Phoenix 48th Street & Indian School Road and 40th Street & Osborn Road Water Quality Assurance Revolving Fund Sites Phoenix, Arizona

Submitted to:

Arizona Department of Environmental Quality 1110 West Washington Street Phoenix, Arizona 85007

Submitted by:

Wood Environment & Infrastructure Solutions, Inc. Phoenix, Arizona

February 1, 2019 Revised June 30, 2020

Project No. 14-2019-2034





Revision Log:

Revision #	Revision Date	Revision Description
1	June 30, 2020	Per City of Phoenix comment dated May 15, 2020 to the Draft 40 th Street and Osborn Road WQARF RI Report, the following change was made to Section 2.3.1.2, page 14, first sentence (ADEQ, 2020).
		From:
		"However, high increases in consumption coupled with severe reductions in surface water supplies could deplete these reserves by 2020"
		То:
		"However, high increases in consumption coupled with severe reductions in surface water supplies could require that COP begin to tap its reserves in groundwater by 2025"
		Per Salt River Project comment dated June 1, 2020 to the Draft 40 th Street and Osborn Road WQARF RI Report, the following change was made to Section 2.3.1.3, page 14, first sentence (ADEQ, 2020).
		From:
		"As a water supplier, SRP delivers nearly a million acre-feet of water to the Phoenix area each year."
		То:
		"As a water supplier, SRP delivers approximately 800,000 acre-feet of water to the Phoenix area each year."

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ATTACHMENTS

Attachment ALarAttachment BAD

Land and Water Use Study Questionnaires ADWR Well Registration Records

ACRONYMS AND ABBREVIATIONS

%	percent
40th & OSB Site	40th Street and Osborn Road WQARF Site
48th & IS Site	48th and Indian School Road WQARF Site
A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
af	acre-feet
af/yr	acre-feet/year
AMA	Active Management Area
A.R.S.	Arizona Revised Statutes
AWQS	Aquifer Water Quality Standard
bgs	below ground surface
CAP	Central Arizona Project
CEV	Camelback East Village
COC	Contaminant of concern
COP	City of Phoenix
DWS	Drinking Water Standard
Earth Tech	Earth Technology Corporation
ECP	East Central Phoenix
gpm	gallons per minute
H+A	Hargis + Associates, Inc.
HGL	HydroGeoLogic, Inc.
IRA	interim removal action
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mgd	million gallons per day
ng	nanograms
PCE	Tetrachloroethene, aka Perchloroethene
Plan	Water Resource Plan
PRP(s)	Potentially Responsible Party(ies)
RI	Remedial investigation
ROs	Remedial Objectives
Sites	40th & OSB and 48th & IS Sites
SRP	Salt River Project
SVE	soil vapor extraction
TCE	Trichloroethene
TDS	Total dissolved solids
μg/L	micrograms per liter
μg/m3	micrograms per cubic meter
USEPA	United States Environmental Protection Agency
Use Study	Land and Water Use Study
Wood	Wood Environment & Infrastructure Solutions, Inc.
WQARF	Water Quality Assurance Revolving Fund

EXECUTIVE SUMMARY

This Land and Water Use Study (Use Study) has been prepared for the East Central Phoenix (ECP) 48th Street and Indian School Road (48th & IS) and 40th Street and Osborn Road (40th & OSB) Arizona Department of Environmental Quality (ADEQ) Water Quality Assurance Revolving Fund (WQARF) Sites (the Sites). The Sites are two of six ECP WQARF sites, two of which have been recently delisted by the ADEQ. The boundaries of each site are established by the current extents of the contaminant plumes. However, the boundaries for the Use Study for each site are provided as follows:

- 48th & IS Devonshire Avenue to the north, 48th Street on the east, Weldon Avenue on the south, and 42nd Street on the west; and
- 40th & OSB Osborn Road on the north, 42nd Street on the east, Oak Street on the south, and 27th Street on the west.

Tetrachloroethene (PCE) is the lone contaminant of concern (COC) in the subsurface, currently soil vapor and groundwater. Figure 1 is a Site Map depicting the December 2018 PCE groundwater plumes for the Sites. The source of the contamination at the 48th & IS site have been previously identified as two dry cleaning facilities that operated at the northwest corner of 48th Street and Indian School from 1965 to present (Earth Technologies, Inc [Earth Tech, 1989] and HydroGeoLogic, Inc. [HGL], 2012). The source of contamination at the 40th & OSB site has not yet been identified; however, several upgradient potential sources, including past and existing dry-cleaning establishments have been identified (Earth Tech, 1989 and Hargis + Associates, 2015). These potential sources are located approximately 0.75 to one mile from the 40th & OSB site and are within the boundaries of the 48th & IS site. Data collected to date have not shown a definitive correlation linking these sources to observed 40th & OSB site concentrations of PCE in groundwater.

The land and water use study (Use Study) is required in accordance with Arizona Administrative Code (A.A.C.) R18-16-406(A)(3), which states that the remedial investigation (RI) shall identify current and reasonably foreseeable uses of land and waters of the State. As specified in A.A.C. R18-16-406(D), reasonably foreseeable uses of water are those likely to occur within the next 100 years.

To obtain consistent Use Study information from specified stakeholders, a standardized Use Study questionnaire was prepared and e-mailed by ADEQ and ADEQ's consultant Wood Environment & Infrastructure Solutions, Inc. (Wood) to the two municipalities and utilities in the area of the Sites, those being the City of Phoenix (COP) and the Salt River Project (SRP). Said questionnaires were completed and returned, and are provided herein as Attachment A. The questionnaires requested specific information in the following areas:

- Property information;
- On-site wells;
- Water use; and
- Waste streams.

Based on the Use Study questionnaires and the answers returned to ADEQ, very limited, if any, significant change to respondent properties would be expected to occur in the near future.

The Sites are located within the COP's existing property limits. Arizona State law requires each city to have a General Plan that establishes policy for the city's physical development (Arizona Revised Statutes [A.R.S.] 9-461.05). The COP General Plan includes goals, policies, and recommendations to guide land use and neighborhood development for the next 10 to 20 years and beyond. Thus, most of the discussion of land use centers on the COP General Plan, most recently updated in March 2015.

The COP is comprised of 15 "urban villages." The Sites are located in the Camelback East Village (CEV). CEV has two primary cores: the 24th Street and Camelback Road core and the 44th Street and Van Buren Street core. The primary land use within the CEV and the Site is single family residential followed by multiple family residential and commercial. The COP Water Services Department issued a water resources plan (Plan) in 2011 (COP, 2011). The plan includes water development and water use policies. Plans for specific groundwater development within the ECP Site are not addressed in the Plan.

Since 1985, groundwater use by the COP steadily declined due to the availability of Central Arizona Project (CAP) water, the development of SRP-based surface water supplies, and provisions in the State's Water Code (1919), updated by A.R.S. 9-461.05, which mandates groundwater use limitations. In effect, the Water Code and COP corresponding policy rely on groundwater as an essential supply to mitigate future water shortages. The COP currently meets over 95 percent (%) of its demand with various surface water sources. The COP also relies on groundwater to accommodate water system maintenance and as a back-up during temporary outages. The COP has the current capability of producing 28 million gallons per day (mgd) (15,000-20,000 acre-feet [af]) per year [af/yr]), and typically withdraws 6,000 to 9,000 af/yr. Sufficient wells currently exist to produce more than 28 mgd, though future rehabilitation and/or treatment may be needed to increase yields due to aquifer contamination, overall aging well conditions and/or screen clogging conditions.

In 2010, the Arizona Department of Water Resources (ADWR) approved the COP's application for a redesignation of Assured Water Supply. This re-designation reconfirmed the original approval by ADWR in 1998, and confirms the COP has sufficient water supplies to support existing customers and projected growth demands through the year 2025 and for at least 100 years. The COP concludes in their Water Resources Plan that sustainable water supplies exist for all growth currently anticipated through 2060 under normal supply (non-shortage) conditions (COP, 2011).

Degraded groundwater constitutes a vast reserve of water for use in meeting the COP's future water needs. The COP maintains several wells within or adjacent to various ADEQ WQARF sites for emergency use and future use in meeting service area water needs; these wells could be placed back in service with the addition of wellhead treatment systems or approved blending programs. Also, the COP holds "Special Pump Rights" with SRP, which are rights to groundwater well capacity developed by SRP. The COP does not have any wells within one mile of the Sites groundwater contaminant plumes.

SRP generally uses groundwater to supplement its surface water supply. Thus, annual use of groundwater fluctuates depending upon the availability of surface water. SRP currently has 12 groundwater supply wells within 1-mile of either the 48th & IS or the 40th & OSB sites. As the area becomes more urbanized, wells with suitable water quality may be shifted to municipal use. SRP indicated in their Land and Water Use Questionnaire response that all its properties within the vicinity of the Sites will remain in use over the next 100 years. Additionally, SRP anticipates its groundwater supply wells in the area of the Sites will transition from irrigation to municipal service (potable supply) in the reasonably foreseeable future.

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Land and Water Use Report (Use Report) for the East Central Phoenix (ECP) 48th Street and Indian School Road (48th & IS) and 40th Street and Osborn Road (40th & OSB) Arizona Department of Environmental Quality (ADEQ) Water Quality Assurance Revolving Fund (WQARF) Sites (the Sites) to meet the requirements established under Arizona Administrative Code (A.A.C.) R18-16-406(D). The purpose of the report is to gather information regarding current and foreseeable uses of land or waters that have been or are threatened to be impacted by a contaminant release.

1.1 Process Overview

The process to complete the remedial investigation (RI) and select remedial objectives (ROs) begins with the completion of the Draft RI Report. Following the completion of the Draft RI Report, which includes the Use Report, a public meeting is held to discuss the reports and solicit input for the selection of ROs. The public will be given 60 days to comment on the Draft RI Report and 30 days to comment on the Proposed RO Report. Following the public meeting and comment period, ADEQ issues the Proposed RO Report. The ROs chosen for a site may be based on none, some, or all of the uses identified in the Use Report. If there is significant public interest or additional information has been discovered, an additional public meeting to discuss the ROs is held. The Final RO Report is then prepared and included in the Final RI Report.

1.2 Land and Water Use Report

The purpose of the Use Report is to gather information regarding current and "foreseeable" uses of land or waters that have been or are threatened to be impacted by a contaminant release, and to project time frames for future changes in those uses. Information gathered from discussions with property owners, water providers, municipalities, and well owners are to be included in the report.

In general, this Use Report identifies various current and potential future uses of land and water in the vicinity of the Site. However, the Use Report does not evaluate the uses, nor does it classify the use as "reasonably foreseeable." The evaluation of uses will take place during public comment periods, and public meetings and will be presented in the Proposed RO Report.

1.3 Background

The Sites are located in a mixed residential and commercial area of Phoenix, Arizona (Figure 1). Regulatory agency involvement at the Sites began in 1984 following the discovery of halogenated hydrocarbon solvents (halocarbons) in multiple Salt River Project (SRP) irrigation wells from 1983 to 1986 (Earth Technology Corporation [Earth Tech], 1992). This included SRP wells within what became known as the ECP Study Area. The ECP Study Area was bounded by Camelback Road to the north, McDowell Road to the south, 50th Street to the east and 20th Street to the west. SRP Well 17.9E-7.5N was found to have PCE with concentrations exceeding the ADEQ's Aquifer Water Quality Standard (AWQS) of 5 micrograms per liter (µg/L). SRP Well 17.9E-7.5N is located in the 3900 block of North 40th Street in a residential neighborhood of Phoenix, Arizona (Figure 1), which is within the current 40th & OSB site boundaries.

During 1989, soil gas surveys were conducted at multiple facilities throughout the ECP study area to determine if a release of contaminants to the subsurface had occurred. In October 1989, one soil vapor sample was collected adjacent to the Sandy's Cleaners facility located at the northwest corner of 48th Street and Indian School Road. The concentration of PCE detected in the soil vapor sample was 670 µg/L. Sandy's

Cleaners is located within the current 48th & IS site boundaries. Investigative histories for the Sites are summarized in the following subsections.

1.3.1 48th Street and Indian School Road

The following summarizes the investigation history for the 48th & IS Site (ADEQ, 2019a):

	48th & Indian School Site History Summary
Date	Activity
1992	Eight soil borings were drilled west of the Sandy's Cleaners facility. The soil concentrations of PCE ranged from 0.024 milligrams per kilogram (mg/kg) to 0.440 mg/kg. A wastewater sample was collected from the facility's lint trap in which the PCE concentration was 150 μ g/L. ADEQ also installed two groundwater monitor wells: one directly west of the Sandy's Cleaners facility (SMW-01) and one northwest of SRP's well 19.0E-8.1N (SMW-02). The initial groundwater sample collected from the well directly west of the Sandy's Cleaners facility had a PCE concentration of 2.300 μ g/L.
1994	One groundwater monitor well was installed southwest of the Sandy's Cleaners facility on the Arcadia High School grounds (SMW-03). The initial groundwater samples collected from the well had shallow and deep PCE concentrations that were below the AWQS of 5.0 μ g/L. During a routine groundwater monitoring event, the maximum reported PCE concentration throughout the site was 3,000 μ g/L.
1996	Ten soil borings were drilled west of the Sandy's Cleaners facility. The soil concentrations of PCE ranged from 0.0011 to 0.2 mg/kg. Soil vapor samples that were also collected had a maximum PCE concentration of 5,600 μ g/L in one boring at a depth of 15 feet bgs. During a routine groundwater monitoring event, the maximum PCE concentration throughout the site was 4,000 μ g/L.
1997 - 1998	The Arizona Department of Health Services evaluated the data collected in 1996 and provided three health consultations that determined there was no risk to employees under current use scenarios. In May, ADEQ collected grab groundwater samples from five wells. The PCE concentrations in these wells ranged from less than the laboratory reporting limit up to >2,500 μ g/L. During a routine groundwater monitoring event, the maximum reported PCE concentration throughout the site was 4,300 μ g/L.
1999	In April, the site was placed on the WQARF Registry with a score of 27 out of a possible 120 (ADEQ, 1998).
2000	ADEQ and SRP entered into a Governmental Services Contract in which ADEQ funded SRP to conduct an interim remedial action (IRA) at the site. As an IRA, SRP would design and install a SVE system to remove soil vapor contamination from the subsurface.
2001	As part of the IRA agreement, SRP installed two groundwater monitor wells east of the Sandy's Cleaners facility and one groundwater extraction well west of the Sandy's Cleaners facility (ECP-1 through ECP-3).
2004	SRP installed two soil vapor extraction (SVE) wells west of the Sandy's Cleaners facility. A non-title V Air Quality Permit from Maricopa County for their SVE system received approval.

Date	Activity
2006	In February, SRP began operating their SVE system, which was installed west of the Sandy's Cleaners facility. By September, the SVE system had removed approximately 248 pounds of PCE from the vadose zone. During a routine groundwater monitoring event, the maximum PCE concentration throughout the site was 98 μ g/L.
2007	In June, ADEQ sent out notices per A.R.S. §49-287.03 initiating the remedial investigation for the site. As of the end of September, approximately 295 pounds of PCE were removed from the vadose zone by SRP's SVE system. During a routine groundwater monitoring event, the maximum PCE concentration throughout the site was 100 μ g/L.
2008	By the end of March, approximately 309 pounds of PCE had been removed from the vadose zone by SRP's SVE system. ADEQ installed two additional groundwater monitor wells within 47th Street, north of Indian School Road (SMW-04 and SMW-05). The initial groundwater samples collected from the wells had PCE concentrations that were equal to and below the AWQS of 5.0 µg/L. During a routine groundwater monitoring event, the maximum PCE concentration throughout the site was 33 µg/L.
2009	In January, ADEQ collected passive soil gas samples from approximately 14 sample locations along North 45th Place, south of Indian School Road. By July, the SRP's SVE system had removed approximately 310 pounds of PCE from the soil in the vadose zone. Routine groundwater monitoring was not conducted.
2010	SRP continued to operate their SVE system and as of June, approximately 314 pounds of PCE had been removed from the vadose zone soil. During a routine groundwater monitoring event, the maximum PCE concentration throughout the site was 370 µg/L.
2011	ADEQ continued to collect passive soil gas samples from an additional 39 locations placed adjacent to the Sandy's Cleaners facility and within North 45th Place, south of Indian School Road. The PCE mass observed in those samples ranged from less than 25 nanograms (ng) to 3,512 ng. Because of these PCE concentrations, ADEQ installed 12 permanent soil vapor monitoring wells adjacent to the passive soil gas sample locations. The initial soil vapor samples collected from these wells had PCE concentrations that ranged from 16 micrograms per meter cubic (µg/m3) to 59,000 µg/m3.
	SRP continued to operate their SVE system and as of December, approximately 319 pounds of PCE had been removed from the vadose zone soil. During a routine groundwater monitoring event, the maximum PCE concentration observed throughout the site was 1,400 µg/L.
2012	ADEQ installed seven SVE and six SVE observation wells adjacent to the Sandy's Cleaners facility in preparation for the modification of SRP's SVE system. ADEQ also conducted a SVE pilot test. The results from the test suggest that SVE would still be an effective treatment technology for the site. SRP decommissioned their SVE system in April in order for ADEQ to manage the construction, operation, and maintenance of a new SVE treatment system. ADEQ also installed three additional groundwater monitoring wells south to southwest of the Sandy's Cleaners facility (SMW-06, SMW-07, and SMW-08) and conducted sampling of the soil vapor

48th & Indian School Site History Summary

Date	Activity					
	monitoring wells throughout the site. Cone Penetrometer Testing was also					
	performed throughout the site to investigate current hydrogeologic conditions.					
	A routine groundwater monitoring event was conducted in April.					
	To delineate the soil vapor plume, ADEQ installed 56 temporary soil vapor wells					
	along the northern and western parking area portions of the Arcadia Towne					
	Center and along East Piccadilly Road, East Fairmont Avenue, East Indianola					
	Avenue and East Clarendon Avenue (between North 43rd Place and North 44th					
2013	Place). The soil vapor concentrations of PCE ranged from $<11 \ \mu g/m3$ to 830					
2015	μg/m3.					
	ADEQ went door to door to collect indoor air samples from residents located					
	above the soil vapor plume to check for vapor intrusion. Out of 40 homes, 14					
	participated and granted access for their indoor air to be sampled.					
	Groundwater monitoring and soil gas monitoring activities are conducted					
	throughout the site. In April 2012 the SVE system was dismantled by SRP in order					
	for ADEQ to install a new system.					
2014						
	Wells BMW-05A, BMW-05B, BMW-06A, and BMW-06B are installed as part of the					
	investigation of the 40th & OSB site. Based on site investigation data in 2018,					
	these wells are re-designated as 48th & 15 site wells.					
2015	Groundwater monitoring and soil gas monitoring activities are conducted					
2015	throughout the site. The maximum PCE concentration throughout the site was 18					
	µg/L.					
	delineate the downgradient extent of the DCE groundwater plume. A site wide					
2016	aroundwater campling event is conducted in August 2016. The maximum DCE					
	concentration observed throughout the site was 10 ug/l					
	During May, boring BMW-15D was drilled at 3807 N /1st Street to link the /8th					
	& IS site and the 40th & OSB site PCE groundwater plumes. Vertical profile					
	samples collected during drilling had concentrations of PCE that were less than					
	the AWOS of 5.0 μ g/L. Therefore, ADEO decided to abandon the boring.					
2017	During December, boring SMW-14B was drilled at 4212 E. Weldon Avenue to link					
	the 48th & IS site and the 40th & OSB site PCE groundwater plumes. Vertical					
	profile samples collected during drilling do not provide conclusive evidence					
	regarding the source of the 40th & the OSB site PCE groundwater plume.					
	Therefore, ADEQ decided to abandon the boring.					
	During March, ADEQ drilled and sampled boring SMW-16B at 4730 E. Indian					
	School Road, which is completed as a monitoring well.					
	During October boring PMM/ 12P was drilled at 4215 5 Classed as to service					
2018	buildy October, boiling bivity-12b was drilled at 4215 E. Clarendon to confirm					
	RMW_15D and SMW_14B. Sampling route collected from boring RMW 12P had					
	Drive-15D and Sive-14D. Sampling results collected from boring $DVV-12D$ field					
	3.9 µg/L) Well BMW-12B was hereby identified as the downgradient sentinel well					
2017 2018	& IS site and the 40th & OSB site PCE groundwater plumes. Vertical profile samples collected during drilling had concentrations of PCE that were less than the AWQS of 5.0 μg/L. Therefore, ADEQ decided to abandon the boring. During December, boring SMW-14B was drilled at 4212 E. Weldon Avenue to link the 48th & IS site and the 40th & OSB site PCE groundwater plumes. Vertical profile samples collected during drilling do not provide conclusive evidence regarding the source of the 40th & the OSB site PCE groundwater plume. Therefore, ADEQ decided to abandon the boring. During March, ADEQ drilled and sampled boring SMW-16B at 4730 E. Indian School Road, which is completed as a monitoring well. During October, boring BMW-12B was drilled at 4215 E. Clarendon to confirm the groundwater PCE results of vertical profile samples collected from borings BMW-15D and SMW-14B. Sampling results collected from boring BMW-12B had PCE concentrations from less than the AWQS of 5.0 μg/L (maximum reported = 3.9 μg/L). Well BMW-12B was hereby identified as the downgradient sentinel well					

48th & Indian School Site History Summary							
Date	Activity						
	for the 48th & IS site and caused ADEQ to move the boundary between the Sites to 42nd Street.						
	During December, a site-wide groundwater monitoring event was performed. The maximum PCE concentration throughout the site was $31 \mu g/L$. Based on the data, ADEQ decided to proceed with drafting the RI Report for the 48th & IS site.						

Table 1 provides well construction details for monitoring wells located within the 48th & IS site boundaries. Literature reviews and record searches were performed in 1988 and 2012 to identify potential sources. A 1988 study, which covered the ECP Study Area, identified Sandy's Magic Touch Cleaners as a potential PCE source (Earth Tech, 1989). SRP Well 17.9E-7.5N was installed in 1965 and One Hour Martinizing/Cleaners by George operated at 48th Street and Indian School from 1966 to 1989. Sandy's Magic Touch Cleaners has been in operation from 1989 to present. HydroGeoLogic, Inc. (HGL) was directed to identify potentially responsible parties (PRPs) that may have contributed to PCE groundwater contamination at the 48th & IS site. HGL submitted a draft baseline PRP search report to ADEQ on June 24, 2002 and revised the report to address ADEQ comments on August 16, 2002 (HGL, 2002a). In 2012, HGL updated the 2002 baseline PRP search (HGL, 2012). Based on the HGL reports (HGL, 2002a and HGL, 2012), One Hour Martinizing/Cleaners by George and Sandy's Magic Touch Cleaners has been identified as the source of the contamination discovered at the 48th & IS site.

1.3.2 40th Street and Osborn Road

The following summarizes the investigation history for the 40th & OSB Site (ADEQ, 2019b):

Date	Activity				
	Groundwater samples were generally collected by SRP from SRP well 17.9E-7.5N,				
1092 2002	which is located west of the Osborn Road alignment and 40th Street. A sampling				
1983 - 2002	event, conducted in January 1998, yielded the highest historical (up to the date of				
	this Use Report) concentration of PCE of 210 μg/L.				
	In May, the site was placed on the WQARF Registry with a score of 30 out of a				
2000	possible 120 (ADEQ, 2000). The original WQARF boundary was an approximate 400-				
	foot area surrounding the well.				
2003	ADEQ installed a groundwater monitoring well in the Osborn Road alignment				
	between 39th Street and 40th Street (BMW-01A). The initial groundwater sample				
	collected from SRP well 17.9E-7.5N had a PCE concentration that was less than the				
	AWQS of 5.0 µg/L. During a routine groundwater monitoring event, PCE was				
	detected in SRP well, 17.9E-7.5N at a concentration of 110 µg/L.				
2005 2006	Routine groundwater monitoring was conducted at the site. PCE was detected in SRP				
2005 - 2006	well 17.9E-7.5N at concentrations ranging from 28 to 41 µg/L.				
	In June, ADEQ sent out notices per A.R.S. §49-287.03 initiating the remedial				
	investigation for the 40th & OSB site. During a routine groundwater monitoring				
2007	event, PCE was detected in SRP well 17.9E-7.5N at a concentration of 24 μ g/L. In				
2007	December, ADEQ installed an additional groundwater well, located on 39th Street				
	north of Indian School Road. The initial groundwater samples collected from the well				
	had depth-specific PCE concentrations that ranged from less than the AWQS of 5.0				

40th & OSB Site History Summary

Date	Activity					
	μ g/L to 310 μ g/L. This well was eventually included in the ECP 40th Street and Indian School WQARF site.					
2008	In the spring and winter, ADEQ installed three additional groundwater monitor wells (BMW-02A/B, BMW-03A/B, and BMW-01B): two (BMW-02A/B, BMW-03A/B) were located east of 40th Street along Weldon and Whitton Avenues, and one (BMW-01B) was located in the Osborn Road alignment between 39th Street and 40th Street. The initial depth-specific groundwater samples collected from these three wells had PCE concentrations ranged from less than the AWQS of 5.0 μ g/L to 110 μ g/L. During a routine groundwater monitoring event, PCE was detected in the SRP well at a concentration of 6.8 μ g/L. The maximum PCE concentration observed throughout the site was 67 μ g/L.					
2013-2014	In FY 2014, a total of eight groundwater monitor wells were installed (BMW-04A, BMW-04B, BMW-05A, BMW-05B, BMW-06A, BMW-06B, BMW-07A, and BMW-07B) and a total of 99 groundwater samples were collected and analyzed for VOCs. As previously indicated, wells BMW-05A, BMW-05B, BMW-06A, and BMW-06B were redesignated in December 2018 as 48th & IS. A draft RI report was submitted on June 30, 2014.					
2015	One groundwater monitor well (BMW-02C) was installed, and a total of 98 groundwater samples were collected and analyzed for VOCs. PCE concentrations in well BMW-02C ranged from <1.0 to 90 μ g/L. A draft RI report and final Feasibility Study Work Plan was submitted on June 30, 2015. During December, boring BMW-02D was drilled to delineate the vertical extent of PCE in well BMW-02C. PCE concentrations detected in vertical profile samples in boring BMW-02D range from 5.9 μ g/L at 240 feet below ground surface (bgs) to 190 μ g/L at 160 feet bgs. However, a well was not installed at boring BMW-02D as ADEQ decided to abandon this boring.					
2016	During January, boring BMW-08D was drilled at 3227 N. 38th Street to define the downgradient extent of the PCE groundwater plume. PCE was detected at a maximum concentration of 46.2 µg/L in vertical profile samples that were collected to a depth of 160 feet bgs. Based on these results, ADEQ decided to terminate the boring at 160 feet bgs and abandoned boring BMW-08D. During January, depth-specific groundwater samples were collected from SRP well 17.9N-7.5E. The samples had PCE concentrations that were less than the AWQS of 5.0 µg/L. A site-wide groundwater sampling event was conducted in August 2016. The maximum PCE concentration observed throughout the site was 62 µg/L					
2017	During May, boring BMW-15D is drilled at 3807 N. 41st Street to assess the potential connection of the 48th & IS site and the 40th & OSB site PCE groundwater plumes. Vertical profile samples collected from boring BMW-15D had PCE concentrations that were less than the AWQS of 5.0 µg/L. Therefore, ADEQ decided to abandon this boring. During December, boring SMW-14B is drilled at 4212 E. Weldon Avenue to link the 48th & IS site and the 40th & OSB site PCE groundwater plumes. Vertical profile samples collected during drilling do not provide conclusive evidence regarding the					

40th & OSB Site History Summary

Date	Activity					
	source of the 40th & OSB site PCE plume. Therefore, ADEQ decides to abandon the boring.					
	During March and April, ADEQ drilled and installed wells BMW-09D, BMW-10D, and BMW-11D. Vertical profile samples collected during drilling had reported PCE concentrations greater than the AWQS of 5.0 µg/L in samples collected from BMW-09D and BMW-10D. Reported PCE concentrations in BMW-11D were less than the detection limit of 0.25 µg/L and the AWQS of 5.0 µg/L. During October, boring BMW-12B is drilled at 4215 E. Clarendon to confirm the results of vertical profile samples collected during drilling of borings BMW-15D and					
	SMW-14B. Sampling results indicate PCE is below 5.0 μ g/L, maximum 3.9 μ g/L. Well BMW-12B is identified as the downgradient sentinel well for the 48th & IS site and the boundary between the Sites is moved to 42nd Street.					
2018	During September, four wells identified as BMW-14D, BMW-16D, BMW-17D, and BMW-18D are permitted in COP right-of-way to delineate the downgradient extent of the PCE groundwater plume. During October, boring BMW-14D is drilled at the southwest corner of 27th Street and Oak Street. Vertical profile groundwater samples are reported with PCE below 5.0 μ g/L. Compliance groundwater samples collected from BMW-09D and BMW-10D are reported with PCE concentrations below 5.0 μ g/L. Therefore, ADEQ decides to install BMW-14D. ADEQ postpones wells BMW-16D, BMW-17D, and BMW-18D to a later date, if they are determined to be necessary.					
	During December, a site-wide groundwater monitoring event was performed. The maximum PCE concentration throughout the site was 40 µg/L at BMW-02C. Based on the results, ADEQ decided to install a well next to abandoned boring BMW-02D (BMW-02E). Well BMW-02E is planned for drilling, installation and sampling in the Spring of 2019.					
	Additional wells are being considered by ADEQ during FY 2020 to complete the draft RI. The draft RI Report for the 40th & OSB site is tentatively scheduled to be completed by June 30, 2020.					

40th & OSB Site History Summary

Table 2 provides well construction details for monitoring wells located within the 40th & OSB site boundaries. The source of the contamination at the 40th & OSB site has not been identified; however, several upgradient potential sources, including dry cleaning establishments, have been identified. These potential sources are from approximately 0.75 to one mile from the 40th & OSB site. Literature reviews and record searches were performed in 1988, 2002, and 2009 to identify potential sources. A 1988 study, which covered the ECP Study Area, identified Kachina Cleaners, The Cleaners of Phoenix, Inc. (The Cleaners), and Sandy's Magic Touch Cleaners as potential sources (Earth Technology Corporation [Earth Tech], 1989). Kachina Cleaners and was subsequently identified as the source of the 40th Street & Indian School Road WQARF site and The Cleaners was subsequently identified as the source of the and 38th Street and Indian School Road WQARF site. A 2002 industrial survey did not identify any potential source areas within a 1/4 mile of the 40th & OSB site (HGL 2002). A 2009 city directory survey was performed to identify potential sources up and cross-gradient of the Site and along Indian School Road, Osborn Road, 40th Street, and

44th Street (Hargis + Associates [H+A], 2014). Data collected to date have not shown a definitive correlation linking these sources to the observed 40th & OSB site contamination. However, ADEQ suspects that a source of the PCE detected in the groundwater at the 40th & OSB site is from the 48th & IS site. Additional investigation and data evaluations are currently being performed at the 40th & OSB site to help in determining the source(s).

1.4 Hydrogeology

The aquifer underlying the Sites is known as the Upper Alluvial Unit (UAU) Aquifer. The UAU extends to depths of approximately 400 feet bgs in the surrounding area (Brown and Pool, 1989). It consists of basin fill sediments of sand and gravel proximal to the Salt and Gila Rivers and at the basin margins. In areas distal to the basin margins, which include the Site, the UAU is silt and sand and is significantly less thick. At the Sites, the depth of the UAU ranges from 215 feet bgs at well SMW-16B to greater than 295 feet bgs at well BMW-10D, where bedrock was encountered. Typically, the UAU is considered an unconfined aquifer. Shallow groundwater beneath the Site and surrounding vicinity has historically flowed southwest and has a low gradient under non-pumping conditions.

1.5 General Groundwater Quality

Groundwater beneath the Site and the surrounding area generally contain concentrations of total dissolved solids (TDS) ranging from 500 milligrams per liter (mg/L) to slightly greater than 1,000 mg/L (Brown and Pool, 1989) (Thiros, S.A. et. al., 2010). The United States Environmental Protecting Agency (USEPA) has not set a Primary Drinking Water Standard (DWS) for TDS; however, there is a US Secondary DWS of 500 mg/L. Secondary DWSs are non-enforceable standards that may cause aesthetic effects in drinking water but are not known or suspected to cause acute or chronic harm to humans. The principal ions present within local groundwater include chloride, magnesium, sodium, and calcium (Reeter and Remick, 1986).

The most recent groundwater sampling event for the Sites was conducted in December 2018. As previously stated, PCE is the lone contaminant of concern (COC) that has been detected in groundwater samples collected from monitoring wells located at the Sites. The December 2018 PCE concentrations and extents of the PCE groundwater plumes for the Sites are shown on Figure 1. The maximum PCE concentration for the 48th & IS site is 31 μ g/L at well SMW-03-60. The furthest downgradient well at the 48th & IS site reported with PCE above 5.0 μ g/L is BMW-05B at a depth of 111.7 feet bgs (7.1 μ g/L). The maximum PCE concentration for the 40th & OSB site is 40 μ g/L at well BMW-02C at a depth of 118.5 feet bgs. The furthest downgradient well at the 40th & OSB site reported with PCE above 5.0 μ g/L is BMW-14D at a depth of 245 feet bgs.

Trichloroethene (TCE) has also been detected in SRP well 17.9E-7.5N, located at the 40th & OSB Site, with a maximum concentration of 9.9 μ g/L. This is above the ADEQ AWQS of 5.0 μ g/L. Since 2015, TCE has not been detected in groundwater samples collected from the 48th & IS site wells. However, TCE was detected below 5.0 μ g/L in samples collected from BMW-02B and BMW-02C in 2015 and 2016. TCE was not detected above the AWQS of 5.0 μ g/L in the 2018 samples collected from the 40th & OSB site wells.

SRP provided the following PCE and TCE data for their wells located within and near the Sites.

SRP Well Number	ADWR 55 Registration Number	Intersection (Local Area)	Well Status	Maximum PCE Concentration (µg/L)	Most Recent PCE Concentration (µg/L)	Maximum TCE Concentration (µg/L)	Most Recent TCE Concentration (µg/L)
16.9E-6N	55-608380	30th/McDowell	Active	2.7 (2014)	0.8 (2018)	10 (2014)	3.7 (2018)
16E-6.8N	55-607726	24th/Cambridge	Active	12 (2005)	4.1 (2017)	9.9 (2006)	ND (2017)
16E-8N	55-607715	24th/Indian School	Active	2.0 (1993)	ND	0.6 (1999)	ND
17.9E-7.5N	55-617857	40th/Osborn	Active	210 (1998)	1.6 (2016)	9.9 (1996)	ND (2016)
17E-8N	55-608431	32nd/Indian School	Active	82 (1996)	0.6 (2017)	1.5	ND (2017)
17.1E-7.4N	55-607731	32nd/Osborn	Active	5.8	1.1 (2017)	ND	ND (2017)
18E-7N	55-617849	40th/Thomas	Active	ND	ND	ND	ND
18E-8.8N	55-617825	40th/Coolidge	Active	1.1	ND	ND	ND
18.5E-7N	55-607712	43rd/Thomas	Active	ND	ND	ND	ND
18.6E-7.6N	55-202398	44th/Osborn	Active	0.6	ND	ND	ND
19E-7.6N	55-608433	48th/Whitton	Active	ND	ND	ND	ND
19E-8.1N	55-607748	48th/Indian School	Active	ND	ND	ND	ND

Notes:

1. Bolded value indicates concentration detected above Aquifer Water Quality Standard.

2. Data obtained from SRP via questionnaire (See Attachment A) and SRP questionnaire provided in the 24h Street and Grand Canal Site Land and Water Use Study (H+A, 2018).

- 3. ND not detected.
- 4. μg/L microgram per liter.
- 5. PCE tetrachloroethene
- 6. TCE trichloroethene
- 7. Year sampled shown after concentration result in parenthesis; e.g., 2.7 (2014)
2.0 USE EVALUATION

The following sections outline current and foreseeable land and water uses for the Site and the surrounding area. Reasonably foreseeable uses for land are those uses of land likely to occur at the Site within a reasonable time period. Reasonably foreseeable uses of water are those likely to occur within 100 years unless a longer time period is shown to be reasonable based on site-specific circumstances [A.A.C. R18-16-406(D)].

2.1 Land and Water Use Questionnaires

In order to obtain consistent land and water use information from specified stakeholders, a standardized land and water use study questionnaire was prepared and e-mailed by ADEQ and ADEQ's consultant Wood Environment & Infrastructure Solutions, Inc. (Wood) to the two municipalities and utilities in the area of the Sites, those being the COP and the SRP. Questionnaires were completed and returned to ADEQ/Wood by COP and SRP (Attachment A).

The questionnaires requested specific information in the following areas:

- Property information;
- On-site wells;
- Water use; and
- Waste streams.

The information provided in the questionnaires was used in conjunction with the references identified in this section.

2.2 Land Use

The entire Site is located within the COP in Maricopa County. Arizona State law requires each city to have a General Plan that establishes policy for the city's physical development. The COP General Plan includes goals, policies, and recommendations to guide land use and neighborhood development for the next 10 to 20 years and beyond. Thus, most of the discussion of land use centers on the COP General Plan, most recently amended in March 2015 (COP, 2015).

The COP is comprised of 15 "urban villages" (Figure 2) (COP, 2015). The Site is located in the center of the Camelback East Village (CEV) (Figure 3) which covers an area of 36.3 square miles. CEV has two primary cores: 1) the 24th Street and Camelback Road core, comprised of office and retail shops, including movie theaters, major department stores, restaurants, and hotels; and 2) the 44th Street and Van Buren Street core area of airport and regional offices uses along with a Chinese cultural center. The area around 44th Street and Thomas Road is considered the secondary core of the village. This village offers a range of housing diversity and neighborhood types evenly split in the number of single family and multi-family residences. Areas such as the Arcadia neighborhood consist of large acre lots while higher density residential developments surround the more concentrated centers like the CEV primary core. A major portion of the housing stock was built between 1950 and 1970, but new construction of both single family and multi-family homes continues (COP, 2017a).

Additionally, the estimated 40th & OSB site plume extends to the Grand Canal near 27th Street and Oak Street (see Figure 1). Grand Canal is one of the historic canals created to deliver water to Phoenix. Grand

Canal is the oldest remaining pioneer canal on the north side of the Salt River. It was planned in 1877 and constructed in 1878 by the Grand Canal Company (SRP, 2017a). COP Street Transportation Department and COP Office of Arts and Culture is overseeing the Grand Canalscape Project which will create a nearly 12-mile continuous trail system along the Grand Canal from I-17 to the Phoenix/Tempe border (COP, 2017b).

There are five school districts represented in the entire CEV, three are located within or near the Sites: Scottsdale Unified School District, Phoenix Union School District, and Creighton School District. However, only Arcadia High School (Scottsdale Unified School District) is within the current boundary of the Sites, overlying a portion of the 48th & IS PCE groundwater plume.

Each village located within the COP has a Planning Coordinator and a Village Planning Committee who have input into planning decisions for that community and to the COP mayor and Planning Commission. Development in the area occurs consistent with zoning laws and must go through a site-planning review and permit process.

2.2.1 Current Site-Specific Land Use

Sandy's Cleaners, located at 4730 East Indian School Road in the Arcadia Towne Center, first began operations in 1966 as Cleaners by George/One Hour Martinizing. The current zoning designation for the Sandy's Cleaners property is C-1, Commercial – Neighborhood Retail (COP, 2017c). Details are provided in Figure 4 and Table 3.

2.2.2 Current Regional Land Use

2.2.2.1 48th Street and Indian School Road

Current zoning districts within the 48th & IS site are identified below and are shown on Figure 4. A more detailed description of COP zoning designations can be found in Table 3.

Zoning District	Description	Percent
C-1	Commercial – Neighborhood Retail	4.16
C-2	Commercial – Intermediate Commercial	1.31
C-0	Commercial Office – Restricted Commercial (CO prior to 1986)	6.06
PAD-9	Planned Area Development	21.37
R-4	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 29 to 30.45 or 34.8 w/bonus)	1.09
R-5	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 43.5 to 45.68 or 52.2 w/bonus)	7.66
R-O	Residential Office – Restricted Commercial	0.25
R1-10	Single Family Residence (density range of 3 to 3.5 or 4.5 w/bonus)	11.44
R1-6	Single Family Residence (Density range of 5 to 5.5 or 6.5 with bonus)	46.67

48th & Indian School Site

In their questionnaire (Attachment A), the COP identified the following land uses in the vicinity of the 48th & IS site; commercial, retail, office, multi-family, single family, parking, and school (Arcadia High School).

2.2.2.2 40th Street and Osborn Road

Current zoning districts within the 40th & OSB site are identified below and are shown on Figure 4. A more detailed description of COP zoning designations can be found in Table 3.

Zoning District	Description	Percent	
C-1	Commercial – Neighborhood Retail	3.00	
C-2	Commercial – Intermediate Commercial	9.26	
P-1	Passenger Automobile Parking, Limited (Surface parking)	0.22	
PAD-13	Planned Area Development (No longer available for rezoning)	0.66	
R1-6	Single Family Residence (Density range of 5 to 5.5 or 6.5 with bonus)	45.96	
P_3	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus)	18.26	
K-5	(Attached 14.5 to 15.23 or 17.4 w/bonus)	10.20	
P_3A	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus)	0.28	
N-JA	(Attached 22 to 23.1 or 26.4 w/bonus)	0.20	
P_/I	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus)	11.06	
11-4	(Attached 29 to 30.45 or 34.8 w/bonus)	11.00	
R-4A	Multi Family Residence	0.38	
DC	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus)	10.02	
C-7	(Attached 43.5 to 45.68 or 52.2 w/bonus)	10.92	

40th & OSB Site

In their questionnaire (Attachment A), the COP identified the following land uses in the vicinity of the 40th & OSB site; single family, schools, multi-family, trailer park, commercial-retail, office, park, and COP public pool.

2.2.3 Future Land Use

The CEV Planning Coordinator and CEV Planning Committee meet regularly to accept and review requests for zoning changes within the CEV. The COP response to their questionnaire indicated there are no current foreseeable plans to alter current zoning districts in the Site vicinity. Property owners can file to change the zoning designation of their property. Requests for zoning changes must go through a public hearing and be approved by the City Council prior to finalization.

2.3 Groundwater Use

The Sites lie within the Phoenix Active Management Area (AMA) (Figure 5) (ADWR, 2014a). 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. An exempt well is a well with a maximum pumping capacity of 35 gallons per minute (gpm). Exempt wells may be used to withdraw groundwater only for non-irrigation purposes and are generally used for domestic purposes. All exempt wells must be registered with the ADWR. Exempt well owners are not required to report their annual pumpage volumes to ADWR. Non-exempt wells have a pumping 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 Non-exempt well owners must report their annual pumpage volumes to ADWR.

According to ADWR records, there are 15 non-exempt withdrawal wells located within 1-mile of the Sites; 13 owned and operated by SRP, one owned by COP, and one owned by Maricopa County Flood Control District (Table 4) (Figure 6) (ADWR, 2019). According to ADWR records, the COP owned well was used to fill the swimming pool at Perry Park. The well owned by Maricopa County was used for de-watering purposes. ADWR records indicate that there are five exempt withdrawal wells located within one-mile of the Sites; all five wells have an intended use for domestic irrigation (ADWR, 2019, and Attachment B). There are no grandfathered rights within the area of the Sites (ADWR, 2019). The COP and SRP have service area rights within the area of the Sites, nowever, only SRP is currently pumping groundwater from beneath the Sites.

Water levels in the UAU at the Sites have been monitored since April 1992. During the period of record for the Site monitor wells, the depth to water has ranged from approximately 20 feet bgs at 48th Street and Indian School in 1992, to approximately 80 feet bgs at 27th Street and Oak Street in 2018. Groundwater elevations measured in Site wells during November 2018 are depicted on Figure 7. The direction of groundwater flow historically has been to the southwest at a gradient of approximately 0.007 to 0.010 feet/foot. Vertical gradients between the shallow and deeper zones of the UAU monitored at the Site are generally negligible.

2.3.1 Municipality and Utility Groundwater Use

The COP and SRP pump groundwater are needed when surface water supplies cannot meet their customer needs. The following sections discuss the current and future groundwater uses of the COP and SRP.

2.3.1.1 Current City of Phoenix Needs

The COP relies on four primary water supply sources: SRP, Central Arizona Project (CAP), groundwater pumped from COP wells, and reclaimed water (COP, 2011). SRP supplies water from the Salt and Verde Rivers to eligible lands within the Phoenix service areas which are generally south of the Arizona Canal. The remainder of the service area is supplied primarily by Colorado River water delivered by the CAP. Groundwater wells and reclaimed water make up the remainder of the COP water supplies. During normal supply years, approximately 50% of the COP water supply comes from SRP; 44% is from CAP; and approximately 3% is from groundwater pumpage and 3% reclaimed water. When SRP and/or CAP water supplies are reduced, the COP supplements water supplies with groundwater pumped from COP wells (COP, 2011).

Because of groundwater quality degradation due to the presence of industrial solvents such as PCE and TCE, the COP has abandoned or discontinued use of 20 wells (COP, 2011). This has resulted in a loss of approximately 23 million gallons per day (mgd) of groundwater production.

The City of Phoenix total loss of well production due to elevated concentrations of organic and inorganic substances exceeds 90,000 acre-feet/year (af/yr), according to the Water Resources Plan (COP, 2011) as a result of the closure of more than 60 wells (60% of the total production capacity of all COP wells). Any of these wells, if returned to service in the future, will require cleanup of the contaminated aquifers or the installation and operation of expensive wellhead treatment systems. No COP wells exist within 1-mile of the Sites contaminant plumes (Figure 6).

2.3.1.2 Future City of Phoenix Needs

According to information provided by COP, since 2002 (a peak demand year), the total water demand declined by more than 16%, although the service population of COP increased by approximately 8% (COP, 2011). The decrease in overall per-capita total water demand has been attributed to the increased efficiency in water use which declined by 25% between 1996 and 2011. Contributing factors in the decrease include improved plumbing fixture standards, smaller residential lots, fewer new pools, increased installation of desert landscaping in both new and existing homes, increased customer "water awareness," and higher water rates.

Regional economic conditions are a large component of the future water demands, as well as the Phoenix General Plan for land development and recent trends in residential and commercial development. Growth projections for COP reflect annual growth rates of 1.0% (high), 0.8% (base level) and 0.6% (low) and are assumed to top out in the 2045-2055 period based on current COP boundaries. The low projection assumes that service area growth occurs at a slow pace and that existing customers continue to become more efficient without further incentives or regulation (moderate level). The high demand line reflects fast or high-density growth and no further efficiency improvements for existing and new customers. These rates are lower than those experienced during the 1990s and early 2000s; as of spring 2011, data indicate the actual growth rate for COP could be lower or stagnant for the next 5-10 years. The COP estimates that a "base level" consumption growth will develop at today's efficiency levels and that current customers will remain stable. Possible "moderate efficiency" consumption gains are estimated at a 10% consumption reduction for existing customers and 5% reduction for post-2010 development by 2035. "High efficiency" consumption gains are estimated at a 20% reduction in consumption for existing customers and a 10% reduction for post-2010 customers by gain by 2035. However, there are numerous factors associated with growth and consumption that cannot be fully predicted and the consequences of this possible leveling off or increasing of demand will continue to be addressed in the COP General Plan and Water Resource Plan.

Uncertainty also exists regarding water resources and the ability to meet current and future demands (COP, 2011). The following items may affect the available COP water supply:

- Cyclical drought;
- Increasing demands in the Upper Colorado River Basin States (Utah, Colorado, Wyoming and New Mexico) affecting Arizona's supply of Colorado River water;
- The availability of water supplies from the Arizona Water Banking Authority to the CAP to offset shortages;
- Climate variability impacts on long-term flows, reservoir storage and deliveries by SRP and CAP;
- The probability of low reservoir conditions occurring in both watersheds simultaneously;
- State legal, institutional, or policy changes impacting surface water availability;
- The availability and volume of groundwater supplies without aquifer replenishment; and
- Impacts of increased groundwater pumping in the SRP watershed on river flow and reservoir storage.

If Colorado River flow should decline, allotment of CAP water for the COP and surface water supplies from SRP may be reduced if reservoir levels drop substantially and groundwater pumping cannot compensate 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 (Figure 8).

However, high increases in consumption coupled with severe reductions in surface water supplies could require that COP begin to tap its reserves in groundwater by 2025 (COP, 2011) (Figure 9).

As part of their long-term deficit plan, COP developed a strategy to address a reasonable "worst case". These extreme conditions were modeled to represents deeper shortages than those observed in historic records. The "severe shortage" model scenario combined with the "high demand" scenario produces a maximum deficit of 165,000 af in the latter part of the 50-year planning horizon (COP, 2011).

Managing water use can be accomplished by continuing to increase efficiency of water distribution, curtailing demand, and monetary incentives, which can be addressed through infrastructure improvements, conservation programs, drought management plan, and water pricing strategies (COP, 2011). Alternate sources of water include expanded groundwater pumping, accessing water that has been stored for future use, importing water from the McMullen Valley farm, and purchasing water from other water providers (COP, 2011).

Besides obtaining additional surface water supplies, local groundwater is the most accessible alternate water source (COP, 2011). The COP has access to more than 3.5 million acre-feet (af) of groundwater in the Phoenix service area over a 100-year period. Currently, the COP can produce 28 mgd (15,000-20,000 af) per year, but only withdraws between 6,000 and 9,000 af/yr. Pumping capacity has been lost in the past two decades due to aquifer contamination and aging well conditions.

The most accessible alternate water source for COP is local groundwater; planning is ongoing for the expansion of well capacity within the service area (via well rehabilitation or the development of new service area wells). The COP plans to develop 15 additional wells at a cost of \$233 million to yield approximately 70,000 af/yr; 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 (COP, 2011). Recent well development by the COP has occurred in northeast Phoenix area. However, as indicated in the COP questionnaire response, the COP currently has no plans to develop groundwater near or within the Site but will consider the area for well development in the future. Therefore, the potential exists for the COP to install future municipal wells within the Site or within one mile of the Site plume.

2.3.1.3 Current Salt River Project Needs

As a water supplier, SRP delivers approximately 800,000 acre-feet of water to the Phoenix area each year. In normal runoff years, most of the water is supplied from surface water on the Salt and Verde Watersheds. However, in more dry years, more groundwater must be pumped to supplement the surface water supply. During extended periods of low run off, groundwater can account for almost one-third of the total SRP water supply. Approximately 28 percent of the average annual municipal water demand in the Phoenix AMA, from 2001-2005, was supplied by groundwater (ADWR, 2014c).

Typically, groundwater comprises approximately 15% of the total water supplied by SRP to municipal treatment plants. The groundwater contribution varies seasonally with the highest contribution occurring March through August.

SRP operates and maintains nine (9) irrigation wells within one mile of the boundaries of the use study. An additional three wells are located within two miles. SRP reported the most recent PCE concentrations in the wells historically containing PCE these wells as follows:

SRP Well Number	ADWR 55 Registration Number	Approximate distance from Sites	Intersection (Local Area)	Most Recent PCE Concentration (µg/L)	
16.9E-6N	L6.9E-6N 55-608380 0.5 miles south of 40th & OSB site		30th/McDowell	0.8 (2018)	
16E-6.8N	55-607726	0.7 miles west of 40th & OSB site	24th/Cambridge	4.1 (2017)	
16E-8N	55-607715	1.3 miles northwest of 40th & OSB site	24th/Indian School	ND	
17.9E-7.5N	55-617857	Within 40th & OSB site	40th/Osborn	1.6 (2016)	
17E-8N	55-608431	1.5 miles northwest of 40th & OSB site	32nd/Indian School	0.6 (2017)	
17.1E-7.4N	55-607731	0.5 miles south of 40th & OSB site	32nd/Osborn	1.1 (2017)	
18E-7N	55-617849	0.7 miles southeast of 40th & OSB site	40th/Thomas	ND	
18E-8.8N	55-617825	1.5 mile to the north of 40th & OSB site	40th/Coolidge	ND	
18.5E-7N	55-607712	0.7 miles southeast of 40th & OSB site	43rd/Thomas	ND	
18.6E-7.6N	55-202398	0.43 miles southeast of 40th & OSB site	44th/Osborn	ND	
19E-7.6N	55-608433	0.3 miles southeast of 48th & IS site	48th/Whitton	ND	
19E-8.1N	55-607748	0.11 miles east of 48th & IS site	48th/Indian School	ND	

Notes:

1. Distance is presented as shortest distance to plume boundary presented in Figure 1.

 Bolded value indicates concentration detected above the Arizona Department of Environmental Quality Aquifer Water Quality Standard of 5.0 µg/L.

 Data obtained from SRP via questionnaire (see Attachment A) and SRP questionnaire provided in the 24h Street and Grand Canal Site Land and Water Use Study (H+A, 2018).

4. ND – not detected.

5. $\mu g/L$ – microgram per liter.

6. PCE - tetrachloroethene

As indicated above, no SRP wells area of the Sites had PCE concentrations above the AWQS of 5.0 μ g/L. Groundwater pumpage at these wells has been intermittent in the recent past, but the wells can be activated at any time.

2.3.1.4 Future Salt River Project 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 system. Based on demand analysis, SRP has indicated it will continue to need the wells in the area to remain operational, especially during dry years.

SRP anticipates all its properties in the vicinity of ECP WQARF Area will remain in use over the next 100 years. Additionally, SRP anticipates that its groundwater supply wells that are in the vicinity will transition from irrigation to municipal service (potable supply) within this time period.

Water shortage is an issue that can impact this Site and all of metropolitan Phoenix. As water quality issues compound the demand concerns already present with regard to anticipated climate change and already

stressed water supplies. Water quality is a significant issue, as discussed above SRP expects its groundwater supply wells in the Site area will transition to potable supply in the future. The importance of groundwater and the ability to utilize the aquifer in local and large-scale water management scenarios is critical to the future growth and wellbeing of the entire Phoenix metro-area. According to the questionnaire response, SRP does not plan on installing any new wells at the Sites; however, this could change pending COP water needs.

2.3.2 Private Groundwater Use

As discussed above, five exempt wells are located within 1-mile of the Sites; all five wells have an intended use for domestic irrigation (ADWR, 2019, and Attachment B). There is no documented private drinking use of groundwater within the Site (ADWR, 2019).

2.4 Surface Water Use

The nearest surface water bodies to the Sites are the Arizona Canal and the Grand Canal (see Figure 1). The Arizona Canal is located approximately 0.17 miles from the nearest point on the 48th & IS plume. The Grand Canal intersects the 40th & OSB plume at Oak Street. The area of the Sites is situated within an active flood irrigation district of SRP, which receives water from the Arizona and Grand Canals via SRP lateral canals (Salt River Valley Water Users' Association, 1980) (Figure 10). This water is used for residential irrigation. The laterals also receive water from SRP wells in the area. Future plans for the Grand Canal include a drinking water treatment plant that may be constructed at the end of the Grand Canal. The construction of the treatment plant would change the end use of the canal water requiring that water discharged to the canal meet stricter water quality criteria than what is currently required.

3.0 SUMMARY OF USES

The land and water uses described in Section 2.0 that are most likely to be relevant to the discussion of remedial objectives are presented below.

3.1 Land Use

The zoning pattern in the area has been long established and there are no foreseeable changes for the future. Land uses for this Site are expected to remain predominantly residential.

3.2 Groundwater Use

Current and future groundwater uses within the Site include the following:

- The COP anticipates the possible need for additional wells in and adjacent to the Site sometime in the future.
- The SRP owns 12 wells in and adjacent to the Sites and will continue to need the wells to be operational to supplement surface water supplies. SRP has indicated that they may change water usage from irrigation to drinking water within the foreseeable future.

3.3 Surface Water Use

Currently, surface water uses within the Site are only for residential irrigation.

4.0 **REFERENCES**

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TABLES



TABLE 1 WELL CONSTRUCTION DATA

EAST CENTRAL PHOENIX WATER QUALITY ASSURANCE REVOLVING FUND SITE 48TH STREET AND INDIAN SCHOOL ROAD SITE

ECP SUB AREA	WELL ID		DATE COMPLETED	DRILLING METHOD	NG METHOD BORING BORING DEPTH (FEET BGS) (NCUES) (NETT BCS) (TEET		BENTONITE SEAL (FEET BGS) (FEET ASMI) (FEET ASMI)		GROUND SURFACE ELEVATION (1)	E LOCATION COORDINATES (2)					
		NOMBER			(INCHES)		(INCHES)	(FEET BGS)	(FEET BGS)			(FEET ASML)	(FEET ASML)	LATITUDE (DEG)	LONGITUDE (DEG)
48	SRP19E-8.1N	617857	6/1/1971	Cable Tool	18	300	Steel / 18 /Louver	82 - 261	NR	NR	NR	NR	NR		
48	ECP-01	587191	8/2/2001	Dual Tube Rotary	11	71.0	PVC / 6 / 0.020	10 - 70	10 - 71	#10-20 Sand	NR	1241.28	1241.53	33.4953	-111.9802
48	ECP-02	587192	7/19/2001	Sonic	8.625	125.0	PVC / 4 / 0.010	85 - 120	80 - 125	#10-20 Sand	NR	1244.49	1244.74	33.7287	-111.9793
48	ECP-03	587193	7/19/2001	Sonic	8.625	55.0	PVC / 4 / 0.010	10 - 50	10 - 55	#10-20 Sand	NR	1244.35	1244.95	33.4954	-111.9793
48	SMW-01	533298	4/1/1992	Hollow Stem Auger	6.25	55.0	PVC / 4 / 0.010	15 - 55	14 - 55	#10-20 Sand	8 - 14	1241.21	1241.82	33.4953	-111.9802
48	SMW-02	535795	7/31/1992	Hollow Stem Auger	6.25	55.0	PVC / 4 / 0.020	15 - 55	13 - 55	#10-20 Sand	10 - 13	1248.61	1248.88	33.4961	-111.9782
48	SMW-03-060*	543424	5/9/1994	Hollow Stem Auger	8.25	140.0	PVC / 2 / 0.020	13 - 60	11 - 65	#10-20 Sand	9 - 11	1236.71	1237.47	33.6779	-111.9822
48	SMW-03-138*	543424	5/9/1994	Hollow Stem Auger	8.25	140.0	PVC / 2 / 0.020	100 - 140	92 - 140	#10-20 Sand	65 - 92	1236.66	1237.47	33.6779	-111.9822
48	SMW-04	907363	12/11/2007	Sonic	8.625	60.0	PVC / 4 / 0.020	20 - 60	17 - 60	8/12 Sand	15 - 17	1238.40	1238.72	33.4950	-111.9809
48	SMW-05	908628	3/18/2008	Hollow Stem Auger	10	60.0	PVC / 4 / 0.020	20 - 60	18 - 60	8-12 Sand	15 -18	1239.50	1239.76	33.4953	-111.9809
48	SMW-06	914016	4/10/2012	Hollow Stem Auger	10	60.0	PVC / 4 / 0.020	20 - 60	17 - 60	8 - 12 Sand	15 - 17	1227.84	1228.12	33.4932	-111.9831
48	SMW-07	913979	1/12/2012	Hollow Stem Auger	10	60.0	PVC / 4 / 0.020	20 - 60	17 - 60	#10-20 Sand	15 -17	1240.43	1240.75	33.4950	-111.9802
48	SIMW-08	913980	1/13/2012	Hollow Stem Auger	10	60.0	PVC / 4 / 0.020	20 - 60	17 - 60	#10-20 Sand	15 - 17	1243.65	1244.02	33.4956	-111.9801
48	BMW-05A	916202	1/9/2014	Sonic	8.625 6.0	66.0 67.0	PVC / 4 / 0.020	29.6 - 64.6	26.3 - 66.0	#10-20 Sand	23.0 - 26.3	1212.81	1213.29	33.4925	-111.9895
48	BMW-05B	916203	1/10/2014	Sonic	8.625 6.0	115.0 116.0	PVC / 4 / 0.020	75.1 - 115.1	68.8 - 115.5	#10-20 Sand	63.2 - 68.8	1212.87	1213.41	33.4925	-111.9895
48	BMW-06A	916204	1/9/2014	Sonic	8.625 6.0	61.0 62 5	PVC / 4 / 0.020	30.3 - 60.3	27.0 - 60.5	#10-20 Sand	23.0 - 27.0	1214.27	1214.73	33.4908	-111.9865
48	BMW-06B	916205	1/10/2014	Sonic	8.625	120	PVC / 4 / 0.020	75.4 - 110.4	72.0 - 111.0	#10-20 Sand	68.0 - 72.0 111.0 - 115.0	1214.50	1215.09	33.4908	-111.9865
48	SMW-11	918939	5/19/2016	Sonic	8.625	165.00	PVC / 4 / 0.020	50.2 - 70.2	48 - 71	#10-20 Sand	42.8 - 48	1221.38	1221.99	33.4929	-111.9856
48	SMW-12	919290	5/27/2016	Sonic	8.625	180.00	PVC / 4 / 0.020	144.9 - 164.9	143 - 166	#10-20 Sand	133.5 - 143	1212.19	1212.70	33.4915	-111.9886
48	SMW-16B	921439	3/16/2018	Sonic	8.25 6.125	214.0 216.0	PVC / 4 / 0.020	90.7 - 130.7	87.8 - 131.2	#10-20 Sand	80.2 - 87.8	1240.24	1240.67	33.4950	-111.9802
48	BMW-12B	922019	10/26/2018	Sonic	9.0	185.0	PVC / 4 / 0.020	120.0 - 170.0	118.0 - 172.0	#10-20 Sand	116.0 - 118.0	1209.13	1209.54	33.4746	-111.9904

NOTES:

* wells installed within the same borehole

(1) NAVD88

(2) GRID, NAD83, Arizona Central 202

48 East Cental Phoenix Water Quality Assurance Revolving Fund Site - 48th Street and Indian School Road Site

ADWR Arizona Department of Water Resources

FEET BGS feet below ground surface

FEET AMSL feet above mean sea level

NR Not Reported

Sonic Rotosonic drilling method

SRP Salt River Project

TABLE 2 WELL CONSTRUCTION DATA

EAST CENTRAL PHOENIX WATER QUALITY ASSURANCE REVOLVING FUND SITE 40TH STREET AND OSBORN ROAD SITE

ECP SUB AREA	WELL ID	ADWR REGISTRATION NUMBER	DATE COMPLETED	DRILLING METHOD	BORING DIAMETER	BORING DEPTH (FEET BGBS)	CASING MATERIAL/ PERFORATED DIAMETER/ SLOT SIZE INTERNAL		SAND PACK INTERVAL	ND PACK TERVAL MATERIAL		TOP OF CASING ELEVATION (1)	GROUND SURFACE ELEVATION (1)	LOCATION COORDINATES (2)		
		(55-)			(INCHES)		(INCHES)	(FEET BGS)	(FEET BGS)		(FEET BGS)	(FEET ASML)	(FEET ASML)	LATITUDE (DEG)	LONGITUDE (DEG)	
40 a sh		(17057	E /1 /10CE	Cable Teel	ND	200	Steel / 19. / Deuteneted	100.0 200.0	48.0 200.0	Craval	ND	ND	1102	ND	ND	
400sb	BMW-01A	598109	6/2/2003	Hollow Stem Auger	10	91	PVC / 4 / 0.020	20 - 60	48.0 - 300.0 15 - 63	#10-20 Sand	11 - 15	1193.20	1193	33.4877	-111.9961	
40osb	BMW-01B	909970	12/4/2008	Hollow Stem Auger	8	100	PVC / 2 / 0.020	70 - 100	65 - 100	#10-20 Sand	<u>59 - 65</u>	1193 59	1194 34	33 4878	-111 9961	
40osb	BMW-02A*	908743	4/18/2008	Sonic	10	61	PVC / 2 / 0.020	20 - 60	15 - 61	8/12 Sand	10 - 15	1199.66	1200.06	33.4901	-111.9946	
40osb	BMW-02B*	908743	4/18/2008	Sonic	10	100	PVC / 2 / 0.020	70 - 100	65 - 100	8/12 Sand	10 - 15 61 - 65	1197.98	1200.06	33.4901	-111.9946	
40osb	BMW-02C	917659	3/18/2015	Sonic	8.25 7.125	139.8 140.6	PVC / 4 / 0.020	109.5 - 139.5	106.7 - 140.6	#10-20 Sand	101.6 - 106.7	1199.53	1199.99	33.4067	-111.9946	
40osb	BMW-03A*	908744	5/16/2008	Hollow Stem Auger	10	60.5	PVC / 2 / 0.020	20 - 60	15 - 60.5	8/12 Sand	10 - 15	1201.09	1201.32	33.4895	-111.9929	
40osb	BMW-03B*	908744	5/16/2008	Hollow Stem Auger	10	98.3	PVC / 2 / 0.020	70 - 100	65 - 101	8/12 Sand	10 - 15 61 - 65	1201.12	1201.32	33.4895	-111.9929	
40osb	BMW-04B	916201	1/3/2014	Sonic	8.625 6.0	120.0 121.7	PVC / 4 / 0.020	78.8 - 118.8	75.4 - 121.7	#10-20 Sand	71.6 - 75.4	1200.32	1200.90	33.4888	-111.9920	
40osb	BMW-04A	916200	1/4/2014	Sonic	8.625 6.0	70.0 71.1	PVC / 4 / 0.020	30.0 - 70.0	27.0 - 71.1	#10-20 Sand	23.5 - 27.0	1200.37	1200.86	33.4888	-111.9920	
48	BMW-05A	916202	1/9/2014	Sonic	8.625 6.0	66.0 67.0	PVC / 4 / 0.020	29.6 - 64.6	26.3 - 66.0	#10-20 Sand	23.0 - 26.3	1212.81	1213.29	33.4925	-111.9895	
48	BMW-05B	916203	1/10/2014	Sonic	8.625 6.0	115.0 116.0	PVC / 4 / 0.020	75.1 - 115.1	68.8 - 115.5	#10-20 Sand	63.2 - 68.8	1212.87	1213.41	33.4925	-111.9895	
48	BMW-06A	916204	1/9/2014	Sonic	8.625 6.0	61.0 62.5	PVC / 4 / 0.020	30.3 - 60.3	27.0 - 60.5	#10-20 Sand	23.0 - 27.0	1214.27	1214.73	33.4908	-111.9865	
48	BMW-06B	916205	1/10/2014	Sonic	8.625	120	PVC / 4 / 0.020	75.4 - 110.4	72.0 - 111.0	#10-20 Sand	68.0 - 72.0 111.0 - 115.0	1214.50	1215.09	33.4908	-111.9865	
40osb	BMW-07A	916198	12/29/2013	Sonic	8.625 6.0	70.0 74.0	PVC / 4 / 0.020	29.6 - 69.6	26.0 - 70.0	#10-20 Sand	23.0 - 26.0	1189.22	1189.74	33.2034	-111.9982	
40osb	BMW-07B	916199	12/28/2013	Sonic	8.625 6.0	115.0 116.0	PVC / 4 / 0.020	85.0 - 115.0	80.0 - 116.0	#10-20 Sand	70.0 - 80.0	1189.20	1189.72	33.4868	-111.9982	
40osb	BMW-09D	921211	4/2/2018	Sonic	8.25 6.125	234.5 288.0	PVC / 4 / 0.020	180.7 - 230.7	176.5 - 234	#10-20 Sand	170.5 - 176.5	1170.44	1170.77	33.4823	-112.0069	
40osb	BMW-10D	921212	4/25/2018	Sonic	8.25 6.125	233.0 293.0	PVC / 4 / 0.020	230.6 - 280.6	227.5 - 280.6	#10-20 Sand	221.5 - 227.5	1148.63	1149.67	33.4765	-112.0339	
40osb	BMW-11D	921213	5/9/2018	Sonic	8.25 6.125	233.0 241.0	PVC / 4 / 0.020	151.0 - 211.0	148.0 - 214.0	#10-20 Sand	140.0 - 148.0	1180.11	1180.61	33.4828	-111.9998	
48	BMW-12B	922019	10/26/2018	Sonic	9.0	185.0	PVC / 4 / 0.020	120.0 - 170.0	118.0 - 172.0	#10-20 Sand	116.0 - 118.0	1209.13	1209.54	33.4746	-111.9904	
40osb	BMW-14D	922019	10/31/2018	Sonic	9.0	300.0	PVC / 4 / 0.020	225.0 - 275.0	223.0 - 277.0	#10-20 Sand	221.0 - 223.0	1135.93	1136.31	33.4730	-112.0239	

NOTES:

* wells installed within the same borehole

(1) NAVD88

(2) GRID, NAD83, Arizona Central 202

40osb East Cental Phoenix Water Quality Assurance Revolving Fund Site - 40th Street and Osborn Road Site

48 East Cental Phoenix Water Quality Assurance Revolving Fund Site - 48th Street and Indian School Road Site

ADWR Arizona Department of Water Resources

FEET BGS feet below ground surface

FEET AMSL feet above mean sea level

NR Not Reported

Sonic Rotosonic drilling method

SRP Salt River Project

 TABLE 3

 City of Phoenix Zoning Districts with Brief Descriptions

Zoning District	Description
S-1	Ranch or Farm
S-2	Ranch or Farm Commercial
PE-13	One Family Residence (13 560 sq. ft. min)(No longer available for rezoning)
	One Family Residence (44,000 sq. it. min.) (No longer available to rezoning)
RE-24	One Family Residence (24,000 sq. ft. min.)(No longer available for rezoning)
R1-14	One Family Residence (14,000 sq. ft. min.)(No longer available for rezoning)
RE-35	Single Family Residence (density range of 1.1 to 1.15 or 1.32 w/ bonus)
R1-18	Single Family Residence (density range of 1.95 to 2.05 or 2.34 w/bonus)
R1-10	Single Family Residence (density range of 3 to 3 5 or 4 5 w/bonus)
R1-8	Single Family Residence (density range of 4 to 4.5 or 5.5 w/bonus)
	Single Family Residence (density range of F to 4.5 or 5.5 w/bonds)
R1-6	Single Family Residence (density range of 5 to 5.5 of 6.5 w/bonus)
R-2	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 10 to
	10.5 or 12 w/bonus)
R-3	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 14.5 to
	15.23 or 17.4 w/bonus)
R-3A	Multiple Family Residence (Detached SE 5 to 6 5 or 12 w/bonus) (Attached 22 to
	231 or 264 w/honus
	Multiple Eamly Basidance (Detached SE 5 to 6 5 or 12 w/banus) (Attached 20 to
ν-4	Multiple Failing Residence (Detached SF 5 to 6.5 of 12 wibbinds) (Attached 29 to
	30.45 of 34.8 W/Donus)
R-5	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 43.5 to
	45.68 or 52.2 w/bonus)
R-4A	Multiple Family Residence (Dependent on lot area and unit type)
R-0	Residential Office – Restricted Commercial
	Commercial Office - Restricted Commercial (C-O prior to 1096)
	Commercial Office Constrat Office Online (U-O prior to 1900)
U-0/M-0	Commercial Office – Major Office Option (Minimum 5 gross acres)
C-1	Commercial – Neighborhood Retail
C-2	Commercial – Intermediate Commercial
C-3	Commercial – General Commercial
CP/SU	Commerce Park – Single User Ontion
	Commerce Park - Research Park Ontion
	Commerce Park – Business Park Option
CP/GCP	Commerce Park – General Commerce Park Option
IP or Ind. Pk.	Industrial Park (See CP) (No longer available for rezoning)
A-1	Light Industrial
A-2	Industrial
RH	Resort
	Posidential Infill (Combined w/underlying zening)
	Nesidential mini (combined widhdenying zoning)
	High-Rise and High Density (Combined W/underlying zoning)
HR1	High-Rise and High Density (Downtown Area) (Combined w/underlying zoning)
HRI	High-Rise Incentive – High-Rise and Mixed Use (Combined w/underlying zoning)
MR PAD	Mid-Rise (Combined w/underlying zoning)
PCD	Planned Community District (Combined w/underlying zoning or approved zoning)
PSC	Planned Shopping Center (No longer available for rezoning)
RSC	Pagional Shopping Center (No longer available for rezoning)
	Regional shopping center (No longer available nezoning)
	Passenger Automobile Parking, Linneu (Sunace parking)
P-2	Parking (Surface parking and parking structures)
GC	Golf Course
UR	Urban Residential (May apply between 7th Ave. to 7th St. & Lincoln St. to Grand
DC	Downtown Core (Underlying zoning for Fillmore to Harrison & 7th St. to 3rd Ave.)
W	Warehouse Overlay (Combined w/underlying zoning) (Applies to specific area near
Warehouse Parking	(Combined w/underlying zoning)
Capitol Mall Overlay	(Combined w/underlying zoning) (Applies to specific area near the Capitol)
	Special Dermit (Combined w/underlying zening) (Allews a number of area if a sector
	Special Fernin (Combined w/undenying Zoning) (Allows a number of specific Uses not
	Ivixed Use Agricultural (Should be designated as MUA on the General Plan)
HCRO	Historic Canal-Side Restaurant Overlay (Combined w/underlying zoning) (Applies to
Baseline Area Overlay	(Combined w/underlying zoning) (Applies between Central to 40th St. & Southern to
Arcadia Camelback Special Planning District	(Combined w/underlying zoning) (Applies along Camelback Rd. from 44th St. to the
Desert Character Overlay	(Combined w/underlying zoning) (Applies to North Land Use Plan area)
NBCC	North Black Canvon Overlay (Combined w/underlying zoning) (Specific guidelines for
RSIO	Rio Salado Interim Overlay (Combined W/underlying zoning) (Applies between L17/L
	Historia Prosorvation Overlay (Combined w/underlying zoning) (Applies Delween I-17/I-
	nistone Preservation Overlay (Combined w/underlying 20111g)
	Central City South Interim Overlay (Combined w/underlying zoning) (Applies to
Four Corners Overlay	(Applies to specific area near 24th St. & Broadway Rd.)
SPVTABDO	South Phoenix Village and Target Area B Design Overlay (Applies to specific areas
PSC Overlay	Planned Shopping Center Overlay
SPD	Special Planning District (Combined w/underlying zoning) (Applies to specific
EBRO	East Buckeye Road Overlay District (Combined w/underlying zoning) (Applies to
	Deer Valley Airport Overlay District (Combined W/underlying zoning) (Applies to
	Arte, Culture and Creal Duciness Overlay District (Combined W/Underlying 2011ing) (Applies to
	Arts, Culture and Small Business Overlay District (Combined w/underlying zoning)
нко	Hatcher Road Overlay (Combined w/underlying zoning) (Applies to specific area on
Downtown Code	A code to implement the Downtown Phoenix Plan increased mix of land uses, and
PUD	Planned Unit Development Individually tailored standards to create a built
TOD-1	Interim Transit-Oriented District One. to encourage appropriate mixture/density of
	Interim Transit-Oriented District Two, to encourage appropriate mixture/density of
	Reventh Avenue Lithen Mein Street Overlay District (Combined w/w darking area is a)
	Sevenin Avenue Orban Main Street Ovenay District (Combined W/underlying Zoning)
NCASPD	North Central Avenue SPD Overlay District (Combined w/underlying zoning) Provide
	Airport Noise Impact Overlay District (Combined w/underlying zening) (Applies to
	Aliport Noise Impact Overlay District (Combined W/underlying Zoning) (Applies to

Note: See Section 608 of the Zoning Ordinance to calculate bonus points for residential development.

Source: www.phoenix.gov/pdd/pz

Revised 7/3/13

TABLE 4

GROUNDWATER WITHDRAWAL WELLS WITHIN ONE MILE OF THE SITE EAST CENTRAL PHOENIX 40TH STREET AND OSBORN ROAD SITE **REMEDIAL INVESTIGATION - LAND AND WATER USE SURVEY**

						WELL DEPTH	CASING DEPTH	CASING DIAMETER	APPLICATION	INSTALLED	WATER LEVEL	PUMP RATE	UTM-X	UTM-Y
55-REGISTRY ID	GWSI SITE	CADASTRAL	OWNER NAME	SRP Well No.	WELL TYPE	(FT BGS)	(FT BGS)	(IN)	DATE	DATE	(FT BGS)	(GPM)	(METERS)	(METERS)
202398	332918111590701	A02004030ACC	Salt River Project	18.6E-7.6N	Non-Exempt	207	207	21	3/15/2004	12/30/2004	27	0	408419.8	3705868
501994	NR	A0200403BCA	Peterson, D D	NA	Exempt	65	85	4	*2/3/1982	1/1/1981	19	0	407829.4	3706089
607672	332853112000801	A02003025DCC	Salt River Project	17.5E-7N	Non-Exempt	202	188	12	*5/18/1982	10/1/1923	89	563	406803.9	3705103
607712	332849111591201	A02004030CDD	Salt River Project	18.5-7N	Non-Exempt	172	172	12	*5/18/1982	9/20/1923	17	880	408205.2	3705070
607731	332915112004301	A02003025CBB	Salt River Project	17.1E-7.4N	Non-Exempt	400	400	18	*5/18/1982	4/21/1962	53	1196	406004.9	3705727
607748	332942111584101	A02004020CCC	Salt River Project	19E-8.1N	Non-Exempt	305	305	18	*5/18/1982	6/18/1971	17	808	409232.8	3706647
608431	332941112004301	A02003025BBB	Salt River Project	17E-8N	Non-Exempt	250	250	18	*5/11/1982	8/20/1964	52	1232	406012.9	3706543
608433	332926111584101	A02004030ADA	Salt River Project	19E-7.6N	Non-Exempt	150	150	12	*5/11/1982	3/8/1921	17	500	409018.8	3706050
617825	333026111594501	A02003024ADA	Salt River Project	18E-8.8N	Non-Exempt	417	417	16	*5/26/1982	1/1/1945	37	1457	407451.9	3707744
617849	332848111594201	A02003036AAA	Salt River Project	18E-7N	Non-Exempt	305	305	18	*5/26/1982	7/16/1971	22	954	407407.3	3704891
617857	332913111594601	A02003025DAA	Salt River Project	17.9E-7.5N	Non-Exempt	300	300	18	*5/26/1982	5/4/1965	24	1114	407421.7	3705699
634799	332858111593001	A02004030CCA	Abbey, D R	NA	Exempt	100	70	4	*5/26/1982	10/1/1979	23	10	407813.3	3705284
807925	NR	A02003024DBC	Thiher, L	NA	Exempt	0	0	0	*8/24/1999	Prior to 1980	0	0	406831.8	3707137
626525	332843112004501	A02003035AAD	PHOENIX, CITY OF,	NA	Non-Exempt	218	0	20	*6/11/1982	NR	59	750	405795.1	3704710
607726	332840112014301	A02003035BBB	SALT RIVER PROJECT,	16E-6.8N	Non-Exempt	620	620	20	*5/18/1982	NR	66	1560	404396.3	3704908
608380	332754112004601	A01003002AAA	SALT RIVER PROJECT,	16.9E-6N	Non-Exempt	250	219	19	*5/11/1982	8/22/1947	86	2000	405782.4	3703288
607715	332942112014701	A02003022DDD	SALT RIVER PROJECT,	16E-8N	Non-Exempt	246	246	12	5/18/1982*	9/1/1920	70	760	404215.8	3706716
638492	NR	A02003026ACC	SHERRILL,W P	NA	Exempt	120	120	8	*6/14/1982	6/15/1953	25	30	405206.9	3705924
809877	NR	A01003002ABB	THE SECRET GARDEN	NA	Exempt	NR	NR	20	8/18/2016	NR	NR	NR	405177.4	3703294
Deventering	it Nevershar 20, 1005	Fahruary 20, 1000												

Newatering permit November 20, 1995 - February 20, 1996

552114	NR	A02004031BBB	Flood Control District, Maricopa County	NA	Non-Exempt	0	0	0	11/20/1995	NR	0	0	407607.1	3704886
Well never drilled	d								-					
623899	NR	A02004030CD0	B.O.L.S. 44 Partners	NA	Non-Exempt	0	0	0	6/14/1982	NR	0	0	408108.3	3705174
Abandoned Septe	ember 1996					62			0/17/1000				400444 5	2705466
807366	NR	A02004030DBC	Johns, R F	NA	Exempt	63	0	4	9/17/1996	NR	0	0	408411.5	3705466

Abandoned September 1990										
807366	NR	A02004030DBC	Johns, R F	NA	Exempt	63	0	4	9/17/1996	1

NOTES:

A well having a pump with a maximum capacity of not more than 35 gpm which is used to withdraw groundwater pursuant to A.R.S. § 45-454 and A.R.S. § 45-402(8). Exempt -

FT BGS -Feet below ground surface

GPM -Gallons per minute

GWSI -Groudnater Site Inventory

IN -Inches

Not Applicable NA -

NR -Not Reported

A well drilled within an active Management Area drilled pursuant to a groundwater right authorized by A.R.S. Title 45, Chapter 2, Article 5, a service area right authorized by A.R.S. Title 45, Chapter 2, Article 6, Non-exempt or a groundwater withdrawal permit authorized by A.R.S. Title 45, Chapter 2, Article 7.

* Date well registered with Arizona Department of Water Resources



FIGURES





(ft bgs) 0	Peona to zero Phoenix Scottsdale Mesa
	Logond
)	Legend
)	FY 2019 Groundwater Monitor Well
)	Groundwater Monitor Well
- 1	SRP Production Well
19	Boring Location - Abandoned
-	Approximate Distribution of PCE
1218 m	Above 5 µg/L
	Notes:
	BMW-14D Groundwater Monitoring Well Identification
	sampling
	3 Results that are red are from December 2018
	7.3 Results that are bolded and italicized equal or exceed the Aquifer Water Quality Standard of 5 µg/L
	µg/L microgram per liter
	amsl above mean sea level
	ft bgs feet below ground surface
	WQARF Water Quality Assurance Revolving Fund
id to	0 750 1,500 N
N E	Feet
et.	40th St and Osborn Rd & 48th St & Indian School Rd WQARF Sites Phoenix, Arizona
N 51st	FIGURE Site Map
- AL	Job No. 14-2018-2047 PM: JC Date: 1/18/2019 Scale: 1"= 1500'
AC	The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2018-2047. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.























Figure 4-11. Severe SRP and CAP shortage 10 year deficit scenario





¹² First shortage to CAP occurs in 2010, but deficit to Phoenix would not materialize until 2020.

Source: City of Phoenix, 2011 Water Resource Plan

Job No. 14-2018-2069 N PM: JC Job No. JOb No. Date: 1/30/2019 Image: N/A Image: N/A	40th St and Osborn Rd & 48th St and Indian School Rd WQARF Sites, Phoenix, Arizona		wood
The map shown here has been created with all due and reasonable care and is stictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2018-2080. This map has not been certified by a licensed land surveyor, and any hird party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc.assumes no liability, direct or indirect, whatsoever for any such third party use or universed use.	City of Phoenix Deficit Scenarios	FIGURE 9	





ATTACHMENT A

LAND AND WATER USE STUDY QUESTIONNAIRES



LAND AND WATER USE STUDY QUESTIONNAIRE FOR MUNICIPALITIES/COUNTIES/UTILITIES WITHIN THE EAST CENTRAL PHOENIX (48TH STREET & INDIAN SCHOOL ROAD AND 40TH STREET AND OSBORN ROAD) WQARF REGISTRY SITES

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Water user munici	pality/utility name:	City of Phoenix
Date Questionnair	e was completed:	1/14/2019
Name of person co	ompleting Questionnaire:	<u>Julie Riemenschneider, Alexandra Richards,</u> <u>Keon Montgomery, and Maja Brkovic</u>
Contact Name:	Nancy Allen	/
Title:	Environmental Programs	Administrator M
Division:	Office of Environmental	Programs
Address:	200 W. Washington St. /	14 th Floor
Phoenix, AZ 85003		

Phone Number: <u>602-256-5654</u>

1. What is the current use of your municipality's/county's/utility's property within the limits of the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites? (Boundary of 48th Street & Indian School – Devonshire Avenue to the north, 48th Street on the east, Weldon Avenue on the south, and 42nd Street on the west; and boundary of 40th Street & Osborn Road - Osborn Road on the north, 42nd Street on the east, Oak Street on the south, and 27th Street on the west).

Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd Street to the west:

Commercial, retail, Office, multi-family, single-family, parking, school, churches

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Single-family, schools, multi-family, trailer-park, commercial-retail, office, park and public pool (City of Phoenix facility)

2. Please list the municipality's/county's/utility's properties of concern/boundaries (neighborhood planning committees, zoning, canals, and wells) within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries.

Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd Street to the west:

Camelback East Village Planning Committee

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Camelback East Village Planning Committee

3. What are the foreseeable plans for the municipality's/county's/utility's property within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries as far into the future as they are known and up to 100 years, if possible?

Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd Street to the west:

44th Street Corridor Residential Office Study:

https://www.phoenix.gov/villagessite/Documents/pdd_pz_pdf_00032.pdf

44th Street Corridor Specific Plan:

https://www.phoenix.gov/villagessite/Documents/pdd_pz_pdf_00033.pdf

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

44th Street Corridor Residential Office Study:

https://www.phoenix.gov/villagessite/Documents/pdd_pz_pdf_00032.pdf

44th Street Corridor Specific Plan:

https://www.phoenix.gov/villagessite/Documents/pdd pz pdf 00033.pdf

4. Does the municipality/county/utility have a published general plan for the property within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries?

<u>Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd</u> <u>Street to the west:</u>

Yes. The 2015 Phoenix General Plan is available online at: phoenix.gov/pdd/pz/phoenix-general-plan

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Yes. The 2015 Phoenix General Plan is available online at: phoenix.gov/pdd/pz/phoenix-general-plan

5. Are parcel, zoning, or land maps available through the municipality/county/utility? Where are they located?

Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd Street to the west:

Yes. Parcel, zoning, and land use maps are available online at: phoenix.gov/pdd/pz/pzmaps

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Yes. Parcel, zoning, and land use maps are available online at: phoenix.gov/pdd/pz/pzmaps

6. Please list any specific neighborhood concern the municipality/county/utility is aware of within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries? Please list future concerns (e.g.- freeway expansion, water use, water availability, etc.).

Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd Street to the west:

Ongoing neighborhood preservation, compatibility of new developments and canalscape.

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Ongoing neighborhood preservation, compatibility of new developments and canalscape

7. Please list any future zoning plans or area plans for the municipality/county/utility within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries:

<u>Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd</u> <u>Street to the west</u>:

Canalscape

44th Street Corridor Specific Plan:

44th Street Corridor Residential Office Study:

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Canalscape

44th Street Corridor Specific Plan:

44th Street Corridor Residential Office Study:

8. Please list any "special projects" projected or anticipated within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF site boundaries:

Devonshire Avenue to the north, Weldon to the south, 48th Street to the east and 42nd Street to the west:

Canalscape

Osborn Road to the North, Oak Street to the south, 42nd Street to the East and 27th Street to the west:

Canalscape, potential Bus-Rapid Transit (BRT) on Thomas Road

9. If any property is leased (the municipality/county/utility is the lessor), how long is the lease term?

1. Pine Tower Apartments – 2936 N. 36th St. - The units at this building are leased for one year at a time. When the leases renew they renew for a one year period

Single-Family:

- 1. 2321 N 28th St.- This home is vacant and listed on the market for sale
- 2. 3034 E. Yale St. This is a multi-family property. The units at this building are leased for one year at a time. When the leases renew they renew for a one year period
- 3. 3038 E. Yale St. This is a multi-family property. The units at this building are leased for one year at a time. When the leases renew they renew for a one year period
- 4. 2524 N. 31st St. This is a multi-family property. The units at this building are leased for one year at a time. When the leases renew they renew for a one year period
- 5. 3333 E. Yale St.- This home is vacant and listed on the market for sale
- 6. 2314 N. 37th Way- This home is leased for one year at a time. When the lease renews it will renew for a one year period
- 7. 2510 N 39th Place- This home is leased for one year at a time. When the lease renews it will renew for a one year period

10. If the property is leased, are there plans to renew the lease and is so, for how long?

1. Pine Tower Apartments -2936 N. 36^{th} St. - The units at this building are leased for one year at a time. When the leases renew they renew for a one year period

Single-Family:

- 1. 2321 N 28th St. This home is vacant and listed on the market for sale
- 2. 3034 E. Yale St. This is a multi-family property. The units at this building are leased for one year at a time. When the leases renew they renew for a one year period
- 3. 3038 E. Yale St. This is a multi-family property. The units at this building are leased for one year at a time. When the leases renew they renew for a one year period.
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- 6. 2314 N. 37th Way- This home is leased for one year at a time. When the lease renews it will renew for a one year period
- 7. 2510 N 39th Place- This home is leased for one year at a time. When the lease renews it will renew for a one year period

Land and Water Use Study Questionnaire

11. Please list any environmental spill of material or waste products that has occurred within the municipality/county/utility within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries in the past 5 years?

The Office of Environmental Programs (OEP) operates the emergency hotline spill response line for the City. The following spills were called into OEP, they occurred by unknown individuals on City of Phoenix property (Streets, alleys) and were discovered during routine trash collections by the City Public Works department.

6/1/15 4010 E Pinchot (alley): 5 - 1 gallon buckets of paint, 1 spilled – KES responded and cleaned up spill and properly disposed of it.

9/2/2014 3927 E Yale: contaminated oil debris – KES responded and cleaned up contaminated debris and properly disposed of it.

12/9/2013 2840 N. 32 place (alley): 12 -1 quarts of oil, small spill area on concrete – ERI responded and cleaned up spill and properly disposed of it.

6/2/2013 - 2416 N 37^{th} Way (alley): oil spilled in alley way – a 5 gallon bucket of stained soil was removed for disposal by emergency response contractor.

12 Is the municipality/county/utility currently sampling groundwater wells within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites? If so, how often is the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater database?

No groundwater sampling is being conducted by the City at this time.

13. Does your municipality/county/utility have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide the following information:

Name:	Nancy Allen		
Contact:	Office of Environmental Programs		
Title:	Environmental Programs Administrator		
Address:	200 West Washington Street		
	Phoenix, AZ 850003		
Phone:	602-256-5654		

Land and Water Use Study Questionnaire Page 7 of 7 East Central Phoenix (48th St & Indian School Rd and 40th St & Osborn Rd) WQARF Registry Sites 14. Please indicate anticipated groundwater development by the municipality/county/utility within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries.

Groundwater development could occur within 1 mile of the WQARF site for municipal supplies during severe water supply shortages. The majority of the City's current supply for drinking water source comes from surface water which is supplied by the SRP system (Salt and Verde Rivers) and Colorado River Water (CAP water). Nearly 50% of the City of Phoenix water supply comes from the Colorado River. The Bureau of Reclamation (BOR) who manages the Lower Colorado River operations has indicated in their 24-month study report issued August 15, 2018 that shortages on the Lower Colorado River could begin as soon as 2020 with deeper cuts predicted over time. Because of this possibility, the City views all water in our service boundary as a potential water supply source in the event that CAP allocations are curtailed during a drought declaration.

15. Are there any groundwater wells owned by the water provider that have been affected by the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites? If so, please list the ADWR well identification numbers. What is the current status of these wells (e.g.- shut down, still pumping)?

No City of Phoenix wells are known to have been affected as of the date of this questionnaire.

16. What is the future use (up to 100 years) for any wells that have been impacted by the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites?

City of Phoenix currently owns no wells in this immediate area.

However, Groundwater development could occur within 1 mile of the WQARF site for municipal supplies during severe water supply shortages. The majority of the City's current supply for drinking water source comes from surface water which is supplied by the SRP system (Salt and Verde Rivers) and Colorado River Water (CAP water). Nearly 50% of the City of Phoenix water supply comes from the Colorado River. The Bureau of Reclamation (BOR) who manages the Lower Colorado River operations has indicated in their 24-month study report issued August 15, 2018 that shortages on the Lower Colorado River could begin as soon as 2020 with deeper cuts predicted over time. Because of this possibility, the City views all water in our service boundary as a potential water supply source in the event that CAP allocations are curtailed during a drought declaration.

Thank you for your time. The Project Manager, Mel Bunkers, or a representative from ADEQ's consultant, Wood Environment & Infrastructure Solutions, Inc., may follow-up on answers provided.

LAND AND WATER USE STUDY QUESTIONNAIRE FOR MUNICIPALITIES/COUNTIES/UTILITIES WITHIN THE EAST CENTRAL PHOENIX (48TH STREET & INDIAN SCHOOL ROAD AND 40TH STREET AND OSBORN ROAD) WQARF REGISTRY SITES

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Water user municipality/utility name:		Salt River Project	
Date Questionnaire was completed:		January 10, 2019	
Name of person completing Questionnaire:		Karis Nelson	
Contact Name:	Karis Nelson		
Title:	Senior Environmental Scientist		
Division:	Environmental Compliance and Permitting		
Address:	PAB 359, P.O. Box 52025		
	Phoenix, AZ 85072		
Phone Number:	602-236-2916		

1. What is the current use of your municipality's/county's/utility's property within the limits of the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites? (Boundary of 48th Street & Indian School – Devonshire Avenue to the north, 48th Street on the east, Weldon Avenue on the south, and 42nd Street on the west; and boundary of 40th Street & Osborn Road - Osborn Road on the north, 42nd Street on the east, Oak Street on the south, and 27th Street on the west).

SRP owns and operates multiple groundwater supply wells and water conveyance structures (i.e. laterals and canals) in the subject areas. Power transmission and distribution lines are also located within the East Central Phoenix (ECP) boundaries.

2. Please list the municipality's/county's/utility's properties of concern/boundaries (neighborhood planning committees, zoning, canals, wells) within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries.

SRP groundwater production wells located within the ECP WQARF sites boundaries:

18E-7N (ADWR 55-617849) 17.9E-7.5N (ADWR 55-617857) 17.1E-7.4N (ADWR 55-607731)

SRP groundwater production wells that lie within a mile of the ECP WQARF sites:

19E-8.1N (ADWR 55-607748) 19E-7.6N (ADWR 55-608433) 18.6E-7.6N (ADWR 55-202398) 18.5E-7N (ADWR 55-607712) 18E-8.8N (ADWR 55-607712) 17E-8N (ADWR 55-608431) 16.9E-6N (ADWR 55-608380) 16E-8N (ADWR 55-607715) 16E-6.8N (ADWR 55-607726)

SRP conveyance structures that lie within a mile of the ECP WQARF sites:

Arizona Canal Grand Canal Various piped laterals (also located within the boundaries of the WOARF sites)

3. What are the foreseeable plans for the municipality's/county's/utility's property within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries as far into the future as they are known and up to 100 years, if possible?

SRP anticipates that all of the properties located within and near the subject areas, including the groundwater supply wells and the conveyance structures, will remain in use over the next 100 years (See Question #2). The wells are expected to transition from irrigation water supply to also include potable water supply.
Land and Water Use Study Questionnaire East Central Phoenix (48th St & Indian School Rd and 40th St & Osborn Rd) WQARF Registry Sites

Specifically, groundwater from the SRP supply wells in the vicinity of the WQARF sites could be included in the raw drinking water supply for the City of Goodyear (Goodyear), once the future Goodyear water treatment plant starts treating its raw water delivered by SRP. SRP entered into an Agreement with Goodyear in 2017 to wheel Goodyear's surface water supplies through the SRP water delivery system to the future Goodyear water treatment plant. Although the water delivered to Goodyear will primarily be Goodyear's surface water supplies (i.e., entitlement of Central Arizona Project water), from an operational perspective some of that water may physically comingle with water from the groundwater wells that discharge from around the sites.

NOTE: Please reference the SRP letter submitted to ADEQ on November 21, 2018, for more information (RE: Salt River Project Concerns Regarding Delisting of East Central Phoenix 38th Street and Indian School Road and East Central Phoenix 40th Street and Indian School Road WQARF Sites).

4. Does the municipality/county/utility have a published general plan for the property within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries?

SRP has no such plans.

5. Are parcel, zoning, or land maps available through the municipality/county/utility? Where are they located?

SRP is not subject to zoning ordinances and has no such maps.

6. Please list any specific neighborhood concern the municipality/county/utility is aware of within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries? Please list future concerns (e.g.- freeway expansion, water use, water availability, etc.).

The quantity and quality of groundwater in the Phoenix metro area is a significant issue. SRP has a specific concern regarding water quality impacts associated with the ECP WQARF sites. Our concern is heightened because of anticipated climate change and the additional stress expected to be applied to already stressed surface water supplies.

The importance of groundwater and the ability to utilize the aquifer in local and large-scale water management scenarios is critical to the future growth and wellbeing of the entire metro area. We cannot overstate the importance of effective cleanups of contaminants which threaten the use of groundwater and the aquifers that host it.

As noted in Question #3, SRP expects that the groundwater supply wells (listed in Question #2) will transition to a raw drinking water supply for Goodyear in the near future.

Land and Water Use Study Questionnaire East Central Phoenix (48th St & Indian School Rd and 40th St & Osborn Rd) WQARF Registry Sites

7. Please list any future zoning plans or area plans for the municipality/county/utility within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries:

SRP is not subject to zoning ordinances and has no such plans.

8. Please list any "special projects" projected or anticipated within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF site boundaries:

In the near future, SRP will transition groundwater supply wells from irrigation to municipal service (potable water supply). (See Question #3.)

Additionally, it may become necessary for SRP to construct additional groundwater supply wells in close proximity to the ECP WQARF sites.

9. If any property is leased (the municipality/county/utility is the lessor), how long is the lease term?

SRP has several license agreements in the area of 48th Street and Indian School Road. The agreements are land use authorizations that allow others to use United States lands. Expirations range from 3 to 15 years.

10. If the property is leased, are there plans to renew the lease and is so, for how long?

SRP will renew several of the license agreements. The agreement with the City of Phoenix will be renewed for a 20-year term. All others, if renewed, will not exceed 5 years in term.

11. Please list any environmental spill of material or waste products that has occurred within the municipality/county/utility within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries in the past 5 years?

None.

12. Is the municipality/county/utility currently sampling groundwater wells within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites? If so, how often is the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater database?

SRP conducts routine groundwater sampling of its wells. Water quality records are submitted electronically to the ADEQ groundwater database. If necessary, water quality records can be requested from SRP if there are data gaps in the ADEQ database.

13. Does your municipality/county/utility have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide the following information:

Name:	Andrea Martinez
Title:	Manager, Water Quality & Waste Management Services
Address:	PAB 359, P. O. Box 52025
	Phoenix, AZ 85072
Phone:	602-236-2618

14. Please indicate anticipated groundwater development by the municipality/county/utility within the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites boundaries.

See Question #3.

15. Are there any groundwater wells owned by the water provider that have been affected by the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites? If so, please list the ADWR well identification numbers. What is the current status of these wells (e.g.- shut down, still pumping)?

Below, is a brief analysis of TCE and PCE water quality results from SRP wells located near and within the ECP WQARF sites. The most recent TCE/PCE results from the 2012-2018 timeframe are reported.

17.9E-7.5N (ADWR 55-617857): Active well. TCE levels below the reporting limit. PCE levels at 1.6 μ g/L in 2016.

17.1E-7.4N (ADWR 55-607731): Active well. TCE levels below the reporting limit. PCE levels at 1.1 μ g/L in 2017.

17E-8N (ADWR 55-608431): Active well. TCE levels below the reporting limit. PCE levels at 0.6 μ g/L in 2017.

Land and Water Use Study Questionnaire East Central Phoenix (48th St & Indian School Rd and 40th St & Osborn Rd) WQARF Registry Sites

16.9*E*-6*N* (*ADWR* 55-608380): *Active well*. *TCE levels at* 3.7 μg/L in 2018. PCE levels at 0.8 μg/L in 2018.

16E-6.8N (ADWR 55-607726): Active well. TCE levels below the reporting limit. PCE levels at 4.1 μ g/L in 2017.

19E-8.1N (ADWR 55-607748): Active well. TCE and PCE levels below the reporting limit.

19E-7.6N (ADWR 55-608433): Active well. TCE and PCE levels below the reporting limit.

18.6E-7.6N (ADWR 55-202398): Active well. TCE and PCE levels below the reporting limit.

18.5E-7N (ADWR 55-607712): Active well. TCE and PCE levels below the reporting limit.

18E-8.8N (ADWR 55-617825): Active well. TCE and PCE levels below the reporting limit.

18E-7N (ADWR 55-617849): Active well. TCE and PCE levels below the reporting limit.

16E-8N (ADWR 55-607715): Active well. TCE and PCE levels below the reporting limit.

16. What is the future use (up to 100 years) for any wells that have been impacted by the East Central Phoenix (48th Street & Indian School Road and 40th Street & Osborn Road) WQARF sites?

All of SRP's groundwater supply wells in the vicinity of the ECP WQARF sites are anticipated to remain in use over the next 100 years. In the near future, SRP will transition groundwater supply wells from irrigation to municipal service (potable water supply). (See Question #8.)

On average, SRP currently delivers approximately 800,000-acre feet to customers within its service area and to meet other obligations. In normal run off years, most of this is supplied from surface water coming from the Salt and Verde Rivers. However, in dry years, groundwater must be pumped to supplement the surface water supplies. SRP's water supply wells are a critical resource especially in drought conditions and it is very important to SRP that it have a reliable supply of water to meet customer and shareholder needs.

Thank you for your time. The Project Manager, Mel Bunkers, or a representative from ADEQ's consultant, Wood Environment & Infrastructure Solutions, Inc., may follow-up on answers provided.



ATTACHMENT B

ADWR WELL REGISTRATION RECORDS



TOB FILE Arizona Department of Water Resources Well Driller Report **Records Management Section** 500 N. 3rd Street y Phoenix, Arizona 85004 and (602) 417-2405 y (800) 352-8488 Well Log www.water.az.gov Review instructions prior to completing form 4 A (2-4)acc a sta This report should be prepared by the driller in detail and filed with the Department within 30 4. WELL REGISTRATION NUMBER days following completion of the well, 55-202398 30 PERMIT NUMBER (IF ISSUED) ** PLEASE PRINT CLEARLY ** Sectoniticessing recently and FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL Salt River Project Location of Welliams WELL LOCATION ADDRESS (IF ANY) Near 44th st. and Osborn Phx, ΑZ MAILING ADDRESS PO Box TOWNSHIP (N/S) RANGE (E/W) SECTION 160 ACRE 10 ACRE 40 ACRE 52025 SŴ NESW 2N1⁄4 4E30 1⁄4 1/4 CITY / STATE / ZIP CODE LATITUDE LONGITUDE 33 ¢ Phoenix, AZ 85072 29 '15.73N 111° 59 '12.5**1**w LAND SURFACE ELEVATION AT WELL CONTACT PERSON NAME AND TITLE Feet Above Sea Level TELEPHONE NUMBER FAX METHOD OF LATITUDE / LONGITUDE (CHECK ONE) Hand-Held USGS Quad Map 🔲 Conventional Survey 📋 GPS: 🗋 Survey-Grade COUNTY ASSESSOR'S PARCEL ID NUMBER BOOK PARCEL MAP 41-A 1278 COUNTY WHERE WELL IS LOCATED Maricopa SECTION 2 DRILLING AUTHORIZATION Drilling Firm & characteristic and the second NAME Weber Group LC DWR LICENSE NUMBER 215 TELEPHONE NUMBER FAX **IMAGED** 480-961-1141 480-961-0290 SECTION B. WELLICONSTRUCTION DETAILS IN DISC IN A SHORE WAT DATE WELL CONSTRUCTION STARTED DATE WELL CONSTRUCTION COMPLETED IF FLOWING WELL, METHOD OF FLOW REGULATION 6-27-04 12-30-04 Valve Other: Drill Method Method of Well Development Method of Sealing at Reduction Points CHECK ONE CHECK ONE CHECK ON Airlift Air Rotary None Bored or Augered 🔲 Bail Packed Stable Tool XX Surge Block Swedged **Dual Rotary** Surge Pump Welded Mud Rotary Other (please specify); Other (please specify): Reverse Circulation Driven ☐ Jetted Water Level Information - California Air Percussion / Odex Tubing STATIC WATER LEVEL ENTERED SEP - 6 2005 27 Other (please specify): Feet Below Land Surface DATE MEASURED

11-22-04

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Well Driller Report and Well Log

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SECTION 41. WELL-CONSTRUCTION DESIGN (AS BUILT) (attach additional page of needed)

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Well Driller Report and Well Log

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WELL REGISTRATION NUMBER 55 - 202398

SECTION 5. GEOLOGIC LOG OF WELL								
DEPTH	DEPTH FROM Description							
FROM (feet)	TO (feet)	Describe material, grain size, color, etc.	water was encountered (if known)					
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53	70	SAND						
70	80	SAND AND PEA GRAVEL						
80	145	SAND / STREAKS OF CLAY						
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Report and Well Log

CTION 6. WELL SITE PLAN		2、全国的政治,14月1日,			
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SALT RIVER PROJECT	BOOK	MAP	PARCEL		
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Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.

Please indicate the distance between the well location and any septic tank system or sewer system.



I state that this notice is filed in compliance with A.R.S. § 45	5-596 and is complete and correct to the best of	my knowledge and belief.
DRILLING FIRM	SIGNATURE OF QUALIFYING PARTY	DATE
WEBER GROUP LC.		= 6/4/05
		· · · · · · · · · · · · · · · · · · ·

CES		G ALL DRILL OPERATIONS	REPLACES: 55-607713	LICENSE NO: 215	IDE THE PHOENIX ACTIVE	Phoenix, AZ 85072	•			005.		
ARIZONA DEPARTMENT OF WATER RESOURCES WATER MANAGEMENT DIVISION 500 North Third Street Phoenix, Arizona 85004	REISSUE	TION SHALL BE IN POSSESSION OF THE DRILLER DURING AL	V NO: 55-202398 REPL	RR: WEBER GROUP, L.C.	ION TO REPLACE AN EXISTING NON-EXEMPT WELL INSIDE T HAS BEEN GRANTED TO:	Salt River Project P.O. Box 52025 Phoen	cated in the:	NE ¹ 4 Section 30 Township 2 North Range 4 East	ect: 1	N EXPIRES AT MIDNIGHT ON THE 1ST DAY OF MARCH, 2005.	MENT DIVISION	OF COMPLETION OF DRILLING
		THIS AUTHORIZA	WELL REGISTRATIO	AUTHORIZED DRILLI	A NOTICE OF INTENT MANAGEMENT AREA	WELL OWNER:	The well(s) is/are to be lo	SW ¹ ⁄4 of the SW ¹ ⁄4 of the	No. of well(s) in this proj	THIS AUTHORIZATIO	WATER MANAGH	WITHIN 30 DAYS

August 26, 2005

Barb Sims ADWR Information Management Unit

RE: Salt River Project 55-202398

Barb,

Thank you for you assistance in recognizing and solving the registration issue on this new SRP production well. I have made the appropriate changes to the well completion report. I am unable to offer any assistance on 55-607713 as Weber Group did not abandon that well. If you should have any further questions please don't hesitate to contact me.

Thank you

Marty Weber

Cc Walker Milici





16825 S. Weber Dr. Chandler, AZ 85226 Phone 480-961-1141 Fax 480-961-0290

Cax Fransmussion.

Date 8 26/05

То:	From:
Attention BARB SIMS	Name MARTY
Company ADWR	Dept_
RE 55-202393	Number of pages included 7
Fax Number 602 417 2421	

Memo
BARB,
Sorry it took so long for such an
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you need. mank you. mant
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If you do not receive all pages please contact above number.

IMAGED

Weber Group, L.C.

August 26, 2005

Barb Sims ADWR Information Management Unit

AUG 2.6 Hilorn: adu manapemen

RE: Salt River Project 55-202398

Barb,

Thank you for you assistance in recognizing and solving the registration issue on this new SRP production well. I have made the appropriate changes to the well completion report. I am unable to offer any assistance on 55-607713 as Weber Group did not abandon that well. If you should have any further questions please don't hesitate to contact me.

Thank you

Marty Weber

Cc Walker Milici

WEBER GROUP

PAGE 03/07

Arizon Records Ma 500 N. 3rd S (602) 417-24 www.water.a Review instructions This report should b days following comp	a Department of Water Resources nagement Section Street γ Phoenix, Arizona 85004 405 γ (800) 352-8488 az.gov prior to completing form e prepared by the driller in detail a letion of the well.	Well Driller Report and Well Log A(2-4)30AC and filed with the Department within 80 A (2-4)3cc Well Registration NUMBER 55-202398 PERMIT NUMBER (IF ISSUED)
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TELEPHONE NUMBER	FAX	METHOD OF LATITUDE / LONGITUDE (CHECK ONE) Hand-Held USGS Quad Map Conventional Survey GPS: Survey-Grade COUNTY ASSESSOR'S PARCEL ID NUMBER BOOK MAP PARCEL 1.2.7 8 41-2
		COUNTY WHERE WELL IS LOCATED Maricopa
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DWR LICENSE NUMBER	
215	
TELEPHONE NUMBER	FAX
480-961-1141	480-961-0290

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SECTICATED WERE CONSTRUCTION DATE WELL CONSTRUCTION STARTED 6-27-04	DET ALAST DATE WELL CONSTRUCTION COMPLETED 12-30-04	FLOWING WELL, METHOD OF FLOW REGULATION
CHECK ONE Air Rotary Bored or Augered Cable Tool Dual Rotary Mud Rotary Reverse Circulation Driven Jetted Air Percussion / Odex Tubing Other (please specify):	Helbodion Wells Development CHECK ONE Airlift Bail XX Surge Block Surge Pump Other (please specify): Waterth Syder Helow Land Surface STATIC WATER LEVEL 27 Feet Below Land Surface DATE MEASURED 11-22-04	CHECK ONE CHECK ONE Packed Swedged Welded Other (please specify):

Well Driller Report and Well Log

WELL REGISTRATION NUMBER 55 - 202398

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Well Driller Report and Well Log

WELL REGISTRATION NUMBER

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WEBER GROUP

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WELL REGISTRATION NUMBER 55 -202398

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AME OF WELL OWNER SALT RIVER PROJECT	COUNTY ASSESSOR'S PA BOOK	PARCEL
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Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.

Please indicate the distance between the well location and any septic tank system or sewer system.



 I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

 DRILLING FIRM

 WEBER_GRUPPLC

SIGNATURE OF OURLINYING PARTY

I'ER RESOURCES VISION		RILLER DURING ALL DRILL OPERATIONS	REPLACES: 55-607713	LICENSE NO: 215	IPT WELL INSIDE THE PHOENIX ACTIVE)25 Phoenix, AZ 85072	-			OF MARCH, 2005.			
RIZONA DEPARTMENT OF WAT WATER MANAGEMENT D 500 North Third Street Phoenix, Arizona 85004	REISSUE	HALL BE IN POSSESSION OF THE DR	55-202398	BER GROUP, L.C.	REPLACE AN EXISTING NON-EXEM EEN GRANTED TO:	iver Project P.O. Box 520	the:	tion 30 Township 2 North Range 4 East		RES AT MIDNIGHT ON THE 1ST DAY		NOISIVI	E A LOG OF THE WELJ. IPLETION OF DRILLING
AF		THIS AUTHORIZATION SI	WELL REGISTRATION NO:	AUTHORIZED DRILLER: WEH	A NOTICE OF INTENTION TO MANAGEMENT AREA HAS BE	WELL OWNER: Salt Ri	The well(s) is/are to be located in	SW ¹ 4 of the SW ¹ 4 of the NE ¹ 4 Sec	No. of well(s) in this project:	THIS AUTHORIZATION EXPIR	•	WATER MANAGEMENT T	THE DRILLER MUST FILE WITHIN 30 DAYS OF COM

OURCES		URING ALL DRILL OPERATIONS	REPLACES: 55-607713	LICENSE NO: 215	L INSIDE THE PHOENIX ACTIVE	Phoenix, AZ 85072				СН, 2005.	
RTMENT OF WATER RESC MANAGEMENT DIVISION 500 North Third Street Phoenix, Arizona 85004	REISSUE	SSESSION OF THE DRILLER DI		7	EXISTING NON-EXEMPT WELL FO:	P.O. Box 52025		2 North Range 4 East		HT ON THE 1ST DAY OF MARC	E WELL DRILLING
ARIZONA DEPA WATER		HORIZATION SHALL BE IN PO	RATION NO: 55-202398	DRILLER: WEBER GROUP, L.	INTENTION TO REPLACE AN I T AREA HAS BEEN GRANTED	t: Salt River Project	e to be located in the:	14 of the NE¼ Section 30 Townshil	this project: 1	IZATION EXPIRES AT MIDNIC	ムシハー LANAGEMENT DIVISION LER MUST FILE A LOG OF TH 0 DAYS OF COMPLETION OF I
		THIS AUTH	WELL REGIST	AUTHORIZED	A NOTICE OF I MANAGEMEN	WELL OWNER	The well(s) is/are	SW14 of the SW1	No. of well(s) in t	D THIS AUTHOR	WATER M THE DRIL WITHIN 3

÷ • • • • • • • • • • • • •	Groundwater Management Support Section P.O. Box 458 • Phoenix, Arizona 85001-0458 (602) 417-2470 • (800) 352-8488 www.water.az.gov Review instructions prior to completing form in black or I You <u>must</u> include with your Notice: > check or money order for any required fee(s) Authority for fee: A.A.C. R12-15-151(B)(4)(a), A.R.S. § PLEASE PRINT CLEARLY ** CTION 1. REGISTRY INFORMATION ell Owner LL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL SRP/16ST52 WING ADDRESS	Request to Change blue ink APR 2 9 2004 45-113 (F) More a 2 9 2004 (F) More a 2 9 20 (F) More a 2 9 20 (F) More a 2 9 20 (F) More a 2 9 20 (F) More	Pe Well Informatio	n NNUMBER 98
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WR 55-71A (REVISED	03/20/03)	Page	1	of	1
		00/20/00/	1 490		~	1

PRELIMIARY LEGAL DESCRIPTIONS - PENDING SURVEY

Fee Purchase: Parcel 127-08-041A (KNIGHT)

The East 60 feet of the North 40 feet of Tract "A", CHESTLEY MANOR, according to Book 63 of Maps, Page 5, records of Maricopa County, Arizona. Said parcel contains 2,400 square feet, more or less.

Fee Purchase: Parcel 127-08-041B (Reyman)

The East 60 feet of the South 15 feet of the North 55 feet of Tract "A", CHESTLEY MANOR, according to Book 63 of Maps, Page 5, records of Maricopa County, Arizona. Said parcel contains 900 square feet, more or less.



Registry Name Addr Drilling Auth Permits Water/Site POU Driller Log Completion

Brailing Authorities Issue Date Expration Date Registry D License # 1500 (05/04/2004) 03/01/2005 55-542242 215 -- 05/04/2004) 03/01/2005

Conmerts

Oriller Licenses

Company

Address1 Address1 16525 S. VEBER DRIVE Cay State Zip Code

CHANDLER AZ 05226-41

EERMARD BERMETLEEWEPER .00-04 ACTIVE

Adorets2

de Phone 3.41 400-961-1141

Qualitying Party

SEE COMMENTS Advress2

V Active License

ROCLIMINSES

ARIZONA DEPARTMENT OF WATER RESOURCES WATER MANAGEMENT SUPPORT SECTION MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458 500 North Third Street, Phoenix, Arizona 85004 Phone (602) 417-2470 Fax (602) 417-2422

MAR

- 2 2004

NOTICE OF INTENTION TO DEEPEN, REPLACE OR MODIFY AN <u>EXISTING</u>
NON-EXEMPT WELL AT APPROXIMATELY THE SAME LOCATION
IN AN ACTIVE MANAGEMENT AREA

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING. Section § 45-597, Arizona Revised Statutes provides: In an Active Management Area, prior to deepening, replacing or modifying an existing well at approximately the same location, a person entitled to withdraw groundwater, shall file a Notice of Intention to Drill with the Department.

1.	WELL/LAND LOCATION: 2 Obs 4 OW 30 Township Range Section 5 W 4 5104 4 ME 14	7.	DESCRIPTION OF THE PROPOSEDWELL: ZO Inches	13. CLAIM OF ENTITLEMENT TO WITHDRAW GROUNDWATER: Certificate 58	
	$\frac{10}{10 \text{ Acre}} \frac{74}{40 \text{ Acre}} \frac{74}{160 \text{ Acre}} \frac{74}{160 \text{ Acre}}$		DepthFeet	Permit 59	
2.	POSITION LOCATION OF THE		Type of Casing <u>Steel</u>	Irrigation District 57-00252	ت.
	$\frac{\text{WELL:}}{\text{Latitude}} \underbrace{33}{3} \circ \underbrace{29} \underbrace{1573}_{N} N$	8.	ESTIMATE OF TOTAL ANNUAL PUMPAGE:	Service Area 56	
	Longitude <u>111 ° 59 12 "</u> W		Acre Feet per Year	Recovery Well Permit	
3. 4.	COUNTY Maricoph APPLICANT	9.	ESTIMATED AMOUNT OF GROUNDWATER WITHDRAWN	14. ACTION REQUESTED: ☐Deepen AReplace ☐Modify For a replacement well give distance	
	Name		FROM THE ORIGINAL WELL:	from original well <u>75</u> -Feet	
	Mailing Address		Acre Feet per Year	15. EXISTING WELL REGISTRATION NO. 55- $(5 > 7.7/3)$	
	<u>Proas / 47 85072-2025</u> City State Zip	10	(be specific): / - rigation	16. WILL THE WELL REPLACED BE ABANDONED? ØYes □No	
	Telephone No. <u>602-236-5</u> 363	11	OTHER USES INTENDED	17. DRILLING FIRM:	
5.	OWNER OF THE LAND OF WELLSITE: $\leq R P$		(be specific): None	Layne Christense	2
	Name 168T 52/70 Box 52025	12	5 CONSTRUCTION WILL START: 2003	$\frac{12330E-R.575}{Mailing Address}$	Ke In
	Mailing Address / AZ 8:50 72 · 20 City State Zip	2	Month Year	City State Zip	·۲ ,
	Telephone No. 602-236-536-3	Γ	FOR DEPARTMENT USE ONLY	Telephone No. 7 - 1-7-7	
6.	THIS NOTICE IS FILED BY: Check one: Owner Dessee	1 	file No. $A((2-4)) = 0$ ACC^{-1} filed $3-2-2004$ By DSK^{-1} prove $3-7 = 04$ By DSK^{-1}	DWR License Number	
	same as above				
	Name Mailing Address	P	DUPLICATE Aailed 3-15-04 By DSL Registration 55-202398	18. Is the proposed well within 100 feet of a septic tank system, sewage area, landfill, hazardous waste facility or	
	City State Zip	[амалпа <u>Рноелих</u>	storage area of hazardous material or a petroleum storage area and tank? \Box Yes \bigvee No	

19. Attach a detailed construction diagram of the proposed well design. The diagram should provide verification of consistency with minimum construction requirements. Specifically, the diagram should include an indication of the perforated interval location(s) in relationship to the expected water level; the depth and thickness of the surface seal, and grouting material used; whether the surface or conductor casing will extend above grade; and vault details, if specified.

I state that this Notice is filed in compliance with Rules A.A.C. R12-15-809 and/R12-15-816(F), and is complete and correct to the best of my knowledge and belief, and that I understand the conditions set for the net for the preverse side of this form.

Walker Milici	Geohydorga St UchAlly to	r SZP	3/1/04
Type or Print Name and Title	/ Signature XI Land Owner [] Ressee of well site	Title	/ Date

	ARIZONA DEPARTMENT OF WATER RESOURCES			
	500 North Third Street - Phoenix, Arizona 85004-3903 MAR - 2 2004 Telephone 602-417-2470			
	NEW WELL CONSTRUCTION SUPPLEMENT (form DWR 55-90)			
	Well Registration Number 55-202398 (FOR DEPARTMENT USE ONLY)			
1.	Well Location:			
	$\frac{5W}{10AC}$ % of the $\frac{5W}{40AC}$ % of the $\frac{NE}{160AC}$ %, Sec. $\frac{3Q}{7}$ Township $\frac{2N}{2N}$ Range $\frac{4E}{4E}$.			
2.	Position Location of the Well:			
	Latitude 33 • 29 • 15.73" Longitude 111 • 59 • 12.51"			
Latitude $25 \circ 29 \cdot 13.73$ " Longitude $111 \circ 59 \cdot 12.51$ " 3. County <u>Maricopa</u> 4. Date construction to start: <u>$3/24$</u> 5. Time period well will remain in use: <u>120 years</u> 6. Is nump equipment to be installed?				
4.	Date construction to start: $3/04$			
5.	Time period well will remain in use:			
6.	Is pump equipment to be installed? <u>Les</u> If so, design pump capacity: $\frac{750}{100}$ GPM.			
7.	Well construction plan: (estimate)			
	a. Drilling method (mud rotary, hollow-stem auger, etc.) <u>Cable too 1</u> .			
	b. Borehole diameters <u>36</u> inches from <u>\circ</u> feet to <u>40</u> feet.			
	32° inches from 40 feet to 320 feet.			
	c. Casing materials Steel blank & statted casing.			
	d. Method of well development (bail, air lift, surge, etc.) Swab & pomp/surge			
	e. Will surface or conductor casing extend above grade?			
8.	Include a detailed construction diagram of the proposed well design. The diagram should verify consistency with minimum construction requirements specified in the Department's well construction rules found in Arizona Administrative Code (A.A.C.) R12-15-801 et. seq. Specifically, the diagram should include borehole diameters; casing materials and diameters; perforation intervals; the expected water level; depth and thickness of the surface seal; proposed grouting materials; and the length that the surface or conductor casing will extend above grade, or vault details, if specified.			

9. Proposed materials and method of abandonment if well is to be abandoned after project is completed (Minimum requirements per A.A.C. R12-15-816):

<u>no</u>† aban doned Well ω il be

DWR-55-90 (Rev 9/02)

.

10.	Is the proposed wellsite within 100 feet of a septic ta landfill, hazardous waste facility, storage area of ha area or tank?YesNo	ank system, sewage disposal area, zardous material, or petroleum storage
11.	Is this well to monitor existing contamination?	Yes 📉 No
	Potential contamination?Yes X_No If yes	s, please provide explanation:
12.	Will the proposed well be a replacement well in the sa A.A.C. R12-15-840)? A replacement well is one locate well that it is replacing, and which is not expected groundwater than historical annual withdrawals from	ame location (A.R.S. §§ 45-596 and 45-597, ed no more than 660 feet from the original d to withdraw on an annual basis more n the original wellYesNo
	If yes then indicate the following:	
	(a) Record the registration number for the well t	hat will be replaced: 55- <u>$6^{0}/7_{1}$</u>
	(b) Will the original well to be replaced be	_Capped, AbandonedOther.
	If Other, please explain:	·
13.	Name of Consulting firm, if any :	
	Address City	State Zip
	Contact Person:	Telephone Number
14.	Drilling firm: Layne Christense	<u> </u>
	DWR License Number:7 RO	C License Category: <u>Exempt</u>
15.	Special construction standards, if any, required pur	suant to A.A.C. R12-15-821: <u>None</u>
l (we	application in the second seco	at all information provided in this is true and correct to the best of my/our and belief.
	Well for SRP	3/1/04
	Signature of Applicant	/ / Date
DWR-	55-90 (Rev 9/02)	1
		MAR - 2 2004

WELL No. 55-202398

SCHEMATIC DIAGRAM OF PROPOSED PRODUCTION WELL

SRP WELL 18.5E-7.5N



ARIZONA DEPARTMENT OF WATER RESOURCES HYDROLOGY DIVISION - WQARF UNIT

MEMORANDUM

DATE:	March 17, 2004
TO:	Darlene Sumpter-King, Groundwater Management Support Scott Miller, Phoenix AMA
THROUGH:	Teri Davis, WQARF Unit
FROM:	Andrew Scott, WQARF Unit
SUBJECT:	55-202398 – Salt River Project (SRP)
APPLICATION:	NOI to Replace a Well (Old Well 55-607713)

- 1. The area of groundwater withdrawal activities is located within in proximity to an area of known significant groundwater contamination known as the East Central Phoenix (ECP) Water Quality Assurance Revolving Fund (WQARF) site. The well site is located about 1/2 mile Southwest of the ECP 48th Street and Indian School Road site, about ¹/₂ mile Southeast of the ECP 40th Street and Indian School Road site, and about ½ mile East of the ECP 40th Street and Osborn Road site. According to Arizona Department of Environmental Quality (ADEQ) Groundwater Database, sample results from wells located within ¼ of a mile of the withdrawal activities indicate parameter concentrations that exceed Maximum Contaminant Level (MCL) standards for Fluoride (F), Trichloroethylene (TCE), Nitrate (NO₃). In addition, parameter concentrations also exceed Secondary Maximum Contaminant Level (MCL2) standards for Chloride, Total Dissolved Solids (TDS), and pH and Health Based Guidance Levels for Vanadium (V). These samples are taken from the old SRP at this location (55-607713), and the TCE exceedence was from a sample taken in 1986. Recent water quality sampling data were provided by SRP, which indicate that TCE was detected in 55-607713 up to 1990. Water samples from 1991 through 2003 were non-detect (BDL) or below the reporting limit (BRL) for TCE. See attached map and supporting information,
- 2. An NOI to replace 55-607713 was submitted on March 26, 2003. Hydrology/WQARF reviewed the NOI on April 10, 2003 and the drilling authority to replace 55-607713 was issued. The well was not drilled within the 1-year timeframe, so SRP submitted the same application to get a new authority. The original WQARF review found that the well was to be drilled in the Upper Alluvial Aquifer (UAU) and that bedrock (Red Unit?) is expected to be encountered at 300 feet below the land surface, at which point drilling would stop and the well would be completed above the rock.

RE: 55-202398 - SRP NOI to Replace 55-607713 3/17/2004 Page 2

- 3. According to Walker Milici of SRP, the bedrock is expected to be found at a depth of **up** to 300 feet. SRP intends to produce primarily from the UAU and little or no production is expected from the bedrock if the well is even completed in rock.
- 4. Given the recent sampling data provided by SRP, the WQARF Unit has no objections to issuance of the drill card. However, given the history of contamination at the site, it is strongly recommended that the well be completed entirely within the UAU and that if the bedrock is encountered during drilling, the borehole should be backfilled with neat cement or bentonite grout to a depth that is at least 5 feet above the top of the bedrock.
- 5. References: Water Quality Information Maps Program (attached), the Groundwater Code (Arizona Revised Statutes, Title 45, Chapter 2), and the rules adopted thereunder.
- 6. If more information is needed, contact me at (602) 417-2448, ext. 7273. Thank you.

attachments: as stated

	CLARENCE STATE	17 3
P - 7	55-202398 - SRP	
2000 DGF 57 9886 55-6	NOI Replace a Non-Exemi	ot Well
HAZELWOOD	A(2-4)30ACC	
46680 55-53450		na av Y X A- (*
TURNEY FCP - 40th St & Indian S		
CLENBOSA	CLENROSA MONTEGINO	18th St. & Indian School
46669 56-530726		
62106 55-5981	Grap 55-560712 466 2.5	\$535786 A
46747 55-543494 46747 55-54349	6266192	9900680 55-550790
46727 55-543423 46670 55-535794	1006040749 55-543424 4666	
LARENDON ECD Joth St. & Onh	46703 65-5304334	10056
3739 55-539841 { ECF - 40th St. & OSD	10057 5	5-634852
	16265 55-808438	
1280/FIN 62104 55-59810	6704 55-530430400 10066 4060 55-514213 / A	258.55-646684 29 OSECON
		060 55-501995 10061 55-633954
easti 68 7		56543 55-6305264
	45766 55	53042 56538 55-525689 56536 55-511 54
9892 55-60767236724 55-5390436	46705 55-530	56835 5538306 56834 55-538306
ANOWAS - BO SOOD SE COR	1 strate the all a	56535 55-54 9494
61291 55-5557	1 2 4 2 3 4 4 2 4 6 1 6 5 6 4 8 3 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9	61769 555540955513 555521516 61294 55-538 4 4 55 5 5 8 4 5 5 5 5 8 4 5 5 5 5 8 4 5 5 5 5
563 65-5298W	1631 55-52665	744 58542 55-530527 56537 55-516146
589 55-570329 56826 55-5483684		55-51614 AV
IARVARD		10070 55-639604
61491 55-571791 4190 55-571795 5684	255454836956836555-5 66 731	47744 55-638243
MONTE W	37 Sta	10071-32-60833 55-530459 ³¹
<u> </u>	3	60825 55-530462 60824 55-530461
Well Site Features	Geographic Features	N I
A Well Location	Streets	
1 Mile Well Site Buffer	Sections	
	Townships	N
ADEQ Wells	D100100 Township/Range Label	.1.
HBGL Exceedence	07 Section Label	
Secondary MCL Exceedence	Registry Sites	0 0.35 0.7 Miles
* MCL Exceedence	1 Mile Buffer	L]
+ No Exceedence	Registry Site Boundary	
	Other Water Overlite Other	3/16/2004
Well Numbers		
23051 ADEQ		ARIZONA
55-623229 ADWR	Kark Bullet	DEPARTMENT OF WATER
		(TATATATATATATATATATATATATATATATATATATA

Rec	Results	Units	Detection Limits	Detection Limit Inite	MCL	MCL	MCL2	MCL2 Maite	Sample Date	Parameter Name	HBGL	HBGL	DEQ	Registry ID
-	371.85	mg/L		mg/L			250	mg/L	9/17/1985	CHLORIDE, TOTAL IN WATER			10064	55-607713
2	16.527	mg/L		mg/L	4	mq/L	N	mq/L	9/17/1985	FLUORIDE, TOTAL (AS F)	4	mg/L	10064	55-607713
3	9	ng/L	m	ng/L					7/16/1986	COBALT, DISSOLVED (AS CO)	0.7	ng/L	10064	55-607713
4	8	SU		SU			6.5	SU	7/16/1986	PH (STANDARD UNITS)			10064	55-607713
5	9.36	ng/L		ng/L	S	ug/L			7/16/1986	TRICHLOROETHYLENE, DISSOLVED			10064	55-607713
9	30	ng/L		ng/L					7/16/1986	VANADIUM, DISSOLVED (AS V)	7	ng/L	10064	55-607713
7	383.91	mg/L		mg/L			250	mg/L	10/14/1986	CHLORIDE, TOTAL IN WATER			10064	55-607713
8	67	mg/L		mg/L	45	mg/L			10/14/1986	NITRATE NITROGEN, TOTAL (AS NO3)			10064	55-607713
6	8	SU		SU			6.5	٦S	7/16/1987	PH (STANDARD UNITS)			10064	55-607713
10	0.5	ng/L	0.5	ng/L					6/15/1988	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ug/L	10064	55-607713
=	0.05	٦/bn	0.05	ng/L					6/14/1989	ALDRIN IN WHOLE WATER SAMPLE	0.002	ng/L	10064	55-607713
12	0.1	ng/L	0.1	ng/L					6/14/1989	DIELDRIN IN WHOLE WATER SAMPLE	0.001	ng/∟	10064	55-607713
13	0.5	ug/L	0.5	ug/L					6/14/1989	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ug/L	10064	55-607713
14	0.5	ng/L	0.5	ng/L					6/14/1989	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ng/L	10064	55-607713
15	0.5	ng/L	0.5	ng/L	0.08	ng/L			6/14/1989	PCB - 1016, TOTAL WATER			10064	55-607713
16	0.5	ng/L	0.5	ng/L	0.3	ng/L			6/14/1989	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
17	0.5	ng/L	0.5	ng/L	0.1	ng/L			6/14/1989	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
18	0.5	nd/L	0.5	na/L	0.1	nd/L			6/14/1989	PCB - 1254 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
19	0.5	ng/L	0.5	ng/L	0.2	ng/L			6/14/1989	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
20	981	mg/L		mg/L			500	mg/L	10/18/1990	(TDS) RESIDUE, TOTAL FILTRABLE (DRIED AT 180C)			10064	55-607713

note: ug/L = micrograms per liter, equivalent to parts per billion (ppb) mg/L = milligrams per liter, equivalent to parts per million (ppm) SU = Standard Units

55-202398 - SRP NOI to Replace a Non-Exempt Well A(2-4)30ACC

Rec	Results	Units	Detection	Detection Limit Units	MCL	MCL Units	MCL2	MCL2 Units	Sample Date	Parameter Name	HBGL	HBGL Units	DEQ Well	Registry ID
21	5.7	mg/L		mg/L	4	mg/L	2	mg/L	10/18/1990	FLUORIDE, TOTAL (AS F)	4	mg/L	10064	55-607713
22	0.5	ua/L	0.5	ua/L					10/18/1990	METHYL CHLORIDE (CHLOROMETHANE). TOTAL WATER	0.19	ua/L	10064	55-607713

note: ug/L = micrograms per liter, equivalent to parts per billion (ppb) mg/L = milligrams per liter, equivalent to parts per million (ppm) SU = Standard Units DBCP

TCE

Between: 01/01/1986 and 12/31/2004

Analysis Results 3/17/200

	3/17/04
DECEIVE MAR 17 2004	1 page
WATER QUALITY SECTION 7	5: Awaren Scott
From	Welker Milici
	SRP
	602 236 5363

18.5E-07.5	7/16/1986		9.36
Ν	7/16/1987		4.8
	6/15/1988		3
	6/14/1989	BDL	2.4
	10/18/1990		0.9
	7/1/1991	BDL	BDL
	7/15/1992	BDL	BDL
	8/24/1993	BDL	BDL
	9/14/1994	BDL	BDL
	7/19/1995	BDL	BDL
	8/21/1996	BRL	BRL
	8/4/1998	BRL	BRL
	8/11/1999	BRL	BRL
	6/29/2000	BRL	BRL
	5/31/2001	BRL	BRL
	12/12/2002	BRL	BRL
	12/17/2003	BRL	BRL

1001

Phoenix AMA Memorandum

To: Darlene Sumpter-King

From: Scott Miller

Date: March 15, 2004

Subject: Notice of Intent to Replace Well No. 55-607713 (Replacement Well No. 55-202398 – SRP)

I have reviewed the referenced application and it conforms to AMA policies and statutory requirements and with this memorandum recommend issuance of the permit.

3/8/4

From:Carol NortonTo:WRDtsDate:3/8/04 9:56AMSubject:55-202398 SRP NOI to Replace

The Hydrology Division, Water Resources Section, is in receipt of the above referenced Notice of Intention to Replace a Well. The well being replaced is 55-607713. The diagram of the proposed replacement well meets the Minimum Construction Standards, will be within 660 feet of the original well and will not exceed historic pumpage. The Hydrology Division, Water Resources Section, supports issuance of this drill card.

CC: Modesto, Karen; WRjsm; Zachreson, Tana

ARIZONA DEPARTMENT OF WATER RESOURCES

Hydrology WQARF Unit 500 North Third Street, Phoenix, Arizona 85004 Telephone 602 417-2448 Fax 602 417-2425



JANET NAPOLITANO Governor

HERB GUENTHER Director

March 17, 2004

2019W

SRP Attn: Walker Milici P.O. Box 52025 Phoenix, AZ 85172-2025

> Re: Notice of Intent to Drill a Non-Exempt Well Well Registry #55-202398 (SRP 18.5E-7.5N) T2N, R4E, Section 30 ACC

Dear Mr. Milici,

The Department of Water Resources recently approved a Notice of Intent to drill a non-exempt well registered as 55-202398. This well is to be located adjacent to an area of contaminated groundwater known as the East Central Phoenix Water Quality Assurance Revolving Fund (WQARF) remedial site. Please be aware that groundwater produced from the proposed well may not meet applicable federal, state, county or local water quality standards.

According to Arizona Administrative Code R12-15-851, you are required to notify the Department at least two (2) business days in advance of commencement of well drilling activities for the above referenced well(s). You may submit this required notice to the Department by either letter or facsimile, and the Department must receive it at least two (2) business days prior to drilling. If notice is sent via facsimile, please mail the original document to the Department.

Mailing Address: Arizona Department of Water Resources Hydrology/WQARF 500 N. 3rd Street Phoenix, AZ 85004 Facsimile Number: (602) 417-2425

If you have any questions, please contact the Hydrology Division at 602-417-2448 or me at extension 7273.

Sincerely,

Andrew Scott Hydrology/WQARF Unit
ARIZONA DEPARTMENT OF WATER RESOURCES WATER MANAGEMENT DIVISION

500 North Third Street, Phoenix, Arizona 85004

Telephone 602 417-2470 Fax 602 417-2422

March 15, 2004

Walker Milici, Geohydrologist Salt River Project P.O. Box 52025 – 16ST52 Phoenix, Arizona 85072-2025

RE: Notice of Intention to Replace an Existing Non-Exempt Well Registration No. 55-202398; File No. A (2-4) 30 ACC

Dear Mr. Milici:

The Notice of Intention to Replace an Existing Non-Exempt Well in the Same Location within an Active Management Area for Salt River Project has been approved. A copy of the Notice is enclosed for your records. The on-site inspection has been completed and the drill card for the proposed well has been delivered to the driller you selected.

In the event that the location of the proposed well changes, you must notify the Department of Water Resources of the change in writing. A drill card with the correct proposed well location must be in possession of the driller before drilling may commence. If the proposed new well is to be more than 660 feet from the well that it is replacing, then you may be required to obtain a well permit.

Within 30 days of completion of the well, the well driller is required to furnish this Department with a complete and accurate log of the well. In addition, the well owner is required to submit the enclosed Completion Report within 30 days of installation of pump equipment.

Pursuant to the provisions of A.R.S. § 45-604, any person withdrawing groundwater from a well is required to use a water measuring device to record rates of withdrawal in order to provide or allow the computation of an annual volume of pumpage from the well. The total volume of pumpage from the well which is being replaced and the completed new well shall be reported on your Annual Water Withdrawal and Use Report for calendar year 2004.

The Department has issued the authorization to drill this well pursuant to A.R.S. 45-597 of the Groundwater Code. The legal nature of the water withdrawn from the well may be the subject of court action in the future as part of a determination of surface water rights in your area. If there are court proceedings that could affect your well, you will be notified and be given the opportunity to participate.



JANET NAPOLITANO Governor

HERB GUENTHER Director Salt River Project March 15, 2004 Page two

Please be aware that the withdrawals of the proposed well cannot exceed the historic pumpage of the original well you wish to replace. The historic pumpage of the original well is 1050 acrefeet per year. In addition, if the original well will be used in conjunction with the proposed replacement well, the withdrawals from both wells cannot exceed the historic pumpage of the original well.

If the historic pumpage is exceeded in any calendar year, the well will no longer qualify as a replacement well in the same location, and will instead fall into the category of "new well." This means that you will not be able to pump the well again until you first submit a well impact analysis and obtain a determination from the Department that the well will not cause unreasonably increasing damage to other land and water users.

Hydrology/WQARF strongly recommends that, given the history of contamination at the well site and in the area, the well be completed entirely within the Upper Alluvial Aquifer and that if the bedrock is encountered during drilling, the borehole should be backfilled with neat cement or bentonite grout to a depth that is at least 5 feet above the top of the bedrock.

Under A.R.S. § 45-593, the person to whom a well is registered must notify this Department of any changes in ownership, status or physical characteristics to keep the Well Registry records current and accurate. For such future use, a Request to Change Well Information form is also enclosed.

If you have any questions, please contact Scott Miller at 602-417-2465.

Sincerely, Darlene Sumpter-King

Water Resource Specialist

Enclosure

cc: Layne Christensen Company Scott Miller, Phoenix Active Management Area

Prilling Authorities Registry D Lic	ense # 7	Issue Date 03/15/2004	Expiration Date		
Comments					
Oriller Licenses - Company			alitying Party		
LAVINE CHRISTENSE	N CEMPANY		ELUINEN S		
HZCTO EAST RIGOS	ROAD				
CRY CHANCLER	State Zi 4Z 8	o Code Phane 5249-37 480-895	9404	IOC Econocs C53 & A-4	
LONISAWADE		4 ACTIVE			

IRCES	ING ALL DRILL OPERATIONS	REPLACES: 55-607713	LICENSE NO: 7	NSIDE THE PHOENIX ACTIVE	Phoenix, AZ 85072				, 2005.	
TMENT OF WATER RESOU AANAGEMENT DIVISION 00 North Third Street hoenix, Arizona 85004	ESSION OF THE DRILLER DURI		N COMPANY	ISTING NON-EXEMPT WELL IN):	P.O. Box 52025		North Range 4 East		T ON THE 1ST DAY OF MARCH,	WELL
ARIZONA DEPAR WATER N 5	IORIZATION SHALL BE IN POSS	RATION NO: 55-202398	DRILLER: LAYNE CHRISTENSE	INTENTION TO REPLACE AN EX T AREA HAS BEEN GRANTED TO	: Salt River Project	e to be located in the:	4 of the NE¼ Section 30 Township 2	this project: 1	IZATION EXPIRES AT MIDNIGF	A IANAGEMENT DIVISION LER MUST FILE A LOG OF THE 0 DAYS OF COMPLETION OF DF
	THIS AUTH	WELL REGIST	AUTHORIZED	A NOTICE OF] MANAGEMEN	WELL OWNER	The well(s) is/ar	SW ¹ 4 of the SW ¹	No. of well(s) in	THIS AUTHOR	WATER M WATER M THE DRIL WITHIN 3

WELL AND WITHDRAWAL PERMIT CHECK DEPOSIT REQUEST

Submitted by: Darlene Sumpter-King

Date: March 2, 2004

Applicant: Salt River Project

Check submitted by: same as applicant

Application No. 55-202398 (replaces 55-607713)

Code	Type of Fee:	Amount:	Check No.
55	Application for Well Permit		
55	Well Permit Fee		
59	Application for Permit to Withdraw		
59	Withdrawal Permit Fee		
59	Conveyance of Groundwater Withdrawal Application and/or Permit	2	
Gen Fund	Legal Noticing Fees		
55	Notice of Intent for Non-Exempt Wells	\$150.00	157174

Debys fig Mode Then Par		PO BOX 52025 PHOENIX, AZ 65072-2025 (602) 236-5900	· [BANK ON COMM PHO	E, ARIZONA, ERCIAL BANKING ENIX, ARIZONA	NA L	IMIT \$500	157174 <u>91-2</u>
PURPOSE	DIJI	11Plerini H	11				· ·	
IMPORTANT :	ORIGINATING COST CENTER	CHARGE NUMBER	DTOC	RELATED	CROSS-CHARGE RESPONSIBLE CC	AMOUNT	DATE	B DAY DEAR
IF PURCHASE IS FOR MATERIALS OUT OF	91321	RC1-03002-701	410			150, D		VOID AFTER 60 DAYS FROM ISSUE OR
STATE, CHECK BOX	·	l				** ** .		NOT VALID FOR MORE
EMPLOYEE	└			TOT	AL AMOUNT	150.00	-	I MAN \$500.00
D7510	PAY TO TH ORDER (# Arizona Ry	parti	ent g	(water	Resour	ser_	\$ 150.00
EMPLOYEE		* one hurd	rell.	fifty	<u>ξ-100</u>	2		DOLLARS
13223	exe Authoriz	ED BY	e elevitere	IGNED				
			/					

12

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WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1.	Owner DEAN D PETERSON
	4215 E WHITTON Phoenix HRIZONA 85018
2.	Lessee or OperatorName
	Address
3.	Driller DEAN D. R. TERSON
	4215 ELethitton phoenix 172 85018
4,	Location of well: <u>4215 E Whit Tox</u>
5.	Permit No. (if issued) DESCRIPTION OF WELL
6.	Total depth of holeft.
7.	Type of Casing 4" PhASTIC PIPE (25") - Balance linearie
8.	Diameter and length of casing <u>4</u> in. from <u>0</u> to <u>25</u> , <u>in from</u> to
9.	Method of sealing at reduction points
10.	Perforated from 10 to to to
11.	Size of cutsNumber of cuts per foot
12.	If screen was installed: Lengthft. Diamin. Type
13.	Method of construction drikked
14.	Date started Month day vear
15.	Date completed Act 10 1981 Month day year
16.	Depth to waterft. (If flowing well, so state.)
17.	Describe point from which depth measurements were made, and give sea-level elevation if available. <u>FROM CONCRETE Pump BASE</u>
18.	If flowing well, state method of flow regulation
19.	REMARKS: DO NOT WRITE IN THIS SPACE
	Received By
	Entered Z-3-82 By/1
	File No. A(2.4)30 bea
	(Well log to appear om Reverse side)

MICROFILMED

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OTHER.		······································
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Indicate depth at which water was first encountered, and the dopth and thickness of water bearing beds. If water is sitesign, indicate depth at which encountered, and depth to which it rose in well.

POG OR MERT

171 x 2

SIZES SIZES E MARCANE Cristorer & 2518 Marcane Cristorer & 2518 Marcane Cristorer & 2518

82-2

DEPARTMENT OF WATER RESOURCES 99 East Virginia Phoenix, Arizona 85004

Registration No. 55 - 501994 Owner of Well Site Dean Poters File No. A (2.4)3

COMPLETION REPORT

- 1. Completion Report to be filed with the Department within 30 days after installation of pump equipment.
- 2. The tested pumping capacity of the well in gallons per minute for a nonflowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.
- 3. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.
- 4. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.

LOCATION OF THE WELL

4215 E WhITTON Date Well Completed DCT 1981 Depth of Well 1. Well Test: Test Pumping Capacity 10 % 12 Date Well Tested NOV 1914 (Gal. per min.) Method of Discharge Measurement <u>Slop Watch 45 Gal Can</u> (weir, orifice, current meter, etc.) Static Groundwater Level 19 ft. Drawdown Coppose 11 ft. Total Pumping Lift *approx 30* ft. Drawdown lbs. (Flowing Well) 2. Equipment Installed: Kind of Pump <u>CONVERTIBLE</u> JET PUMP Teek 1110dek 3P648 (turbine, centrifugal, etc.) Kind of Power <u>FLect</u> H.P. Rating of Motor <u>1/2 HP</u> (Elec., Nat. Gas, Etc.) I HEREBY CERTIFY that the above statements age true to the best of my knowledge and belief. <u>1/18</u>, 19<u>82</u>

MICROFILMED

2-3-82-4

EXEMPT WELL FILING FEE: \$3,00

DEPARTMENT OF WATER RESOURCES NOTICE OF INTENTION TO DRILL OR DEEPEN AN EXEMPT WELL

Section 45-596, Arizona Revised Statutes, provides: A person may not drill or cause to be drilled any well or deepen or replace an existing well without first filing a Notice of Intention to Drill with the Department on a form prescribed and furnished by the Department. The well shall be completed within one year after the date of Notice. An exempt well means a well having a pump with a maximum design capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An exempt well may include the non-commercial irrigation of not more than 1 acre of land.

	North	DESCRIPTION OF WELL:	PLACE OF USE:
		8. Diameter4"	13. Township 2 N
	NW /4 NE /4 /	Depth 65'	14. Range <u>4 E</u>
West	East '	9. Type of Casing	15. Section <u>30</u>
		Class 40 Plastic.	16. Legal description of land
		10 Duincipal use of Water	water is to be used on:
		10. Principal use of water.	4215 E WhITTON
	South	engaling gard	
-Inc	licate Well Location by X	11. Other uses Intended	17. Design Pump Capacity
· ·	640 acre section)		10GPM
WELL/I	AND LOCATION:	(If for pop-softwarial inviso-	18. Action Requested:
1. 1	ownship 2 N	tion, state approximate area	Drill X Sills
2: F	ange <u>4 E</u>	being cultivated.)	Deepen Replace
3. 5	ection <u>30</u>	12. Construction will start	19 This nation Plathy: 3 100
4.	NE 2 SW 2 NW 2	about:	In this house if the profile is the
] 5 Cou	0 acre sub-division		Lessee The ASOURCES
	mcy MARICOPA	Month Year	Duiller
0. Uwr		Car In UI	Deau D Peterson
<u>Ver</u>	N D FETERSON	DO NOT WRITE IN THIS SPACE	Name
42	15 E WhITTON	SHE NAC2-4)30 ACA	4215 E WhITTON
Addres	S API- MA CONC	FILED 2-3-82 BY M	PhDENIX ARIZONA 85018
City	State Zip	INPUT 2 3-82 BY 1/2	City State Zip
7. Owr	er of Land:		20. Drillers Name:
<u>Dea</u>	N D. PETERSON	REGISTRATION NO 55 - 50/994	SAME
Name	= E W. TTaxi	(AMP) Blackmith	Name ,
Addres	SS Q	NUN EAPANSION AREA	Address
Tho-	ENIN ARIZONA ESDI	8	Cata Cata
City	State Zip		orly State Zip

Department License Number

EXEMPT WFL

- 1. Fill out this form in duplicate and mail to P.O. Box 2600, Phoenix, Arizona, 85002, or deliver ' to 99 East Virginia, Suite 100, Phoenix, Arizona 85004.
- If the Exempt Well is in fact a replacement (or deepening) well, state the registration number of the existing well.
- 3. Construction standards for new and replacement wells and the deepening and abandonment of existing wells, shall be in accordance with Department Rules and Regulations.

I, <u>Near</u>, state that the construction will be under the direct and personal supervision of the well driller designated on this form and that the designated driller holds a contractors license pursuant to ADSCHOFFINED

Date

Signature of Person Filing

Dean D. Peterson 4215 East Whitton Phoenix, Arizona S5018

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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REC	RECEIPT						
KIND ENTRY	FILE REFERENCE NO.						
55	501994						
	THRU						
[]						

	ACCOL	INT NO.		INT.))
OURCE	AGENCY	CHAPTER	DIV.	АССТ	ITEM DESCRIPTION		RATE	AMOUNT
			l I		Filing Fee for Notice of Intention	То		3.00
			[Drill an Exempt Well			
		[Water Rights (GW)		WAITEP	PAYMENT
		1 	 		File No: A(2-4)30 bca		GUESTS CHK NO	1 7160
		 	 		Registration No: 55-501994		55-1 Tax	° 3.00 0.00
		1	 1				TOTL GEN.CHE	_ 3.00 K 3.00
		1	 		Check # 7160			
					2/3/82 TOTA	AL (\$	# 423?	<u>a 13:02</u>

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3.00

Run Date: 10/30/2017

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

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w.

			Well	Reg.No		
Location A 2	.0 3.0	25 D C C	55 - 6	07672	AMA PHOE	NIX AMA
Registered Name	SALT RIVE PO BOX 19	R PROJECT, 80		Fi Application/Iss	ile Type REGIS ue Date 05/18/	STERED WELL 1982
	PHOENIX	AZ	85001			
Owner	OWNER			Well Type	NON-EXEMPT	
Driller No.	0			SubBasin	WEST SALT F	RIVER VALLEY
Driller Name				Watershed	SALT RIVER	
Driller Phone				Registered Water Uses	IRRIGATION	
County	MARICOPA			Registered Well Uses	CAPPED	
				Discharge Method	NONE	
Intended Cap	pacity GPM	0.00		Power	NO POWER C	ODE LISTED
Well Depth	202.00	D	Case Diam	12.00	Tested Cap	0.00
Pump Cap.	563.00	0	Case Depth	188.00	CRT	х
Draw Down	0.00	0	Water Level	89.00	Log	
			Acres Irrig	0.00	Finish	OTHER - BLACK STEEL - IRON -
Contaminati	ion Site:	YES - WITHIN 1 MIL	E OF A REMED	DIAL ACTION SITE		SEAMLESS
Tribe: Not	in a tribal zo	ne				
Comments	Recovery W	ell No. 74-548930				
Current Anti-						
Olionia Actio	075					
9/29/2017	8/5	WELL CAPPED				55-607672
Action	n Comment:	sm				
Action Histor	ry					
10/30/2017	820	NOTICE OF WELL	CAPPING REC	EIVED/ENTERED		
Action	n Comment:	sm				
3/24/2009	775	WQARF UPLOAD	OF WELL INVE	NTORY DATA		
Action	n Comment:	Old WQARF Code	= NULL			
8/16/2004	880	CHANGE IN REME	DIAL ACTION S	TE CODE		
Action	n Comment:	Old WQARF Code	= NULL			
10/1/1923	755	WELL CONSTRUC	TION COMPLET	TED		
Action	n Comment:					

							17.5E-07.0	
	Frizona De Groundwate 2.O. Box 36 602) 771-8 www.azwa	partment of Water Resources er Permitting and Wells Section 6020 Phoenix, Arizona 85067-6020 527 • (602) 771-8690 fax ater.gov	NO FEI No FEI					
 Review in Within five shall file t 	structions e (5) days his Notice.	prior to completing form in black or after capping an open well, the own	blue ink. RECEIVE her of the well OCT 16 20	D 117	FILE NU A(2- WELL RI 55 -	MBER 3)25dcc EGISTRATIC 6076	ON NUMBER	
** PLEASE PI	RINT CLE/	ARLY **	ADWR					
SECTION 1.	REGISTR	Y INFORMATION						
Well Type			Location of Well					
		Monitor / Piezometer	WELL LOCATION ADDRESS (IF ANY) 290	9 North 36	th Street, F	hoenix,	AZ 85018	
Stock			TOWNSHIP (N/S) RANGE (EA	M) SECTION	160 ACRE	40 ACRE	10 ACRE	
X Irrigation		Mineral Exploration	2.0 N 3.0 E	25	SE 1/4	SE 1	SW 1/4	
Municipal		Other (please specify):	LATITUDE 32 ° 28 ′ 50.11 ″N 112 ° 0 ′ 14.68 ′ Degrees Minutes Seconds Degrees Minutes Secon METHOD OF LATITUDE/LONGITUDE (CHECK ONE) *GPS: Hand-Held					
			*IF GPS WAS USED, GEO	GRAPHIC COC	DRDINATE DA	TUM (CHEC	Survey-Grade	
			OUNTY ASSESSOR'S PA	(please speci ARCEL ID NUN MAP	fy): IBER	PARCEL		
SECTION 2			COUNTY WHERE WELL IS LOCATED	MARICO	PA			
Well Owner	JUNER A	ND FIRM INFORMATION	Parson or Firm In	stalling the	Con	-		
FULL NAME OF COM Salt River Pro	MPANY, ORGA ject	NIZATION, OR INDIVIDUAL	FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL Salt River Project					
MAILING ADDRESS MS 16	ST52, PO	Box 52025	MAILING ADDRESS MS 16ST52, PO Box 52025					
CITY/STATE/	enix, Arizo	na 85072	CITY/STATE/ ZIP CODE Phoenix, Arizona 85072					
CONTACT PERSON	Adam Sm	ith, Senior Geohydrologist	CONTACT PERSON NAME AND TITLE Adam Smith, Sr.Geohydrologis					
NUMBER (6	02) 236-51	81 FAX (602) 236-2987	TELEPHONE NUMBER (602) 236-5181 FAX (602) 236-2987					
Section 3. C	ASING AN	D CAPPING INFORMATION	10					
currace casing	4	MATERIAL (T)						
					09/29/201	17		
(inches)	ABS	IF OTHER TYPE, DESCRIBE	TYPE OF CAP Steel square inside well vault.					
			MANUFACTURER OF CAP, IF ANY SRP Machine Shop Department					

SECTION 4. OPTIONAL BY PROPERTY OWNER AND WELL OWNER ON	ILY				
By checking this box, I hereby provide ADWR permission to enter the property for the purpose of taking water level measurements at this well. (See instructions.)					
SECTION 5. WELL OWNER AND PROPERTY OWNER SIGNATURE					
I HEREBY CERTIFY that the above statements are true to the best of my knowledge	and belief				
SIGNATURE OF WELL OWNER	DATE 10/11/2017				

17.5E-7N

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE PHOENIX, ARIZONA 85004

***** * * *

REGISTRATION OF EXISTING WELLS

	READ INSTRUCTION	IS UN BACK OF THIS FUR		
	PRIN	TOR TYPE - FILE IN I	DUPLICATE	
			07	
			FOR OFFICE	USE ONLY
		ARIZONA		607672
	REGISTRATION FEE (CHECK ON	E) DEPT. (1	REGISTRATION NO. 55-)25 ()
FXI	EMPT WELL (NO CHARGE)	D	FILE NO	11'are
	N-EXEMPT WELL - \$10.00	XX7 82 MAY 18 AU .02	FILED (DATE)	AT (TIME)
		WATE	INA	
		RESOURCES	AMA Phoen	is
ļ	Name of Registrant:			
	Salt River Project Agric	ultural Improvement and	Power District	
	P. O. Box 1980	Phoeni	<u>x Arizona</u>	85001
	(Address)	(City)	(State)	(Zip)
	File and/or Control Number ur	nder previous groundwater lav	w:	
	A02003025DCCGS1	35		
	(File Number)	(Control Number)		
1	a. The well is located within	the <u>SW ¼</u> SW ¼	%, Section	25
	of Township <u>2N</u>	<u>N/S</u> , Range <u>3</u> E	<u> </u>	& SRB & M, in th
	County of <u>Maricopa</u>		·	
	b. If in a subdivision: Name	of subdivision		
			······································	
•	Ine principal use(s) of water <u>Irrigation and non-irri</u> (If for irrigation use, number o	(Examples: irrigation - sto gation uses by SRP f acres irrigated from well <u>s</u>	ckwater - domestic - SRP_member_lands	municipal - industrial
	Ine principal use(s) of water <u>Irrigation and non-irrig</u> If for irrigation use, number o Owner of land on which well	(Examples: irrigation - stor gation uses by SRP If acres irrigated from well <u>s</u> is located. If same as Item	ckwater - domestic - SRP_member_lands 1, check this box [X]	municipal - industria
	Ine principal use(s) of water <u>Irrigation and non-irrig</u> If for irrigation use, number o Owner of land on which well	(Examples: irrigation - stor gation uses by SRP of acres irrigated from well <u>s</u> is located. If same as Item	ckwater - domestic - SRP_member_lands 1, check this box 🕅	municipal - industria
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INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in <u>duplicate</u> with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- 2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

. 55-607672 FORM W-2 10-46 JAHN-TYLER

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LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1.	Owner SALT RIVER VALLEY WATER USERS' ASSOCI	ATION
	Phoenix, Arizona	Name
		Address
2.	Lessee or Operator	Name
	n m. m. M. Room, Bettlider, Company	Address
3.	Driller E. N. Brown Drilling Company	Name
	Phoenix, Arizona	A J J
4	Location of well, Two 2N Rap 3E Section	25 SW1/ SW 1/ SE 1/4
т.	17gs-?N	10-acre subdivision
	DESCRIPTION	OF WELL
5.	Total depth of holeft.	
6 .	Type of casing storepipe	
7.	Diamater and length of casing 12 in. fromto,	in. fromtoin. fromto
8.	Method of scaling at reduction paints	
•	Perforated from 198 to 50 from to	, from to, fromto
<i>.</i>		umber cub net foot 6 holes every 6 inches
10.	Size of cutsN	umber cun per 1001
п.	If screen was installed: Longthft. Diamin. Type	
12.	Method of construction, drilled	rilled, dug, driven, bored, jetted, etc.
13.	Date completed October, 1923 D)espened
14	Month Year $7-1/2$ ft	Month Tear
14.	If flowing well, so state.	December 10, 1945
15.	Present depth to water <u>20.0</u> ft. [If flowing well, so state.	Data of measurement. Possibuli 101 1020
16.	Describe point from which depth measurements were made, and give sea-	evel elevation if available_pumphouse_floor = 1,170.3
	<u> </u>	
17.	If flowing well, state method of flow regulation	
	DISCHARG	E DATA
18	Well discharge 422 g. p.m.	
	gal, per min. or cu. ft. ;	ber sec. or miner's inches.
19.	Method of discharge measurement norr weir, o	rifice, current motor, etc.
20.	Drawdown 81.80 ft.	м. М
21.	Annual discharge in acre-feet, or number of hours pumped: 194466	1hrs. 1945 <u>574</u> f.crh
22.	Purpose of use Irrigation	·
22	Place of user Two RosSection	Acres
	{See 24}	Legal subdivision
	TwpRgeSection	Legal subdivision '
24.	If well is part of irrigation system of Irrigation District, Association or C	Company, omit 23 and give name of project.
	SALT RIVER VALLEY WATER U	SERS' ASSOCIATION
		(A-2-3) 25
	. · · · · · · · · · · · · · · · · · · ·	DO NOT WRITE IN THIS SPACE
	EQUIPMENT DATA	OFFICE RECORD
	•	Received 2-1-46 by 11
25.	Kind of pump	Filed <u>2-5-46</u> by 1j
	jurdine, çantrıtuğal, etc.	File No. (A-2-3)25dcc
26	. Kind of power electric	Cross-referenced (Name)by
	electric, natural gas, atc.	Cross-referenced (Basin)by
27	. Hersepower rating of motor20	Cross-referencedby

(See Other Side)

From (feet)	To (feet)	Description	n of formation material
0	5	Top soil	
5	21	Caliche	
21	30	Coarse sand	
30	90	Clay	
90	116	Celiche	· · ·
116	140	Clay	·
140	170	Caliche	
170	180	Cemented sand and gravel	
180	182	Rock	· · · · · · · · · · · · · · · · · · ·
192	202	Comented gravel	
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Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in wall.

LOG OF WELL

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I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief. SALT RIVER VALLEY WATER USERS' ASSOCIATION

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By JACoursey H. J. LARSON Remargamentan Estar General Superintendent and Chief Engineer Phoenix, Arizons Address

Date_February 1, 1948

	J	ŕ															c	
un Date:	05/01/2006					ARIZONA DEPARTMENT OF V	VATER	RES	OURCES) WELL	REPO	RТ				rage.	ת	
												Most R Auth. I	ecent ssued:	Org.	Reg	į		
ad Towr	, Range Sect	6	ŏ Q4	o o	0 Reg No.	<u>Registered Full Name & Address</u>	Well	Case Depth	Case <u>Diameter</u>	Water Level	(GPM)	Drill Lic No	Issue Date	Date	n is a		<u>6</u>	ı⊐,
2.0	3.0 25 B/M/P:		1 U	10	55 - 607672	SALT RIVER PROJECT, PO BOX 1980 PHOENIX A7 85001	202	188	12	68	563	0		10/01/1923	AB (20		
fell Type:	NON-EXEMP									,		005	0000760700			5	1	
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	3.0 25		0		55 - 582485	THOMAS HEATING & AIR CONDITIONING	0	0	0	o	0	533	08/03/2000		- ⊢	22		
ancelled: Vell Type:	Y B/M/P: MONITOR					3726 E THOMAS RD PHOENIX, AZ 85018								F				
A 2.0	3.0 25		0		55 - 585412	THOMAS HEATING & AIR CONDITIONING	55	35	4	30	0	533	02/14/2001	02/27/2001	F	20	×	
Vell Tvbe:	B/M/P MONITOR	<u>.</u> .				3726 E THOMAS RD PHOENIX, AZ 85018												
	3.0 25				55 - 585413	THOMAS HEATING & AIR CONDITIONING	55	35	4	8	0	533	02/14/2001	02/26/2001	⊢	20	×	
	B/M/P	<u>.</u> .)	I		3726 E THOMAS RD PHOENIX, AZ, 85018												
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ancened Nell Type	: MONITOR	-				PHOENIX, AZ 85018											1	
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Sancelled	: Y B/M/P : MONITOR	ė.				3/26 E THOMAS RU PHOENIX, AZ 85018												ļ
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	B/M/B	č. 2				2502 E UNIVERSITY PHOENIX, AZ 85034												
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	B/M/B	, a Z				2502 E UNIVERSITY PHOENIX, AZ 85034												
well type							4	۶	4	23	6	533		08/18/1992	Σ	07	×	z
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Well Type	MONITOR (OR PII	EZOM	IE T EF	~	ENGLEWOOD, CO 80112							5					
A 2.	0 3.0 24	2) 55 - 536142	2 SOUTHLAND CORP.	0	0	0	0	0	533			Σ	20		z
Cancellet	H Y B/M/I	ة منا	#70M		~	7167 S ALTON WAY ENGLEWOOD, CO 80112												
Well typ.	B. INCINION 3	5	į	i					I									

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Г STATE OF ARIZONA Salt River Project Agricultural Impr. & DEPARTMENT OF WATER RESOURCES Power District WATER RIGHTS ADMINISTRATION P O Box 1980 99 EAST VIRGINIA Phoenix AZ 85001 PHOENIX, ARIZONA 85004 RECEIPT L _ KIND FILE REFERENCE NO. 607704 THRU 55 -55 - 607743 ACCOUNT NO. INT. FUND AGENCY CHAPTER DIV. ACCT. SOURCE ITEM DESCRIPTION RATE \$ AMOUNT Filing Fee for Registration of Existing 10.00 400.00 Wells PAYMENT WAITER File # Various **GUESTS** 40 60934 CHK NO 10.00 40@ 55-I 400.00 TAX 0.00 400.00 TOTL GEN.CHEK 408.00 Paid Check #060934 # 8224 A 13:16 \$ TOTAL 5-20-82 400.00 $\mathbf{p}\mathbf{b}$ 地方の記念様は生まれ 語言の言語 高大なな言語などの

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Arizona Department of Water Resources Operations Division 500 N. 3rd St. Phoenix, AZ 85004-3903

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 DWR AR22 - Nov 84

 Date Received:

 Received By

 AMA

 Date Routed to AMA:

MEASURING DEVICE MALFUNCTION REPORT FORM PART1 - NOTIFICATION

INSTRUCTIONS A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT		
Address: P.O. Box 52025 Phoenix, AZ 8507	72-2025	
Telephone Number: (602) 236-2612	Well Registration Number:	55607712
SRP Coordinate Location: 18.5E-07.0N	SRP Pump Number: 114	
Measuring Device Type: Flow Meter	Malfunctioned on: 7/28/07	
For the reason that: Upgrade to mag meter		
Should be back in service: 7/28/07		
Signed: Take Contr	Date: 7-30-07	



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18.5E-7N

DEPARTMENT OF WATER RESOURCES

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99 EAST VIRGINIA AVENUE Phoenix, Arizona 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING

PRINT OR TYPE - FILE IN DUPLICATE

	07	
•	ARIZONA	
REGISTRATION FEE (CHECK ONE)	DEPT. OFREGISTRATION NO. 55-60771	2
EXEMPT WELL (NO CHARGE)	1 '82 MAY 18 MO 15 + 18 82 10	de la
NON-EXEMPT WELL - \$10.00	$\frac{1}{10} \frac{1}{10} \frac$	
		· · · ·
1 N	AMA Tholney	
Salt River Project Agricultu	ural Improvement and Power District	
P. 0. Box 1980	Phoenix Arizona 850	01
(Address)	(City) (State) (.	2ip)
2. File and/or Control Number under	r previous groundwater law:	
A02004030DCCGS1	35- None	
2 The state is the state of the state	SE 1/ SE 1/ SW 1/ Quarter 30	
3. a. The well is located within the	4E E/M C & SRB & M	,
County of Mar	ricopa .	i, in uic
b. If in a subdivision: Name of	subdivision	
Lot No, Address		
4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - i	ndustrial)
		··
5. If for irrigation use, number of a	cres irrigated from well <u>SRP member 1</u> ands	
6 Owner of land on which well is i	located of same as item 1 should this boy IV	
o. Owner of faile of which were is t		
(Address)	(Citu) (State)	Zio
		εų
7. Well data (If data not available, v	write N/A)	
b Diameter of casing		
c. Depth of casing	72 feet	
d. Type of casing <u>10 ga sto</u>	vepipe with mills knife perforations	
e. Maximum pump capacity	gallons per minute.	
f. Depth to water <u>17 stat</u>	ic (Jan. 1982) feet below land surface.	
g. Date well completed <u>Septer</u> (Month	mber 20 1923 -	
8 The place(c) of use of water If	same as Itam 3 chack this boy 🗆	
4 % % Section	on Townshin Bange	
%% Section	on Township Range	
SRP member lands through di	stribution system	
Attach additional sheet if necessa	iry.	
9. DATE MAY 17 1993 GNATI	IRE OF REGISTRANT Care of a	
		h

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- 1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

Al is the second

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

961202V

- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Г ٦ Salt River Project Agricultural Impr. & Power District P O Box 1980 Phoenix AZ 85001

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

RECEIPT

	L						ENTRY FI	E REFERENCE NO.
							_55 60	7 <u>704</u>
	ACCOU	INT NO.		INT.			55 - 60	7743
SOURCE	AGENCY	CHAPTER	DIV.	ACCT.	ITEM DESCRIF	TION	RATE	\$ AMOUNT
			 		Filing Fee for Registrat	ion of Existing		
					Wells		10.00	400.00
					File # Various	······	WAITER GUESTS CHK NO 40	PRYMENT 40 60934 @ 10.00
						······	55-I TAX TOT GEN.C	400.00 0.00 400.00 IEK 400.00
		l			Paid Check #060934	• • • • • • • • • • • • • • • • • • •		
						(# 8224	R 13:16-
					5-20-82	TOTAL (\$	400.00

1

pb

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16E-6.8N

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE PHOENIX. ARIZONA 85004

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REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING

PRINT OR TYPE - FILE IN DUPLICATE

					. [FOR OFF	ICE USE O	NLY	
				AKIZUN NEPT	IA F	REGISTRA	TION NO. 5	. 60	7726	~
REGISTR	ATION FEE (CH	ECK ONE)		warten i re v	Ċ I	FILE NO.	4(2	<u>3)</u> 39	5 bb	b
EXEMPT WE	LL (NO CHARG	E) 🗆	82	MAY 18	Ato 2	47_LED <u>5</u>	-18-2	PZAT /	0.470	\sim
NON-EXEMP	T WELL - \$10.0	x⊡ 00							(TIME)	
				WATE	d rzoł	AMAC	haca	<i>ī.c</i>		
Name of	f Registrant [.]			neooon	- A	A	win	ye		
Salt F	River Project	Agricultural	Impro	vement a	and Po	ower Di	strict			
P. 0.	Box 1980			P	noeni>	x	Arizoi	na	85001	
(Address)					(City)		(State)	(Zip)	
File and	l/or Control Nu	ımber under pre	evious g	groundwat	ter law	v:				
A02003	3035BBBGS1		<u>35</u>	- No	one					
(File Numt	ber}		(Co	ntrol Numbe	er)					
a. The	e well is locate	d within the	NW	<u>a NW</u>	_¼	<u>NW</u> _%,	Section _	35		
of	Township	2N	<u>N/S</u> ,	Range _	3E		<u> </u>	G & SRE	3&M,ir	the
Cou	unty of	Maricop	a							
b. Ifi	in a subdivisior	n: Name of subo	division							
Lot	t No	_, Address								
The prin <u>Irrig</u> If for in	ncipal use(s) of <u>ation and nor</u> rrigation use, n	umber (Exan	npies: <u>ises b</u> irrigate	rrigation y SRP d from v	- stoc	P membe	odomestic			strial
The prin Irrig If for in Owner o	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi	umber of acres	nples: <u>ises b</u> irrigate ed. If	irrigation y SRP d from v same as l	- stoc vell <u>SR</u> Item 1	P membe , check	odomestic er lands this box			strial
The prin Irrig If for in Owner o	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi	umber of acres	nples: I <u>ses b</u> irrigate ed. If	irrigation y SRP d from v same as l	- stoc vell <u>SR</u> Item 1 (City)	P membe	- domestic er lands this box (State	- munici	(Zip)	
The prin Irrig If for in Owner o (Address) Well da	ncipal use(s) of ation and nor rrigation use, n of land on whi ta (If data not	available, write	npies: <u>ises b</u> irrigate ed. If 	irrigation y SRP d from v same as I	- stoc vell <u>SR</u> Item 1 (City)	Rwater P membe	domestic	- munici	(Zip)	
The prin Irrig If for in Owner o (Address) Well dat a. De	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well	available, write 620	npies: <u>ises b</u> irrigate ed. If N/A)	irrigation y <u>SRP</u> d from v same as I	- stoc vel <u>SR</u> Item 1 (City)	P membe	domestic er lands this box	- munici	(Zip)	
The prin Irrig If for in Owner o (Address) Well dat a. Dej b. Dia	ncipal use(s) of a <u>tion and nor</u> rrigation use, n of land on whi ta (If data not pth of Well ameter of casin	umber of acres ich well is locat available, write 620 g 20" 0-3631	npies: ises by irrigate ed. If N/A)	y SRP d from v same as 1	- stoc vell <u>SR</u> Item 1 (City)	P membe P membe I, check feet incl	- domestic er lands this box (State	- munici	(Zip)	
The prin <u>Irrig</u> If for in Owner of (Address) Well dat a. Dep b. Dia c. Dep	ncipal use(s) of ation and nor rrigation use, n of land on whi ta (If data not pth of Well ameter of casin pth of casing	available, write 2011 - jrrigation u umber of acres ach well is locate available, write 620 g 20" 0-363', 620	npies: <u>ises b</u> irrigate ed. If N/A) , 18"	y SRP d from v same as l	- stoc vel <u>SR</u> Item 1 (City)	P membe P membe I, check feet inch feet	er lands this box (State	- munici	(Zip)	strial,
The prin Irrig If for in Owner of (Address) Well dat a. Dep b. Dia c. Dep d. Ty	ncipal use(s) of ation and nor rrigation use, n of land on whi ta (If data not pth of Well ameter of casing pth of casing	available, write 20" 0-363", 620 8 ga stovepipe	nples: <u>ises b</u> irrigate ed. If N/A) <u>, 18^u</u> <u>e with</u>	rrigation y SRP d from v same as l 355-620' mills k	- stoc vell <u>SR</u> (City) (City)	P member P member I, check feet incl perfor	er lands this box (State nes ations	- munici	(Zip)	
The prin Irrig If for in Owner of (Address) Well dat a. De b. Dia c. De d. Ty e. Ma	ncipal use(s) of ation and nor rrigation use, n of land on whi ta (If data not pth of Well ameter of casin pth of casing pe of casing eximum pump	available, write 2011 0-3631, available, write 620 2011 0-3631, 620 8 ga stovepipe capacity	nples: <u>ises b</u> irrigate ed. If N/A) <u>, 18"</u> <u>e with</u> 1560	rrigation y SRP d from v same as 1 355-620' mills k	- stoc vell <u>SR</u> ltem 1 (City)	P membe P membe I, check feet feet feet feet gall	- domestic er lands this box (State nes ations ons per m	- munici	(Zip)	
The prin <u>Irrig</u> If for in Owner of (Address) Well dat a. Del b. Dia c. Del d. Tyt e. Ma f. De	ncipal use(s) of ation and nor rrigation use, n of land on whi ta (If data not pth of Well ameter of casing pth of casing pe of casing pth to water	available, write available, write <u>620</u> <u>20" 0-363'</u> <u>620</u> <u>8 ga stovepipe</u> <u>66 static</u>	nples: <u>ises b</u> irrigate ed. If N/A) <u>18"</u> <u>e with</u> <u>1560</u> (J	rrigation y SRP d from v same as 1 355-620' mills k an. 1982	 stoc vell <u>SR</u> ltem 1 (City) (City) 	P membe P membe I, check feet feet feet gall feet	er lands this box (State ations ons per m below la	iinute.	(Zip)	
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The prin <u>Irrig</u> If for in Owner of (Address) Well dat a. De b. Dia c. De d. Ty e. Ma f. De g. Da	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well pth of casing pth of casing pth to water te well comple case(s) of use of	water (Exam i-irrigation u umber of acres ich well is locat available, write 620 g 20" 0-363', 620 g 20" 0-363', 620 8 ga stovepipe capacity 66 static (Month) f water. If same	nples: <u>ises b</u> irrigate ed. If N/A) <u>, 18"</u> <u>e with</u> <u>1560</u> <u>(J</u> <u>er</u> as Ite	rrigation y SRP d from v same as 1 355-620' mills k an. 1982 5 Day m 3. che	- stoc vell <u>SR</u> Item 1 (City) (City) (City) (City) (City) (City) (City)	P membe P membe I, check feet feet gall feet 957 	- domestic er lands this box (State ations ons per m : below lan	- munici	(Zip)	
The prin Irrig If for in Owner of (Address) Well dat a. De b. Dia c. De d. Ty e. Ma f. De g. Da The pla	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well ameter of casing pth of casing pth to water te well comple nce(s) of use of 41/4	umber of acres ich well is locati available, write 620 g 20" 0-363', 620 8 ga stovepipe capacity 66 static ted (Month) f water. If same %, Section	nples: <u>ises b</u> irrigate ed. If N/A) <u>18</u> <u>e with</u> <u>1560</u> (J <u>er</u> as Ite	rrigation y SRP d from v same as l 355-620' mills k an. 1982 5 Day) m 3, che Townshi	- stoc vell <u>SR</u> ltem 1 (City) (City	P membe p membe , check feet perfor gall perfor is box [domestic er lands this box (State actions ons per m below lan 	- munici	(Zip)	strial,
The prin <u>Irrig</u> If for in Owner of (Address) Well dat a. Del b. Dia c. Del d. Ty e. Ma f. De g. Da f. De g. Da	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well pe of casing pe of casing pth to water te well comple nce(s) of use of 414	water (Exam <u>i-irrigation u</u> umber of acres ich well is locat available, write <u>620</u> <u>g 20" 0-363'</u> <u>620</u> <u>g 20" 0-363'</u> <u>620</u> <u>8 ga stovepipe</u> capacity <u>66 static</u> ted <u>September</u> (Month) if water. If same <u>%</u> , Section %, Section %	nples: <u>ises b</u> irrigate ed. If N/A) <u>, 18"</u> <u>e with</u> <u>1560</u> <u>(J</u> <u>er</u> as Ite	rrigation y SRP d from v same as l 355-620' mills k lan. 1982 5 Day m 3, che Townshi Townshi	- stoc vell <u>SR</u> Item 1 (City) (Cit	P member P member I, check feet feet gall feet 957 reart	domestic er lands this box (State ations ons per m below lan below lan c. F	inute. nd surface	(Zip)	strial,
The prin Irrig If for in Owner of (Address) Well dat a. Dep b. Dia c. Dep d. Typ e. Ma f. De g. Da f. De g. Da f. SRP r	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well pth of casing pth of casing pth to water te well comple uce(s) of use of 4¼ member lands	umber of acres ich well is locat available, write 620 g 20" 0-363', 620 g 20' 0-363', 60' 0-30', 60' 0-3	nples: <u>ises b</u> irrigate ed. If N/A) , 18" <u>e with</u> 1560 (J <u>er</u> as Ite ibutic	mills k an. 1982 5 Day) m 3, che Townshi on system	- stoc vel <u>SR</u> ltem 1 (City) (Cit	P membe P membe I, check feet feet perfor gall feet 957 . is box [- domestic er lands this box (State ations ons per m : below lan]. F	- munici	(Zip)	strial,
 The print <u>Irrig</u> If for in Owner of (Address) Well data Well data Dele Dia C. Dele Dia C. Dele G. Dele The pla <u>x</u> <u>x</u> <u>SRP r</u> Attach 	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well ameter of casing pth of casing pth to water te well comple nce(s) of use of 414 <u>member lands</u> additional shee	umber of acres ich well is location available, write 620 g 20" 0-363', 620 g 20" 0-36', 620 g 20" 0-36', 620 g 20" 0-36', 620 g 20" 0-36', 620 g 20' 0-36', 60'	nples: <u>ises b</u> irrigate ed. If N/A) <u>, 18"</u> <u>e with</u> <u>1560</u> <u>(J</u> er <u>ibutic</u>	rrigation y SRP d from v same as l 355-620' mills k lan. 1982 5 Day m 3, che Townshi on system	- stoc vell <u>SR</u> ltem 1 (City) (City	P membe P membe , check , check feet perfor gall feet 957 feer	domestic er lands this box (State nes ations ons per m below lan F	inute. Aange Range	(Zip)	
The prin <u>Irrig</u> If for in Owner of (Address) Well dat a. Del b. Dia c. Del d. Ty e. Ma f. De g. Da The pla <u>%</u> <u>%</u> <u>%</u>	ncipal use(s) of <u>ation and nor</u> rrigation use, n of land on whi ta (If data not pth of Well ameter of casing pe of casing pth of casing pth to water te well comple nce(s) of use of 414 <u>additional shee</u> MAV 1. 57 47	water (Exam <u>i-irrigation u</u> umber of acres ich well is locat available, write <u>620</u> <u>g 20" 0-363'</u> , <u>620</u> <u>g 20" 0-363'</u> , <u>620</u> <u>8 ga stovepipe</u> capacity <u>66 static</u> ted <u>Septembr</u> (Month) i water. If same ¼, Section through distr t if necessary.	nples: <u>ises b</u> irrigate ed. If N/A) <u>18"</u> <u>e with</u> <u>1560</u> (J <u>er</u> as Ite <u>ibutic</u>	mills k ad from v same as l 355-620' mills k an. 1982 5 Day) m 3, che Townshi Days tel	- stoc vell <u>SR</u> Item 1 (City) (City	P member P member I, check feet perfor gall 557 feet 957 feet	er lands er lands this box (State ations ons per m below lan 	inute. ange ange	(Zip)	

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

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INSTRUCTIONS FOR REGISTRATION QUESTIONS

- The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

✓ ✓ ✓ Salt River Project Agricultural Impr. & Power District
P 0 Box 1980
Phoenix AZ 85001

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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[ACCOL	INT NO.		INT		(33 -100	1/43
FUND SOURCE	AGENCY	CHAPTER	עום.	ACCT.	ITEM DESCRIPTION	RATE	\$ AMOUNT
			[[Filing Fee for Registration of Existing		
		 	 		Wells	10.00	400.00
					File # Various	WAITER GUESTS CHK NO 55-I TAX	PRYMENT 40 60934 0 0.00 400.00 0.00 0.00
Į –					Paid Check #060934	GEN.CH	EK 400.00
~	<u></u>			·1		* 8224	
					5-20-82 TOTAL	\$	400.00

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DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE

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PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE - FILE IN DUPLICATE

	ARIZON		ONLY
REGISTRATION FEE (CHECK ONE)	DEPT.	REGISTRATION NO. 55-60	07/3/
	-	FILE NO. $\frac{4(2-3)}{5}$	25 COC
NON-EXEMPT WELL $-$ \$10.00	'8 2 MAY 18	FAND 47 6 70 -0 0 AT	(TIME)
	WATE		
	RESOU	Appenix	
Name of Registrant:			
Salt River Project Agricultura	<u>1 Improvement and Po</u>	wer District	05001
P. U. BOX 1980 (Address)	Pnoen1X (City)	Arizona (State)	85001 (Zip)
File and/or Control Number under r	revious groundwater law	r.	
A02003025CBBGS2	35- None		•
(File Number)	(Control Number)		
. a. The well is located within the	<u>NW 1/4 NW 1/4 S</u>	W ¼, Section 25	·
of Township <u>2N</u>	<u>N/S</u> , Range <u>3</u>	BE <u>E/W</u> , G & S	RB & M, in the
County of Marico	pa	_·	
b. If in a subdivision: Name of su	bdivision		
Lot No, Address			
. Owner of land on which well is loc	ated. If same as Item 1	, check this box 🖄	
			·····
(Address)	(City)	(State)	(Zip)
(Address) . Well data (If data not available, wri	(City) te N/A)	(State)	(Zip)
(Address) . Well data (If data not available, wri a. Depth of Well40((City) te N/A) D	(State)	(Zip)
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INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in <u>duplicate</u> with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- 1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- 2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

55-607731

17E- 7± N LAND DEPARTMENT WATER DIVISION / STATE OF ARIZONA

REPORT OF WELL DRILLER

Please complete & return.

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IMPORTANT!

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1.	OWNER SALT RIVER VALLEY WATER USERS! ASSOCIATION
	P. O. Box 1980, Phoenix, Arizona
2.	Lessee or Operator
3.	Address DRILLER ROSCOP MOSS Company Name
	4360 Worth Street, Los Angeles, Calif.
4.	Location of well: Twp. 2N Rge. 3E Section 25 NW 4 NW 4 5W 4
5.	Intention to Drill File No
	DESCRIPTION OF WELL
6.	Total depth of hole
7.	Type of casing. Mild steel plate
8.	Diameter and length of casing 28 in from 0 to 72 18 in from 0 to 400, in from in from
9.	Method of scaling at reduction points
10.	Perforated from 40 to $\frac{65}{28}$ from $\frac{150}{150}$ to $\frac{400}{100}$ from to to to $\frac{16}{100}$ from to $\frac{16}{100}$
11.	Size of cuts 1/4 x 2-1/2 Number of cuts per foot 19 per 5"
12.	If screen was installed: Lengthft. Diamin. Type
10	Wated at another Drilled
10.	deiled, dug, driven, bored, jetied, cic.
14.	Date started
15.	Date completed April 21, 1962 Month Day Year
16.	Depth of water
17.	Describe point from which depth measurements were made, and give sea-level elevation if available
	Ground Surface.
18.	If flowing well, state method of flow regulation

19. REMARKS:	DO NOT WRITE IN THIS SPACE
	OFFICE RECORD
	Received 5-25-62 by K
	Filed 5-31-62 by K
	File No. (A-2-3)25 cbb
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(Well Log to Appear on Reverse Side)

WE FORM G-301 REV. 4-17-52

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	ТО (РЕВТ)	DESCRIPTION OF FORMATION MATERIAL
0	3	Top soil
3	50	Clay and caliche
50	65	Sandy clay
65	165	Clay
165	245	Hard clay and caliche
245	400	Hard conglomerate
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I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

8773

ROSCOE MOSS COMPANY. Driller 4360 Worth Street, Los Angeles, Calif, Date

· — ·

5-68.5 (10-2-3)25 666 9 466
Application No. <u>S-683</u> File No. (A-2-3)25 cbb Permit No. <u>S-666</u>
Filed <u>March 20, 1962</u> (Applicant must not fill in the above blanks)
This application shall be submitted to the State Land Department, Water Division, Phoenix, Arizona, in accordance with the provisions of Article 7, Chapter 1, Title 45, Arizona Revised Statutes, and the rules and regulations of the State Land Department.
Applications must be accompanied by fees made payable to the STATE LAND DEPARTMENT as follows:
Application Fee \$ 3.00 Permit Fee \$ 5.00
APPLICATION FOR A PERMIT
() TO DRILL) () TO DEEPEN) AN IRRIGATION WELL IN A CRITICAL AREA (X) TO REPLACE) WITHIN THE STATE OF ARIZONA
X, We, SALT RIVER VALLEY WATER USERS' ASSOCIATION
County of Maricona
(Post Office Address)
State of <u>Arizona</u> , do hereby make application for a permit to
() Drill new well, () Deepen or (x) Replace the following described well
in the Salt River Valley Critical Area. 17E-7-1/2N Well #298
1. Location and description of proposed well: Location of Proposed Well N
Twp. 2N Rge. 3E Sec. 25; $\frac{NW}{1}$ $\frac{1}{AC}$. Subdiv.)
Depth_400_ft. Type of casing 5/16"~Plate pipe W
Proposed Withdrawa1 2000 (Ac.ft. per year)
Name and Address of Driller:
Roscoe Moss Co.
Los Angeles, California
2. Location and description of existing well: (Indicate location of well
Twp. 2N Rge. 3E Sec. 26; $\frac{\text{NE}}{(10 \text{ Ac. Subdiv.})}$
Depth 200 ft. Diameter 12 in.
Date drilled Oct., 1923 Location of Existing Well
Driving Unit 20 HP electric motor H.P.
Rating of Motor
Discharge when Drilled 422 GFM
Present Discharge 496 GFM (g.p.m.)
Static Water Level 42.6 ft. S
Depth of Pump Setting submersible installation @ 139'
Pumping Lift104.7ft.

3. Reason new well required <u>Supplement water supply</u> . 4. Land to be irrigated: Lands within Association boundaries TwpRgeSec		8 ×	
3. Reason new well required <u>Supplement water supply</u> . 4. Land to be irrigated: Lands within Association boundaries TwpRge,Sec	u *		
3. Reason new well required <u>Supplement water supply</u> . 4. Land to be irrigated: Lands within Association boundaries TwpRgeSec			
 4. Land to be irrigated: Lands within Association boundaries TwpRge,Sec	ater supply.	eason new well required Supplement to	3 . 1
 4. Land to be irrigated: Lands Within Association Boundaries TwpRge,Sec			
TwpRge,Sec		and to be irrigated: Lands within As	4. 1
(Legal Subdivision Description) (Acres) TwpRgeSec		wpRge,Sec	
TwpRgeSec	(Acres)	(Legal Subdivision Description)	-
(Legal Subdivision Description) (Acres) 5. Above described land is now irrigated as follows:Project Canals & v 6. Record of cultivation and irrigation of land described herein: All lands within Project under cultivation prior to 1948. 5. All lands within Project under cultivation prior to 1948. 6. Record of cultivation and irrigation of land described herein: All lands within Project under cultivation prior to 1948. 5		wpRgeSec	
 5. Above described land is now irrigated as follows: Project Canals & v 6. Record of cultivation and irrigation of land described herein: All lands within Project under cultivation prior to 1948. S. S 7. It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor. 8. K. We, SALT RIVER VALLEY WATER USERS' ASSOCIATION	(Acres)	(Legal Subdivision Description)	-
6. Record of cultivation and irrigation of land described herein: All lands within Project under cultivation prior to 1948. S S S S 7. It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor. CERTIFICATE 8. K. We, SALT RIVER VALEY WATER USERS' ASSOCIATION the applicant named in the above and foregoing application, do herefor certify under the penalty of perjury, that the information contained and statements therein made are, to the best of my knowledge and belief, true, correct, and complete. DATED THIS March 15th day of March 1962 SALT RIVER VALEY WATER USERS' ASSOCIATION to the set of my knowledge and belief, true, correct, and complete. DATED THIS March 15th day of March 1962 SALT RIVER VALEY WATER USERS' ASSOCIATION to the set of my knowledge and belief, true, correct, and complete. DATED THIS March 15th day of March 1962 SALT RIVER VALEY MATER USERS' ASSOCIATION to the set of the set of my knowledge and belief, true, correct, and complete. DATED THIS March 15th day of March 1960 SALT RIVER VALEY WATER USERS' ASSOCIATION to the set of my knowledge and belief, true, correct, and complete. DATED THIS March 15th day of March 1960 SALT RIVER VALEY	i as follows: Project Canals & we	bove described land is now irrigate	5.
 6. Record of cultivation and irrigation of land described herein: All lands within Project under cultivation prior to 1948. S. S 7. It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor. 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. K. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 8. L. We, <u>SALT RIVER VALLEY WATCH USERS' ASSOCIATION</u> CERTIFICATE 9. O. Box 1960, Phoenix, Arizona (Post Offlice address) BY	· · · · · · · · · · · · · · · · · · ·		
 6. Record of cultivation and irrigation of land described herein: All lands within Project under cultivation prior to 1948. S			
All lands within Project under cultivation prior to 1948. S	of land described herein:	Accord of cultivation and irrigation	6.
S	er cultivation prior to 1948.	All lands within Project und	
S			
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8. K. We, <u>SALT RIVER VALLEY WATER USERS' ASSOCIATION</u> . the applicant named in the above and foregoing application, do herefore and statements therein made are, to the best of my knowledge and belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>March</u> <u>1962</u> SALT RIVER VALLEY WATER USERS' ASSOCIATION (Owner or his authorized agent) P. 0. Box 1980, Fhoenix, Arizona (Post Office address) BY <u>March</u> <u>15</u> BY <u>March</u> <u>15</u> BY <u>March</u> <u>1962</u>			
DATED THIS March 15th day of March 19 62 SALT RIVER VALLEY WATER USERS' ASSOCIATION (Owner or his authorized agent) P. O. Box 1980, Phoenix, Arizona (Post Office address) BY BY BY	ATE	CERTIFIC	
SAL <u>T RIVER VALLEY WATER USERS' ASSOCIATION</u> (Owner or his authorized agent) P. O. Box 1980, Phoenix, Arizona (Post Office address) BY	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and	CERTIFIC K, We, <u>SALT RIVER VALLEY WATER USERS' A</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete.	8.
SALT RIVER VALLEY WATER USERS' ASSOCIATION (Owner or his authorized agent) P. O. Box 1980, Phoenix, Arizona (Post Office address) BY	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> 1962	CERTIFIC K, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March</u> 15th day of	8.
P. O. Box 1980, Phoenix, Arizona (Post Office address) BY	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> 1962	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March</u> 15th day of	8.
BY C PHYMUTH BY F. Griswold, Secretary	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>R VALLEY WATER USERS' ASSOCIATION</u> r or his authorized agent)	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>SALT RIVE</u> (Owner	8.
3 Start F. Griswold, Secretary	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>R VALLEY WATER USERS' ASSOCIATION</u> r or his authorized agent) <u>x 1980</u> , Phoenix, Arizona Office address)	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>SALT RIVE</u> (Owner P. O. BU (Dosi	8.
LI BEE H	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>R VALLEY WATER USERS' ASSOCIATION</u> r or his authorized agent) <u>x 1980</u> , <u>Phoenix</u> , <u>Arizona</u> Office address) Quintum March	CERTIFIC K, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of SALT RIV (Owner P. O. BU (Fost	8.
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PLOT A CONTRACT	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>R VALLEY WATER USERS' ASSOCIATION</u> <u>r or his authorized agent</u>) <u>ox 1980</u> , <u>Phoenix, Arizona</u> <u>Office address</u>) <u>Office address</u>) <u>J</u> . F. Griswold, Secretary	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>SALT RIVE</u> (Owner P. 0. BU (Post BY	8.
ELOV V V V	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>Revaller Water Users' Association</u> r or his authorized agent) <u>1980</u> , <u>Phoenix</u> , <u>Arizona</u> <u>Office address</u>) <u>Office address</u>) <u>Office address</u>) <u>Office address</u>) <u>Office address</u>) <u>Office address</u>)	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>SALT RIVE</u> (Owned P. 0. BU (Post BY	8.
WD Form N&//(H303-11/12-56 3-64	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>R VALLEY WATER USERS' ASSOCIATION</u> r or his authorized agent) <u>1980</u> , Phoenix, Arizona Office address) <u>Office address</u>) <u>Office address</u>) <u>Office address</u>) <u>Office address</u>)	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>SALT RIVE</u> (Owned P. O. B (Post BY	8. 29ħ
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	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>Provaluevy WATER USERS' ASSOCIATION</u> r or his authorized agent) <u>Nx 1980 , Phoenix, Arizona</u> <u>Office address</u>) <u>Office address</u>) <u>Secretary</u>	CERTIFIC K, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of <u>SALT RIVE</u> (Owner P. O. B (Post No. 10 (Post No. 1	8. 29ħ 3-6
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	ATE <u>SSOCIATION</u> foregoing application, do hereby , that the information contained the best of my knowledge and <u>March</u> <u>19 62</u> <u>R VALLEY WATER USERS' ASSOCIATION</u> r or his authorized agent) <u>ATER USERS' ASSOCIATION</u> r or his authorized agent) <u>ATER USERS' ASSOCIATION</u> <u>1980</u> , Phoenix, Arizona <u>Office address</u>) <u>Office address</u>) <u>Office address</u>) <u>J</u> . F. Griswold, Secretary	CERTIFIC k, We, <u>SALT RIVER VALLEY WATER USERS'</u> the applicant named in the above and certify under the penalty of perjury and statements therein made are, to belief, true, correct, and complete. DATED THIS <u>March 15th</u> day of SALT RIVE (Owner P. 0. Bu (Post BY Support Not (1450) 1M/12-56	8. 2917 3-6

r e k m i i	
TODRILL. AN IRRIGATIO WITHIN THE S	N WELL IN A CRITICAL AREA STATE OF ARIZONA
SALT RIVER VALLEY WATER USERS' ASSOCIATION, P	HOENIX, ARIZONA
TATE OF ARIZONA	
his is to Certify that I have examined the above num	bered application and do hereby
pprove the same and grant to the applicant a permit to	DRILL the well des
ribed therein subject to the following limitations and co	onditions:
They meren, subject to me the so an lands described	l as follows-
1. water shall be innited to use on tands described	
Legal Subdivisio	<u>)n</u> <u>Acres</u>
LANDS WITHIN ASSOCIATION BOUNDARIE	з.
	Total Acres
No wight is granted by this permit for the irriga	ition of lands which on
September 1	or had not been cultivated withi
x) 3. The well for which permit is granted hereunder ation within one year from the date hereof.	shall be completed and in oper
) 4. Other Limitations:	

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WITNESS my hand and seal of office this22ndday of	h, 19 62 .
	may li
Anthree Download	STATE LAND COMMISSIONER

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STATE LAND DEPARTMENT

OBED M. LASSEN STATE LAND COMMISSIONER PHONE 271-4621 STATĘ OF ARIZONA STATE OFFICE BUILDING PHOENIX 7, ARIZONA



March 22, 1962

SALT RIVER VALLEY WATER USERS' ASSOCIATION c/o J. F. Griswold, Secretary P. O. Box 1980 Phoenix, Arizona

Re:	File No//	-2-3)25 abb
	Application	No. 5 683
	Permit No.	5-666

Gentlemen:

Your application for a permit to drill a well in Twp. 2 North , Rge. 3 East

Section 25 , NW 1/4 NW 1/4 SW 1/4 has been approved. Your permit is enclosed.

Also enclosed are a:

- WELL DRILLING CARD, which should be in the hands of the driller before construction of the well is started;
- REPORT OF WELL DRILLER form, which shall be filled in and sent to us within thirty days after completion of the well;
- REPORT OF EQUIPMENT INSTALLED form, which shall be filled in and sent to us within thirty days after the installation of the pumping equipment.

In the event it is necessary to change the location of the proposed well you should obtain the written permission of the State Land Commissioner before proceeding with the drilling.

Very truly yours,

WATER DIVISION

By: Donald LeMaster

Enclosure: G-301 G-304 G-306 cc: USGS, Tucson

	and the state of the
	Important
	STATE LAND DEPARTMENT Please complete & return. Water Division Phoenix 7, Arizone 17E-72N #198
Location of Well NORTH	File No. (A-2-3)25 cbb
	REPORT OF EQUIPMENT INSTALLED
WEST	EAST OWNER Salt River Valley Water Users' Association
	LOCATION OF WELL:
	<u>NW 1/4 NW 1/SW 1/4, Sec. 25 Twp. 2N Rge. 3E</u>
SOUTH (Indicate Well Location by a circle "o" in the above Section Plat)	Date Well Completed: <u>April, 1962</u> Depth <u>400</u>
1 Wall Test.	
Discharge:	1196 Date Well Tested: 8/1/62
Gal.	Per Min.)
Method of Discharg	e Measurement:Pitot
	(weir, orifice, current meter, etc.)
Static Water Level:	54.6ft. Drawdown5.1ft.
Total Pumping Lift	<u>119.77</u> ft.
2. Equipment Installed	l:
Kind of Pump:	Turbine (turbice centrifugal etc.)
· •	
Kind of Power: (Elec.	Nat. Gas, Etc.)
I HEREBY CERTIFY t knowledge and belief.	hat all the above statements are true to the best of my

Signature J. F. Griswold, Secty. SALT RIVERY VALLEY WATER USERS' ASSOCIATION P. O. Box 1980, Phoenix 1, Arizona Address

Date August 7, , 19 62.

WD Form G-306 10-57 . . .

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	ARIZONA DEPARTMENT OF	NATER F	RESOL	IRCES W	/ELL R	EPOR	۲.				Page	9	•
JN Date: 00/0 1/2000		:	¢	3	ć		Most Red Auth. Iss	ent ued: leeve	đ Đ lịc	Reg Wtr	-tir		
	Registered Full Name & Address	Well Depth Di	ipth Di	se w ameter Le		Ŵ	Lic No	Date	Date	Use s	hed	0 0	RT
1 2.0 3.0 25 B C B 55 - 539841	SOUTHWEST GAS CORP. 0 S 43RD AVF	252 2	252	9	0	0	392	¢-	0/05/1993	z	07	×	z
B/M/P: /eli tyde: EXPLORATION	PHOENIX, AZ 85009									9			
V 2.0 3.0 25 C B B 55 - 607731 B/M/P:	SALT RIVER PROJECT, PO BOX 1980 PHOENIX, AZ 85001	400	00	18	53	,196	0	0)4/21/1962	AB	60		1
Vell Type: NON-EXEMPT A 2.0 3.0 25 C C 55-550237 BIMIP: BIMIP: DIEZOMETER DIEZOMETER DIEZOMETER	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	58	37	4	40	0	175		07/25/1995	Σ	07	×	z
Veli 1ype: Multi IOC ON FILL OWE TELEVILLE A 2.0 3.0 25 C C 55-550241 B/M/P: B/M/P: B/M/P: B/M/P: B/M/P:	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			Σ	07		z
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A 2.0 3.0 25 C C 55 - 55402' B/M/P:	I CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			Σ	04		z
A 2.0 3.0 25 C C 55 - 55402.	3 CIRCLE K STORES INC. 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175		ſ	Σ	01		z
A 2.0 3.0 25 C C C 55 - 58579 Woll Tree: MONITOR	7 CONOCOPHILLIPS COMPANY P 0 BOX 52085 PHOENIX, AZ 85072	09	55	N	45	0	78 0	3/05/2001	04/10/200	⊢	10	×	
A 2.0 3.0 25 C C C 55 - 57896 Cancelled: Y B/M/P: Woll Tune: MONITOR	2 PROFESSIONAL MOBILE CLEANING ATTN SCOTT STEVENS 5501 E CALLE CAMELIA PHOENIX, AZ 8	0 5018	0	o	0	0	2	1/19/2000		⊢	60		
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A 2.0 3.0 25 C C C 55-57896 Cancelled: Y B/M/P: Well Type: MONITOR	0 PROFESSIONAL MOBILE CLEANING ATTN SCOTT STEVENS 5601 E CALLE CAMELIA PHOENIX, AZ 6	0 5018	0	0	0	•	▶	1/19/2000		-	60		1
✓ ✓ ✓ Salt River Project Agricultural Impr. & Power District P O Box 1980 Phoenix AZ 85001

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

RECEIPT KIND ENTRY FILE REFERENCE NO. 55 - 607704 THRU

	ACCOL	INT NO.		INT.			55 - 60	7743
FUND SOURCE	AGENCY	CHAPTER	DIV.	ACCT.	ITEM DESCRIPTION		RATE	\$ AMOUNT
					Filing Fee for Registration of Existin	ng		
			 		Wells		10.00	400.00
					File # Various		HAITER CUESTS CHK NO 55-I TAX TOT GEN.CH	PAYMENT 40 60934 9 10.00 400.00 0.00 L 400.00 IEK 400.00
					Paid Check #060934			
					5-20-82 TOTA	AL (- # 8224 \$	A 13:16- 400.00

рb

Arizona Department of Water Resources Operations Division 500 N. 3rd St. Phoenix, AZ 85004-3903

DWR AR22 - Nov 84									
Date Received:									
Received By :									
AMA :									
Date Routed to AM	A:								

MEASURING DEVICE MALFUNCTION REPORT FORM PART1 - NOTIFICATION

INSTRUCTIONS A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT		
Address: P.O. Box 52025 Phoenix, AZ 8507	72-2025	
Telephone Number: (602) 236-2612	Well Registration Number:	55607748
SRP Coordinate Location: 19.0E-08.1N	SRP Pump Number: 113	
Measuring Device Type: Flow Meter	Malfunctioned on: 5/3/07	
For the reason that: Low mA reading		
Should be back in service: 5/8/07	_	
Signed: The and	Date: <u>5-7-07</u>	

Arizona Department of Water Resources Operations Division 500 N. 3rd St. Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received:
Received By :
АМА :
Date Routed to AMA:

55607748

MEASURING DEVICE MALFUNCTION REPORT FORM PART1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

SRP Coordinate Location: 19.0E-08.1N

Measuring Device Type: Flow Meter

SRP Pump Number: 113 Malfunctioned on: 4/26/2006

Well Registration Number:

For the reason that: no signal

Sten Kfe Lany

5/30/06

19E-8.1N

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE

• 3

PHOENIX, ARIZONA 85004

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h. 1

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE - FILE IN DUPLICATE

ARIZONA DECISTRATION FEE (CHECK ONE) XEMPT WELL (NO CHARGE) ON-EXEMPT WELL - S10.00 IM BX MY 18 MO WATER RESOURCE. Imconstruction no. ts. GO (Check Not			07	
REGISTRATION FEE (CHECK ONE) XEMPT WELL (NO CHARGE) DNEXEMPT WELL - S10.00 WATER WATER Salt River Project Agricultural Improvement and Power District P. O. Box 1980 Phoenix Arizona Solt River Project Agricultural Improvement and Power District P. O. Box 1980 Phoenix Arizona Given Given Arizona Solt River Project Agricultural Improvement and Power District P. O. Box 1980 Phoenix Arizona Given Simeb If the well is located within the SN X SN A. The well is located within the SN X SN A. The well is located within the SN X SN A. The well is located within the SN X SN A. The well is located within the SN X SN A. The well is located within the SN X SN A. The well is located within the SN X SN A. The well is located within the SN X SN <			FOR OFFICE USE O	NLY
REGISTRATION FEE (CHECK ONE) XEMPT WELL (NO CHARGE) DN-ZEMPT WELL - S10.00 DN-ZEMPT WELL - S10.00 Salt River Project Agricultural Improvement and Power District		ARIZONA	60	5748
XEMPT WELL (NO CHARGE) Image: State in the image: State image: State in the image: State in the imag	REGISTRATION FEE (CHECK ONE)	DEPT. OF	GISTRATION NO. 55- 20	cce
32 MY 16 AD The VELL - \$10.0 WATER INTERVIEW OF The Project Agricultural Improvement and Power District P. 0. Box 1980 Phoenix Arizona 85001 Charten Improvement and Power District P. 0. Box 1980 Phoenix Arizona 85001 Control Number under previous groundwater law: Generation Number a. The well is located within the SN ½ SW ½ SW ¼. SW ¼. Section 20 of Township 2N	(EMPT WELL (NO CHARGE)		5-18-82	10:51a
WATE: Image: Control Number Salt River Project Agricultural Improvement and Power District P. 0. Box 1980 P. 0. Box 1980 Phoenix Arizona 85001 (Autres) (City) (Bandor Control Number under previous groundwater law: (Zip) (File Number) 35- (Control Number) (Zip) a. The well is located within the SN ½ SW ½ SW ¼ Section 20, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the Country of Maricopa - b. If in a subdivision: Name of subdivision - - . Lot No. , Address - - The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial) - Irrigation and non-irrigation uses by SRP - - If for irrigation use, number of acres irrigated from well SRP member lands - Owner of land on which well is located. If same as Item 1, check this box IX - (Autres) - - - . Depth of Well 305 feet b. Diameter of casing 18 inches - c. Depth of Well 305 feet <	DN-EXEMPT WELL - \$10.00 🕱	182 MAY 18 AND 21	(DATE)	(TIME)
RESOURCE Modernia Name of Registrant: Salt River Project Agricultural Improvement and Power District P. 0. Box 1920 Phoenix Arizona 85001 Idedress Idedress Idedress Improvement and Power District P. 0. Box 1920 Phoenix Arizona 85001 Idedress Idedre		WATCO	A	·····
Name of Registrant:		RESOURCE	" thoenix	
Salt River Project Agricultural Improvement and Power District P. 0. Box 1980 Phoenix Arizona 85001 (City) (Store) (Zip) (Store) (Zip) File and/or Control Number under previous groundwater law: 35- (Control Number) (Zip) a. The well is located within the SW ¼ SW ¼ SW ¼, Section 20 , of Township 2N N/S, Range 4E E/M, G & SRB & M, in the County of Maricopa b. If in a subdivision: Name of subdivision	Name of Registrant:			
P. O., Box 1980 Phoenix Arizona 85001 (Address) (Giv) (Sinte) (Zip) File and/or Control Number under previous groundwater law: 35- (Centrol Number) (Zip) a. The well is located within the	Salt River Project Agricultur	al Improvement and Po	ower District	
File and/or Control Number under previous groundwater law: 35	P. O. Box 1980	Phoenix (Citu)	Arizona	8500 I
File and/or Control Number under previous groundwater law: iFile Number! 35. (Control Number!) a. The well is located within the	(Add(655)	(City)	(orate)	(210)
If the Number! 35- (Control Number) a. The well is located within the	File and/or Control Number under pro	evious groundwater law:		
a. The well is located within theSW ¼ _SW ¼ _SW ¼, Section _20, of Township2N	(File Number)	35- (Control Number)		
a. The well is located within theSW_XSW_XSW_XSection20			1	
of Township N_S, Range 4E E/W, G & SRB & M, in the County of Maricopa b. If in a subdivision: Name of subdivision	a. The well is located within the	<u>%%%</u> %	¼, Section <u></u>	
County of	of Township <u>2N</u>	<u>N/S</u> , Range <u>4</u> £	<u> </u>	3 & M, in the
b. If in a subdivision: Name of subdivision	County of <u>Maricopa</u>	······································		
Lot No, Address	b. If in a subdivision: Name of sub	division		,
The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial) Irrigation and non-irrigation uses by SRP If for irrigation use, number of acres irrigated from well <u>SRP member lands</u> Owner of land on which well is located. If same as Item 1, check this box IX (Address) (City) (State) (Zip) Well data (If data not available, write N/A) a. Depth of Well305feet b. Diameter of casing18inches c. Depth of casing808gallons per minute. f. Depth to waterI7_static (Jan. 1982)feet below land surface. g. Date well completed <u>June181971</u> . The place(s) of use of water. If same as Item 3, check this box []. XXX, SectionTownshipRange XXX, SectionTownshipRange SRP member lands through distribution system Attach additional sheet if necessary. MAY 17 1982	Lot No, Address		<u> </u>	
(Address) (City) (State) (Zip) Well data (If data not available, write N/A) a. Depth of Well305feet	Owner of land on which well is loca	ted. If same as Item 1,	check this box 🖾	
(Address) (City) (State) (Zip) Well data (If data not available, write N/A) a. Depth of Well				
Well data (If data not available, write N/A) a. Depth of Well	(Address)			
a. Depth of Well		(City)	(State)	(Zip)
 b. Diameter of casing	Well data (If data not available, write	(City)	(State)	(Zip)
 c. Depth of casing	Well data (If data not available, write a. Depth of Well 305	(City) P N/A)	(State) feet	(Zip)
 d. Type of casing <u>steel casing with louvered perforations</u> e. Maximum pump capacity <u>808</u> gallons per minute. f. Depth to water <u>17 static (Jan. 1982)</u> feet below land surface. g. Date well completed <u>June 18 1971</u>. The place(s) of use of water. If same as Item 3, check this box . <u>4</u> <u>4</u>, <u>5ection</u> Township <u>Range</u> <u>5RP member lands through distribution system</u> Attach additional sheet if necessary. <u>MAY 17 1982</u> 	Well data (If data not available, write a. Depth of Well	(City) > N/A) ;	(State) feet inches	(Zip)
e. Maximum pump capacity	Well data (If data not available, write a. Depth of Well 305 b. Diameter of casing 18 c. Depth of casing 305	(City) > N/A) 	(State) feet inches feet	(Zip)
 f. Depth to water <u>17 static (Jan. 1982)</u> feet below land surface. g. Date well completed <u>June 18 1971</u>. The place(s) of use of water. If same as Item 3, check this box . <u>4</u> <u>4</u> <u>4</u>, Section Township Range <u>5RP member 1 ands through distribution system</u> Attach additional sheet if necessary. MAY 17 1982 	Well data (If data not available, write a. Depth of Well	(City) N/A)	(State) _ feet _ inches _ feet rations	(Zip)
g. Date well completed <u>June 18 1971</u> . (Month) (Day) (Year) The place(s) of use of water. If same as Item 3, check this box . <u>4</u> <u>4</u> <u>4</u> , Section <u>Township</u> Range Range <u>Range</u> <u>5RP member lands through distribution system</u> Attach additional sheet if necessary. MAY 17 1982	Well data (If data not available, write a. Depth of Well 305 b. Diameter of casing 18 c. Depth of casing 305 d. Type of casing steel casing e. Maximum pump capacity	(City) P N/A) S I with louvered perfo 808	(State) _ feet _ inches _ feet rations _ gallons per minute.	(Zip)
The place(s) of use of water. If same as Item 3, check this box []. 	Well data (If data not available, write a. Depth of Well 305 b. Diameter of casing 18 c. Depth of casing 305 d. Type of casing steel casing e. Maximum pump capacity	(City) (City) N/A) with louvered perfo 808 (Jan, 1982)	(State) _ feet _ inches _ feet <u>r</u> ations _ gallons per minute. _ feet below land surfac	(Zip)
The place(s) of use of water. If same as Item 3, check this box	Well data (If data not available, write a. Depth of Well 305 b. Diameter of casing 18 c. Depth of casing 305 d. Type of casing 305 e. Maximum pump capacity 17 f. Depth to water 17 g. Date well completed June	(City) (City) N/A) with louvered perfo 808 (Jan. 1982) 18 197	(State) _ feet _ inches _ feet rations _ gallons per minute. _ feet below land surfac	(Zip)
¼ ¼, Section Township Range ¼¼, Section Township Range SRP member lands through distribution system Attach additional sheet if necessary. MAY 17 1982	Well data (If data not available, write a. Depth of Well	(City) (City) N/A) with louvered perfo 808 (Jan. 1982) 18 197 (Day) (Year	(State) _ feet _ inches _ feet rations _ gallons per minute. _ feet below land surfac _ f	(Zip)
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SRP member lands through distribution system Attach additional sheet if necessary. MAY 17 1982	Well data (If data not available, write a. Depth of Well	(City) P N/A) With louvered perfor 808 (Jan. 1982) 18 197 (Day) (Year e as Item 3, check this Township	(State) _ feet _ inches _ feet rations _ gallons per minute. _ feet below land surfac box []. 	(Zip) e.
Attach additional sheet if necessary. MAY 17 1982	Well data (If data not available, write a. Depth of Well	(City) (City) N/A) with louvered perfo 808 (Jan. 1982) 18 197 (Day) (Year e as Item 3, check this Township Township	(State) feet inches feet rations gallons per minute. feet below land surfac feet below land surfac 	(Zip) e.
MAY 17 1982	Well data (If data not available, write a. Depth of Well 305 b. Diameter of casing 18 c. Depth of casing 305 d. Type of casing 305 d. Type of casing 305 e. Maximum pump capacity	(City) (City) N/A) With louvered perfo 808 (Jan. 1982) 18 197 (Day) (Year e as Item 3, check this Township tribution system	(State) _ feet _ inches _ feet _ gallons per minute. _ feet below land surfac _ feet below land surfac box []. 	(Zip) e.
	Well data (If data not available, write a. Depth of Well 305 b. Diameter of casing 18 c. Depth of casing 305 d. Type of casing 305 d. Type of casing 305 e. Maximum pump capacity 17 f. Depth to water 17 g. Date well completed June (Month) The place(s) of use of water. If same % ½ % ½, Section % 12020	(City) P N/A) With louvered perfors (Jan. 1982) (Jan. 1982) 18 197 (Day) (Year Pe as Item 3, check this Township tribution system	(State)	(Zip) e.
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IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in <u>duplicate</u> with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- 2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

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INSTRUCTIONS FOR REGISTRATION QUESTIONS

- The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.

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- 5. If the well is used for irrigation, give the gnumber of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm c_c etc., fill in the appropriate title.
- Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Г ٦ STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES Salt River Project Agricultural Impr. & WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA Power District P O Box 1980 PHOENIX, ARIZONA 85004 Phoenix AZ 85001 RECEIPT L _ KIND FILE REFERENCE NO. 607704 55_-55 - 607743 ACCOUNT NO. INT. ACCT. FUND AGENCY CHAPTER DIV. \$ AMOUNT ITEM DESCRIPTION RATE SOURCE Filing Fee for Registration of Existing 10.00 400.00 Wells MAITER PRYMENT File # Various GUESTS 40 CHK NO 60934 10.00 400 400.00 55-I TAX 0.00 400.00 TOTL 400.00 GEN.CHEK Paid Check #060934 # 8224 A 13:16 \$ TOTAL 400.00 5-20-82 рb 言語になる現れなの語

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Arizona Department of Water Resources Water Management Division P.O. Box 36020, Phoenix, AZ 85067-6020 (602) 771-8627 • (602) 771-8690 fax • www.azwater.gov

Pump Installation Completion Report

- Review instructions prior to completing form in black or blue ink.
- The registered well owner should file this report with the Department within 30 days following installation of pump equipment.

WELL REGISTRATION NUMBER 55-608380

** PLEASE PRINT CLEARLY **

Well Owner	Location of Well							
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL								
Salt River Project	3121 E. McDowoll Rd Phaenix, AZ							
MAILING ADDRESS	TOWNSHIP (NS) RANGE (E/W) SECTION 160 ACRE 40 ACRE 10 ACRE							
P.O. Box 22025-MS165T52	IN SE 2 NE 1 NE 1 NE 1							
Phoenix, A2 85072-2025								
CONTACT PERSON NAME AND TITLE								
Jersy DePonty - Jr. Deanydrologist								
TELEPHONE NUMBER	Manua							
602-236-2181 602-236-2781	in icopa							
DATE PUMP INSTALLED	Pitiess Adaptor							
12-10-12	CHECK ONE (SEE INSTRUCTIONS FOR DEFINITION)							
Pump Type	Was a pitless adaptor installed? 📃 Yes							
CHECK ONE	X No							
	IF YES, DEPTH BELOW GROUND LEVEL THE DEVICE WAS INSTALLED							
Air Lift 📃 Rotary	Feet							
	Power Type							
	Diesel Engine II Natural Gas							
_ Piston	Electric Motor							
	HORSE POWER RATING OF MOTOR							
2000 Gallons Per Minute								
2000 Gallons Per Minute								
2000 Gallons Per Minute								
DATE WELL TESTED								
DATE WELL TESTED CHECK ONE DATE WELL TESTED CHECK ONE STATIC WATER LEVEL (A) Bailer STATIC WATER LEVEL (A) CHECK ONE	- Stopwatch							
DATE WELL TESTED 12-10-12 CHECK ONE Bailer Bailer STATIC WATER LEVEL (A) Bucket – Barre PUMPING WATER LEVEL (B) Current	- Stopwatch Lift Other (nlease specify):							
DATE VELL TESTED CHECK ONE DATE WELL TESTED CHECK ONE STATIC WATER LEVEL (A) Bailer STATIC WATER LEVEL (A) Bucket – Barre PUMPING WATER LEVEL (B) Current IIII Feet Below Land Surface Gauge Gauge	- Stopwatch Lift							
Constraint Constraint Constraint C	- Stopwatch Lift							
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Construct Construct Date well tested 12-10-12 Static water Level (A) Bailer Static water Level (A) Bucket - Barre PUMPING WATER LEVEL (B) Current Image: Drawbown [(B) - (A)] Estimated - Air Gauge Meter Drawbown [(B) - (A)] Meter Orifice Volume Weir - Flume Orifice Duration of PUMP TEST (Minimum 4 Hours) Weir - Flume Meter Other (please sp for FLOWING WELL, If the above statements are true to the best Signature of well owner Meta	HORSE POWER RATING OF MOTOR 200 - Stopwatch Air Line Electric Measuring Line (Sounder) Steel Tape Other (please specify):SYM DEC 2 0 2012 of my knowledge and belief according to A.R.S. § 45-600(B). DATE DATE							
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Run Date: 11/20/2012

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

			Well B	leg No				
Location A 1	0 30 3		55 - 60	18380				
Location A 1	.0 3.0 2		•••					
Registered Name	SALT RIVER PO BOX 1980	PROJECT,		Application/	File ' Issue	Type REGIS Date 05/11/	STERED WELL 1982	
	PHOENIX	AZ 8500	1					
Owner Driller No.	OWNER 298			Well Ty SubBa Waterst	/pe N sin W ned S	ION-EXEMPT VEST SALT F	RIVER VALLEY	
Driller Name	SALT RIVER	PROJECT dua S.n.F.		Registered Water Us	ses IF	RRIGATION		
County	MARICOPA			Registered Well Us	ses V	VATER PRO	DUCTION	
Parcel No.	121-73-106A			Discharge Meth	nod N			
Intended Ca	pacity GPM	0.00		Pov	wer N	NOPOWER		
Well Depth	250.00	c	ase Diam	19.00		Tested Cap	2,760.00	
Pump Cap.	2.760.00	C	ase Depth	219.00		CRT		
Draw Down	0.00	w	ater Level	86.00		Log	X	
			Acres Irrig	0.00		Finish	STEEL-PERF	OHATEDORSLOTTED
Contaminat	tion Site: Y	'ES - WITHIN 1 MILE O	F A WQAR	F SITE			CAGING	
Tulkas bla								
Iride: NC	n a mbai zon							
Comments	Recovery We	ell Permit No. 74-54893	80					
Current Act 10/1/2012	ion 2 755	WELL CONSTRUCTIO	ON COMPLE	ETED				
Action Hist	ory				1			
11/20/201	12 750							
Acti	ion Comment:							
7/31/2012	2 555	DRILLER & OWNER P	ACKETS					
Acti				OARE COMPLETE				
//23/2012	2 607		TH DITO/10					
ACI				3 A WELL				
//10/2014	ion Comment:							
7/19/2011	2 250		DLOGY FOI	REVIEW				
//10/2013 Act	ion Comment.	cap						
1/12/200	5 775	WOARF UPLOAD OF	WELL INV	ENTORY DATA				
Act	tion Comment:	Old WQARF Code = N	IULL					
8/16/200	4 880	CHANGE IN REMEDI	AL ACTION	I SITE CODE				
0/10/200 Act	tion Comment:	Old WQARF Code = 1	JULL					
8/30/200	878	UPDATE LOCATION	DATA FRO	M WQARF				
Act	tion Comment:	Changed by ADWR W New Latitude: 33 27 5 Method: Autonomous Source: ADWR	/QARF Gro 5.645, New (GPS) Posi	up as part of the Cond Longitude: 112 0 55.9 tions, H_Datum: NAD	luit We 995, Pr 1983,	ell Project - O roject Id: EWF V_Datum: , E	ld Latitude: , O 5-2936, Lat/Long Elevation Ft: , M	ld Longitude: , g Measurement easurement
8/22/194	755	WELL CONSTRUCT	ON COMPL	ETED				
Ac	tion Comment:							

Arizona Department of Water Information Management Unit P.O. Box 33589 Phoenix, Ariz (602) 771-8627 • (800) 352-84 www.azwater.gov	er Resources cona 85067-3589 488	Well Driller Report Bur and Well Log							
THIS REPORT MUST BE FILED WIT	HIN 30 DAYS OF	F COMPLETING THE WELL. A (01-03) 2aaa Well REGISTRATION NUMB							
PLEASE PRINT CLEARLY USING BL	ACK OR BLUE I	NK.		DERMIT NUMBER (IE IS	SUED)				
		NOV 1620	12	n/a	,002.0)				
Drilling Firm		ARUZON- Perse							
NAME		DWR LICENSE NUMBER							
SALT RIVER PROJECT d	ba S.R.P.	298							
ADDRESS		TELEPHONE NUMBER			i i i				
BO Box 52025, MS16ST5	2	602-236-5181	<u> </u>						
CITY / STATE / ZIP		FAX 602-231	- 29	187					
PHOENIX, AZ 85072-202	25								
		L ACCULARY ANAL							
EUL NAME OF COMPANY ORGANIZATION OR INDIV	DUAL	WELL LOCATION ADDRESS	(IF ANY)						
		SIZIE M.	Noul	I R J. Phoe	VY AZ				
MAILING ADDRESS	·····	TOWNSHIP RANGE	SECTION	160 ACRE 40 ACRE	10 ACRE				
DO Dov 52025 MS16ST52		(N/S) (E/W)	2	A A	A				
PO B0x 52025, INIS 105 152		1 N 3E	2	1/4 1/2	i 1/4				
CITY / STATE / ZIP CODE		LATITUDE		LONGITUDE					
PHOENIX, AZ 85072-2025		33.27.5	5 5.9 "N	112.0	55.6 W				
		Degrees Minutes	Seconds	Degrees Minutes	s Seconds				
CONTACT PERSON NAME AND TITLE	γ	METHOD OF LATITUDE/LON		ECK ONE)					
TELEPHONE NUMBER	ydrologist_	LAND SURFACE ELEVATION	NAT WELL						
602-236-5181 602 - 2	36-2987			II4O Feet A	bove Sea Level				
WELL NAME (e.g., MW-1, PZ-3, Lot 25 Well, Smith Well,	etc.)	METHOD OF ELEVATION (C	HECK ONE)						
16.9E - 6N			GPS: Sur	vey-Grade					
Line and Sure Line L		NAD-83 🖭 Other (p	olease specil	fy):					
Liner and surface seal		COUNTY	ASSESSO	DR'S PARCEL ID NUMBER	२				
		M	BOOK						
		1 laricopa	<u>) </u>		<u>1064</u>				
					elon Joine				
CHECK ALL THAT APPLY	CHECK ALL THAT APPLY		CHECK O	ONE					
Air Rotary	🖭 Airlift		🛛 🗙 Non	ne					
Bored or Augered	🖭 Bail		🖻 Pac	ked					
🖻 Cable Tool	🖭 Surge Block		🖭 Swe	edged					
🖻 Dual Rotary	🖭 Surge Pump		e We	Ided					
Mud Rotary	Other (please s	specity): None		er (please specily)					
Reverse Circulation	LINET ON & JU	- HUCE SHALL BRITY							
Driven			DATE WF	ELL CONSTRUCTION STA	RTED				
			Aun	115 + 2012					
Comparing Air Percussion / Odex Tubing	Pumn Installed	(proding)	DATE WE	LL CONSTRUCTION CON	MPLETED				
Upper 20 excavated with		rivering	0.7	toher 2012	L				
Vactor truck for surface seal	 ith A R S & 45-506 ar	nd is complete and correc	t to the bes	st of my knowledge a	nd belief.				
SIGNATURE OF QUALIFYING PARTY			DATE	,					
(MCales)			11-1	4-12					
Thomas									

DWR 55-55 (REVISED 03/10/08) 1 of 4

Well I	Driller	Report	and	Well	Log
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WELL REGISTRATION NUMBER 55-608380

DEPTH OF BORING	250	Feet Below Land Surface	DEPTH OF (COMPLETED WELL	219	Feet Below Land Surface

Water Level Information			
STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
86 Feet Below Land Surface	9-12-12		🖬 Valve 🖻 Other:

Borenole								. In	stallen Cas	Ц.»						1. A.
			DEPTH	FROM			MAT	ERIA	L TYPE (T)	PERFORATION TYPE (T)						
SUR	FACE		SURI	ACE						ш		N				
FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)	FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NON	WIRE WRAP	SHUTTER SCREI	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	20	728	0	89	18.625	X				X						
20	250	20	89	209	18.625	X				<u> </u>				X		0.25
			209	219	18.625	X				X		-	-			
		·····										1				
			-			ł										

								ł	istailed Annular Material			
DEPTH	I FROM	ANNULAR MATERIAL TYPE (T)						LTER PACK				
SUR	FACE				ш	8E	NTON	ITE				
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONIT GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	20			X					Installed surface seal			
20	250	X							Liner install only ino	-		
									annular materials			
			ļ									
		ļ										

Well Driller Report and Well Log

WELL REGISTRATION NUME	ER
55 - 608380	

DEPTH	FROM	Description	Check (T) every					
SURF FROM	TO	Describe material, grain size, color, etc.						
(feet)	(feet)		(if known)					
		See original log. Well not deepened.						

Woll Driller Report and Well Log	WELL F	VELL REGISTRATION NUMBER				
55 - 608380						
NAME OF WELL OWNER	COUNTY ASSESSOR'S P	ARCEL ID NUMBER				
Salt Biver Project	BOOK	^{MAP} 73	IOG A			

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.

			W S E
			1" =ft

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location A 1.	0 3.0	2 A A A	Well F 55 - 60	Reg.No 08380	AMA PHOE	NIX AMA
Registered Name	SALT RIVE PO BOX 19	ER PROJECT, 980		F Application/Iss	ile Type REGI ue Date 05/11	STERED WELL /1982
	PHOENIX	AZ	Z 85001			
Owner Driller No. Driller Name Driller Phone County Intended Capa	OWNER 0 MARICOPA acity GPM	0.00		Well Type SubBasin Watershed Registered Water Uses Registered Well Uses Discharge Method Power	NON-EXEMP WEST SALT I SALT RIVER IRRIGATION WATER PROI NONE NO POWER (T RIVER VALLEY DUCTION CODE LISTED
Well Depth Pump Cap. Draw Down Contaminatic	250.00 2,760.00 0.00	0 0 0 YES - WITHIN 1 M	Case Diam Case Depth Water Level Acres Irrig ILE OF A WQARF	20.00 250.00 61.00 0.00 SITE	Tested Cap CRT Log Finish	2,760.00 STEEL - PERFORATED OR SLOTTED CASING
Comments Current Action 7/31/2012 Action	Recovery W n 555 Comment:	/ell Permit No. 74-{ DRILLER & OWN	548930 ER PACKETS MA	ILED		
Action History	967					
Action 7/18/2012	Comment: 250	dgc NOI SENT TO HY				
Action 7/18/2012 Action	Comment: 165 Comment:	cap NOI RECEIVED F cp	OR MODIFYING A	WELL		
1/12/2005 Action	775 Comment:	WQARF UPLOAD Old WQARF Code) of well inven = null	TORY DATA		
8/16/2004 Action 8/30/2002	880 Comment:	CHANGE IN REM Old WQARF Code	EDIAL ACTION SI = NULL			
Action	oro Comment:	Changed by ADWI New Latitude: 33 2 Method: Autonomo Source: ADWR	ON DATA FROM V R WQARF Group a 27 55.645, New Lor Dus (GPS) Position	VQARF as part of the Conduit We agitude: 112 0 55.995, Pro s, H_Datum: NAD 1983, V	ll Project - Old I oject Id: EWF-2 V_Datum: , Elev	Latitude: , Old Longitude: , 936, Lat/Long Measurement vation Ft: , Measurement
8/22/1947 Action	755 Comment:	WELL CONSTRUC	CTION COMPLETE	Ð		

JANICE K. BREWER Governor



SANDRA A. FABRITZ-WHITNEY Director

ARIZONA DEPARTMENT OF WATER RESOURCES

3550 North Central Avenue, Second Floor PHOENIX, ARIZONA 85012-2105 (602) 771-8500

July 27, 2012

Salt River Project PO Box 52025, MS16ST 52 Phoenix, AZ 85072-2025

RE: Notices of Intention to Modify an Existing Non-Exempt Well Registration No. 55-608380 File No: A (01-03) 02AAA

Dear Rightholder:

The Notice of Intention to Modify an Existing Non-Exempt Well inside the Phoenix Active Management Area has been approved. A copy of the Notice is enclosed for your records. The drilling card for the modification of the above referenced well has been forwarded to your well driller.

Within 30 days of completion of the well, the well driller is required to furnish this Department with a complete and accurate log of the well. In addition, the well owner is required to submit the enclosed Completion Report within 30 days of installation of pump equipment.

Pursuant to the provisions of A.R.S. § 45-604, any person withdrawing groundwater from a well is required to use a water measuring device to record rates of withdrawal in order to provide or allow the computation of an annual volume of pumpage from the well. The total volume of pumpage from the well shall be reported on your Annual Water Withdrawal and Use Report for calendar year 200X. Subsequent annual reporting periods shall be from January 1 through December 31.

The Department has issued the authorization to modify this well pursuant to A.R.S. §§ 45-596 and 45-597 of the Groundwater Code. The legal nature of the water withdrawn from the well may be the subject of court action in the future as part of a determination of surface water rights in your area. If there are court proceedings that could affect your well, you will be notified and be given the opportunity to participate.

Under A.R.S. § 45-593, the person to whom a well is registered must notify this Department of any changes in ownership, status or physical characteristics to keep the Well Registry records

current and accurate. For <u>future</u> changes, a Request to Change Well Information form is available online at: <u>www.azwater.gov</u>.

If you have any questions regarding the NOI to Modify, please contact me in the Groundwater Permitting and Wells Section at 602-771-8614.

Sincerely,

This (Cynthia Pogue

Water Resources Specialist

Enclosures

	ALL DRILL OPERATIONS	298	PHOENIX ACTIVE -2025	ast		A CONTRACTOR OF THE PARTY OF TH
ARIZONA DEPARTMENT OF WATER RESOURCES WATER MANAGEMENT DIVISION 3550 N. Central Avenue, Phoenix Arizona 85012	THIS AUTHORIZATION SHALL BE IN THE POSSESSION OF THE DRILLER DURING	WELL REGISTRATION NO: 55-608380 AUTHORIZED DRILLER: SALT RIVER PROJECT dba S.R.P. LICENSE NO:	A NOTICE OF INTENTION TO MODIFY AN EXISTING NON-EXEMPT WELL INSIDE THE I MANAGEMENT AREA HAS BEEN GRANTED TO: WELL OWNER: SALT RIVER PROJECT, PO BOX 52025, MS16ST52, PHOENIX, AZ 85072	The well is located in the: NE ¼ of the NE ¼ of the NE ¼ of Section 2, Township 1 North Range 3 E ^s No. of well(s) in this project: one	THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 26TH DAY OF JULY, 2013	WATER MANAGEMENT DIVISION WATER MANAGEMENT DIVISION THE DRILLER MUST FILE A LOG OF THE WELL WITHIN 30 DAYS OF COMPLETION OF DRILLING

То:	Cindy Pogue, Groundwater Permitting and Wells
FROM:	David Christiana, Permitting and Adjudication Support
DATE:	July 23, 2012
Subject:	Review of Notice of Intent to Modify an Existing Non-Exempt Well in an Active Management Area 55-608380 A(1-3)2AAA Salt River Project

I have reviewed the notice of intent to modify a non-exempt well in the Phoenix AMA for well construction. A well impact analysis or review of potential land subsidence and water quality issues are not required. The well is within the buffer zones of the Motorola 52nd Street CERCLA site and the East Central Phoenix WQARF sites. The applicant plans to install a liner and a 20-foot surface seal.

Well Construction

According to the well modification plan and associated diagrams, the 20-inch well was drilled to 250 feet. The liner will be perforated from 90 to 210 feet. The surface seal will be installed to 20 feet.

I support issuing a drill card to perform the proposed modifications to this well.

c: Scott Miller, Statewide AMA Director



David G. Christiana

From: Sent: To: Subject: Attachments:

David G. Christiana Monday, July 23, 2012 2:52 PM 'Tina LePage (tl1@azdeq.gov)' NOI to Modify a well in M52/ECP buffers SRP 55-608380 55-608380_SiteMap.pdf; 55-608380 NOIM.pdf

Tina,

Attached is a NOI to modify an existing well by installing a liner and a 20 foot surface seal. The well is located in the buffer zones of the M52 CERCLA site and the East Central Phoenix WQARF site. A map is also attached. If you have any questions or concerns regarding this modification, please let me know by 7/30/12 or sooner.

Regards, Dave Christiana

David Christiana, R.G. ARIZONA DEPARTMENT OF WATER RESOURCES Groundwater Permitting and Wells 3550 North Central Avenue Phoenix, Arizona 85012 Direct Tel: 602-771-8548 Fax: 602-771-8690 Email: <u>dgchristiana@azwater.gov</u> 2 Please consider the environment before printing this e-mail

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location A 1.0) 3.0	2 A	АА	Well 55 - 6	Reg.No 08380		
Registered S Name P	SALT RIVE O BOX 198	R PROJEC 80	CT,		Application/Is	File Type REG sue Date 05/11	ISTERED WELL 1/1982
P	HOENIX		AZ 8	85001			
Owner O Driller No. 0 Driller Name Driller Phone County M					Well Type SubBasir Watershed Registered Water Uses Registered Wall Uses	NON-EXEMP WEST SALT SALT RIVER IRRIGATION	
					Discharge Method	NONE	
Intended Capac	ty GP M	0.00			Power	NO POWER	CODE LISTED
Well Depth Pump Cap. Draw Down	250.00 2,760.00 0.00			Case Diam Case Depth Water Level Acres Irrig	20.00 250.00 61.00 0.00	Tested Cap CRT Log Finish	2,760.00 STEEL - PERFORATED OR SLOTTED
Contamination	Site:	ES - WIT	HIN 1 MILE	E OF A WQARF	SITE		CASING
Tribe: Not in	a tribal zor	ne					
Comments Re	ecovery W	ell Permit I	No. 74-548	3930			
Current Action							
7/18/2012 Action C	250 Comment:	NOI SEN ⁻ cap	Γ ΤΟ ΗΥΟΙ	ROLOGY FOR I	REVIEW		
Action History							
7/18/2012 Action C	165 Comment:	NOI RECI cp	EIVED FOI		A WELL		
1/12/2005 Action C	775 comment:	WQARF L Old WQAI	JPLOAD C RF Code =	F WELL INVEN	ITORY DATA		
8/16/2004 Action C	880 comment:	CHANGE Old WQAI	IN REMEE RF Code =	DIAL ACTION S	ITE CODE		
8/30/2002	878	UPDATE			WQARF		
Action C	omment:	Changed I New Latitu Method: A Source: Al	by ADWR 1 Ide: 33 27 Intonomous DWR	WQARF Group 55.645, New Lo s (GPS) Positior	as part of the Conduit W ngitude: 112 0 55.995, P ns, H_Datum: NAD 1983,	ell Project - Old roject Id: EWF-2 , V_Datum: , Ele	Latitude: , Old Longitude: , 2936, Lat/Long Measurement evation Ft: , Measurement
8/22/1947 Action C	755 omment:	WELL CO	NSTRUCT	ION COMPLET	ED		

16.9E-6N (liner install and surface seal) **STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES** WATER MANAGEMENT DIVISION MAIL TO: P.O. BOX 36020, PHOENIX, ARIZONA 85067-6020 3550 North Central Avenue, Phoenix, Arizona 85012 JUL 182012 Phone (602) 771-8500 Fax (602) 771-8690

NOTICE OF INTENTION TO DEEPEN OR MODIFY AN EXISTING NON-EXEMPT WELL OR CONSTRUCT A REPLACEMENT NON-EXEMPT WELL AT APPROXIMATELY THE SAME LOCATION IN AN ACTIVE MANAGEMENT AREA

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS BEFORE COMPLETING.

Section 45-597, Arizona Revised Statutes provides: In an Active Management Area, prior to deepening an existing well or constructing a replacement well at approximately the same location, a person must file a Notice of Intention to Drill. A person must also file a Notice of Intention to Drill prior to modifying a Non-Exempt Well Permit. Pursuant to A.R.S. § 45-596 and A.A.C. R12-15-104, the filing fee for a Notice of Intention to Drill a Non-Exempt Well is \$150.00.

1. Applicant Salt River	Project
Mailing Address P.O. Box	52025 MS165T52
Phoenix A2 City State	85072-2025 Zip Code
Telephone Number (602)	236-5181
E-mail Address: Jersy.D 1A. Public Water System ID #:	ePonty@scpnet.com FOR DEPARTMENT USE ONLY File No. <u>A(1-3)2AAA</u>
2. This Notice is filed by (check	$\begin{array}{c} \text{Registration 55-} & 600000000000000000000000000000000000$
Land Owner Owner of W	ithdrawal Authority Dther By By Other AMA/INA PHX
Note: If Notice is not filed by t submit signed documentation c telephone number, and signatu	ne land owner, the applicant must ontaining land owner's name, address, re consenting to the deepening, replacing, or modifying of the well.
3. Action Requested: Deepen	Replace Modify
4. Principal Use of Water: (please be	specific): Tecientian
5. Other Uses Intended (please be spe	ecific):
6. Claim of Entitlement to Withdraw	Water:
580	irandfathered Groundwater Right Certificate
OR 59	Groundwater Withdrawal Permit
OR 57- 2520	Irrigation District
OR 56	Service Area
OR 74	Recovery Well Permit
7. Construction:	
a. Drilling Firm: Name <u>Sal</u>	River Project DWR License Number 298 ROC License Category
b. Deepening/Replacement/Modi	fication Will Start: <u>August</u> <u>2012</u> Month Year
•. Estimated Fine to Complete.	

d. Attach a Well Construction Supplement, DWR form 55-90, and include a detailed construction diagram as indicated on the <u>form.</u>

8.	Original	Well:
----	----------	-------

a. Location: <u>NE</u> ^{1/4} <u>NE</u> ^{1/4} <u>NE</u> ^{1/4} Section <u>2</u> Township <u>IN</u> _{N/S} Range <u>3 E</u> _{E/W}
b. Position: Latitude <u>33</u> ° <u>27</u> ' <u>55.9</u> "N Longitude <u>112</u> ° <u>0</u> ' <u>55.7</u> "W
c. Position Datum: XNAD 83
d. County: Maricopa
e. Parcel Number: 121 - 73 - 106A
f. Registration Number: 55- <u>608380</u>
g. Registered/Permitted Capacity (see instructions for details): NA Registered GPM OR NA Acre-Feet Per Year
9. Deepening Modification Replacement Well (as applicable):
se seepenings to an out of the
a. Location: <u>NE ¼</u> <u>NE ¼</u> <u>NE ¼</u> Section <u>2</u> Township <u>IN</u> N/S Range <u>3E</u> E/W
b. Position: Latitude <u>33</u> ° <u>27</u> ' <u>55.9</u> "N Longitude <u>112</u> ° <u>0</u> ' <u>55.7</u> "W
c. Position Datum: NAD 83
d. County: Maricopa
e. Parcel Number: 121 - 73 - 106A
f. Distance from Original Well: Feet
g. Design Pump Capacity <u>2000</u> GPM
h. Estimated total annual pumpage: 3226 Acre-Feet Per Year
i. Diameter: 18 Inches (liner diameter)
j. Depth: 220 Feet
k. Type of Casing: HSLA steel
1. Has the well to be replaced been physically abandoned? \Box Yes X No () inscribed been physically abandoned?
m. If no, will it be? [Yes No If Yes when: Surface seal only]
I state that this Notice is filed in compliance with Rules A.A.C. R12-15-809 and is complete and correct to the best of my knowledge and belief, and that I understand the conditions set forth in the general instructions and specific instructions for this application
T ND I I A A A A A A A A A A A A A A A A A
JERSY DEPONTY NERSON HURAN FOR SBY Geomydralogist 7-17-12

Jersy DePo Type or Print Name Applicant's Signature 7 Title Date

Type or Print Name

Land Owner's Signature

Title

Date

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION
3550 North Central Avenue, Phoenix, Arizona 85012
Phone (602) 771-8585 Fax (602) 771-8688

WELL CONSTRUCTION SUPPLEMENT (form DWR 55-90)

Well Registration Number 55-__608380

Well Location: 1.

3.

4.

5.

 $\frac{NE}{10AC}$ ¹/₄ of the <u>NE</u> ¹/₄ of the <u>NE</u> ¹/₄, Sec. <u>2</u>, Township <u>IN</u> Range <u>3E</u>. 2. **Position Location of the Well:** Latitude <u>33° 27 · 55.9"</u> Longitude <u>112 ° 0 · 55.7</u>" • NAD 27
 • Other: ______ Datum: (NAD 83) County Maricopa Date construction to start: <u>August</u> 2012. Time period well will remain in use: 50 years Is pump equipment to be installed? $y \in s$ If so, design pump capacity: <u>2000</u> GPM. 6. 7. Well construction plan: a. Drilling method (mud rotary, hollow-stem auger, etc.) Vactor (surface seal). b. Borehole diameters $\underline{>30}$ inches from $\underline{\bigcirc}$ feet to $\underline{>20}$ feet. 20 inches from _____ feet to 250 feet. c. Casing materials 18-inch steel liner From O to 220, Feet Cement grout seal between 20-inch casing and voctored borehole d. Method of well development (bail, air lift, surge, etc.) pump Will surface or conductor casing extend above grade? yes (minimum 1 ft.)

Include a detailed construction diagram of the proposed well design. The diagram should 8. verify consistency with minimum construction requirements specified in the Department's well construction rules found in Arizona Administrative Code (A.A.C.) R12-15-801 et seq. Specifically, the diagram should include borehole diameters; casing materials and diameters; perforation intervals; the expected water level; depth and thickness of the surface seal; proposed grouting materials; and the length that the surface or conductor casing will extend above grade, or vault details, if specified.

Pursuant to Arizona Revised Statutes (A.R.S.) § 45-594.B, all well construction, replacement, deepening and abandonment operations shall comply with the rules adopted pursuant to this section. Therefore, any existing well that is deepened or modified must be brought into compliance with minimum well construction standards specified above, if not already in compliance.

Proposed materials and method of abandonment if well is to be abandoned after project is 9. completed (Minimum requirements per A.A.C. R12-15-816);

Not applicable

10.	Is the proposed wellsite within 100 feet of hazardous waste facility, storage area tank?YesX_No	of a septic tank sy of hazardous ma	stem, sewage disposa terial, or petroleum s	al area, landfill, torage area or
11.	Is this well to monitor existing contami	nation?Yes	<u>_X_</u> No	
	Potential contamination? Yes	$\mathbf{X}_{\mathbf{N}}$ No lf yes, ple	ase provide explanati	on:
12.	Name of Consulting firm, if any:N	one		
	Address	City	State	Zip
	Contact Person:	Telo	ephone Number:	
13.	Drilling firm <u>Salt River Pr</u>	niect		
	DWR License Number: 298	ROC Lic	ense Category:	
14.	Special construction standards, if any, None	required pursuan	t to A.A.C. R12-15-821	
l (we	e), <u>Jersy DePorty</u> here (print name)	by affirm that all i application is true knowledge and be	nformation provided i and correct to the be elief.	n this st of my/our
Sig	nature of Applicant	7 For SRF	Date 7-17	-12



P. O. Box 52O25 Phoenix, AZ 85072-2025 (602) 236-5900

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JUL 182012

ARIZONA SELECTOR

July 18, 2012

Ms. Stella Murillo Manager - Groundwater Permitting and Wells Section Arizona Department of Water Resources 3550 North Central Avenue Phoenix, AZ 85012

RE: Request for Modification, SRP Well 16.9E-6N (55-608380)

Dear Ms. Murillo:

The Salt River Project (SRP) is planning to modify an existing water supply well located within their service area in the Phoenix Active Management Area (AMA). The well is referenced as SRP Well 16.9E-6N and the legal location is the NE¼ of the NE¼ of the NE¼ of Section 2 in Township 1 North, Range 3 East (also designated as A(1-3)2aaa). The proposed modifications consist of the installation of a 20-foot surface seal to comply with the Arizona Department of Water Resources (ADWR) Minimum Well Construction Standards (R12-15-811) and the installation of an 18-inch diameter steel liner.

The existing well consists of 20-inch diameter steel casing from land surface to 218 feet and 20inch diameter open borehole from 218 to 250 feet with Mills knife perforations from 90 to 212 feet. The existing well pad will be removed and the well will be retrofitted with a 20-foot surface seal and new well pad utilizing a vactor truck. The new well pad will consist of a standard SRP pump pad, an inverted concrete pyramid 12 feet by 12 feet by 8 feet deep. SRP also intends to install an 18-inch diameter steel liner inside the original 20-inch diameter casing to protect the pump equipment and improve structural stability. The steel liner will be installed to a depth of 220 feet and include mill slot perforations from 90 to 210 feet to mimic the original screened interval. No modifications to the existing well casing will occur. A diagram illustrating the proposed modifications is attached. ADWR Form 55-41 (Revised 3/12), Form 55-90 (Rev 9/07), and a construction diagram showing the proposed well modifications are attached along with a check for \$150 for applicable fees. If there are any questions regarding this application or if additional information is required, please e-mail me at Jersy.DePonty@srpnet.com or contact Bob Pane at 602-236-2511.

Sincerely,

Jerry

Jersy DePonty, R.G. Senior Geohydrologist SRP Groundwater Resources and Geohydrology Department

Attachments:

- Notice of Intention to Deepen or Modify an Existing Non-Exempt Well or Construct a Replacement Non-Exempt Well at Approximately the Same Location in an Active Management Area (DWR 55-41)
- Well Construction Supplement (DWR 55-90)
- Filing fee of \$150



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Arizona Department of Water Resources

3550 N Central Ave. Phoenix AZ 85012

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			than a of this			155	
		on	drill a well other section (A)(1)(h)			Check #	
		Descripti	Notice of intention to well described in sul Section				2012
	tury Project 5 85072-2025	AOBJ	4439-TT		HECK	50.00	Date: 07/18/2
mer:	K FREEE T RIVER BOX 5202 ENIX, AZ	Index	15245		type: CF	aid: \$1	Received I
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Notes: FROM TTA.

No refund without valid receipt



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QUICK LINKS			Home Contacts *Parce	el Search:	60
Advanced Search	Options	k -	Market Overview *Residen	tial Similar Proper	ty Search
No Parcel Nun	nber? Use Advanc	ed Search Options.	*(A parcel number is n	eeded to use thes	e Features)
New Search Print Property Informal Pa Property Ac Property Descr Section Township Associated	tion rcel #: 121-73-106-A MCR #: ddress: 3121 E MCDOWELL PHOENIX 85008 PT N2 NE4 NE4 BEG PARALLEL WITH S R CANAL TH N 47D 38 254.83' TO POB EX 1 Range: 2 1N 3E Parcel:	RD AT PT 741.43' W OF N /W LN APPROPRIATOR '43" W ALONG SD CEN N 33' RD .16 AC	E COR SEC TH S 133.57' TH S 47D 38' 43" E S CANAL 190.90' TH S 93.47' TO CEN LN GRAND I LN TO ITS INTERSEC WITH N LN SEC TH E	Subdivision Name: Lot #: School Dist: CREIGHTO Local PHOENIX Jurisdiction: Tax District FAQs	<u>View GIS Maps</u>
Owner Informatio	OM Owner: S R In Care Of: Mailing Address: PO I PHC Deed #: No 0 Deed Date:	P A I & P D 30X 1980 ENIX AZ 85001 USA Jfficial Document		<u>Vie</u> Sa Sales Mor	<u>w Tax Information</u> les Price: n/a hth/Year: n/a
Characteristics Major Property Chai Square Feet of Living Spi Lot Square Footage: Covered Parking: Construction Year: Other Improvement Number of Patios: Patio Type: Exterior Walls: Roof Type: Additional Compo Valuatio New Search Helpful I recorder glossary for	racteristics ace: t Characteristics nent Information (<u>n Character</u> nformation:	6,970 for this parcel	Improvement Quality Grade: Market Area / Neighborhood: Unique Location Characteristics: Pool Square Footage: Bath Fixtures: Cooling: Heating: Physical Condition:) <u>Commercial Property Overview</u>		22/009 None
Maricopa Home	Legal Information	Privacy/Securi	ty Policies	©2008 Maricopa Cour	ity
alandar (1997) - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 19	Maricopa C	County Assessor	301 W. Jefferson St. Phoenix, AZ 850	03	

602-506-3406

Arizona Department of Water Resources Operations Division 500 N. 3rd St. Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received:
Received By :
AMA :
Date Routed to AMA:

MEASURING DEVICE MALFUNCTION REPORT FORM PART1 - NOTIFICATION

INSTRUCTIONS A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT	
Address: P.O. Box 52025 Phoenix, AZ 85072	2-2025
Telephone Number: (602) 236-2612	Well Registration Number: 55608380
SRP Coordinate Location: 16.9E-06.0N	SRP Pump Number: 048
Measuring Device Type: Flow Meter	Malfunctioned on: 7/17/07
For the reason that: Recalibrate old meter	
Should be back in service: 7/17/07	
Signed: Defer Conto	Date: 7-18-07



Arizona Department of Water Resources Operations Division 500 N. 3rd St. Phoenix, AZ 85004-3903
 DWR AR22 - Nov 84

 Date Received:

 Received By

 AMA

 Date Routed to AMA:

55608380

MEASURING DEVICE MALFUNCTION REPORT FORM PART1 - NOTIFICATION

INSTRUCTIONS

Malfunctioned on:

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Onerator	SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

SRP Coordinate Location: 16.9E-06.0N

Measuring Device Type: Flow Meter

For the reason that: Wrong prop size

Should be back in service: 12/18/06

Signed: Jafor Combo

Date: 12/21/06

Well Registration Number:

SRP Pump Number: 048

12/18/06 -

16.9E -6N

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE

ŝ,

*

PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE - FILE IN DUPLICATE

			07
	ARIZONA	FOR OFFICE L	ISE ONLY
REGISTRATION EEE (CHECK ONE)	DEPT OF	REGISTRATION NO. 55-60	8380
HEBISTIATION TEL (CHECK ONE)		TILE NO. A(1-3)20	144
EXEMPT WELL (NO CHARGE)	82 MAY 11 A3 2	7_LED 5/11/82	AT 3: 27
VON-EXEMPT WELL — \$10.00 □X	MATCH	NA -	(11012)
	RESOURCES	MA Duoration	
Name of Registrant:	L	PHDENIK	I
Salt River Project Agricultu	ral Improvement and	l Power District	
P. O. Box 1980	Phoenix	Arizon	a 85001
(Address)	(City)	(State)	(Zip)
File and/or Control Number under pre	evious groundwater law	:	
A01003002AAAGS1	35- None		
(File Number)	(Control Number)		
a. The well is located within the	<u>NE 1/4 NE 1/4</u>	<u>NE</u> ¼, Section <u>2</u>	······································
of Township <u>1N</u>	<u>N/S</u> , Range <u>3</u> 1	<u> </u>	SRB & M, in the
County of <u>Maricopa</u>		_•	
b. If in a subdivision: Name of sub	division	·	
Lot No, Address		·	·
If for irrigation use, number of acres	irrigated from well <u>S</u>	<u>RP member la</u> nds	
If for irrigation use, number of acres Owner of land on which well is locat	irrigated from well <u>S</u> ed. If same as Item 1	RP member lands , check this box □	
If for irrigation use, number of acres Owner of land on which well is locat Salt_River_Project_Agricult	irrigated from well <u>S</u> ed. If same as Item 1 <u>ural Improvement an</u>	RP member lands , check this box □ d Power District a	s agent for U.S. Go
If for irrigation use, number of acres Owner of land on which well is locat Salt River Project Agricult P. O. Box 1980	irrigated from well <u>S</u> ed. If same as Item 1 <u>ural Improvement an</u> <u>Phoenix</u> (Sim)	RP member lands , check this box d Power District a: Arizon (State)	s agent for U.S. Go
If for irrigation use, number of acres Owner of land on which well is locat Salt River Project Agricult P. O. Box 1980 (Address)	irrigated from well <u>S</u> ed. If same as Item 1 <u>ural Improvement an</u> <u>Phoenix</u> (City)	RP member lands , check this box d Power District as Arizou (State)	s agent for U.S. Go 1a 85001 (Zip)
If for irrigation use, number of acres Owner of land on which well is locat <u>Salt River Project Agricult</u> <u>P. O. Box 1980</u> (Address) Well data (If data not available, write	irrigated from well <u>S</u> red. If same as Item 1 <u>ural Improvement an</u> <u>Phoenix</u> (City)	RP member lands , check this box d Power District at Arizon (State)	s agent for U.S. Go 1a 85001 (Zip)
If for irrigation use, number of acres Owner of land on which well is locat <u>Salt River Project Agricult</u> <u>P. 0. Box 1980</u> (Address) Well data (If data not available, write a. Depth of Well2	irrigated from well <u>S</u> ed. If same as Item 1 <u>ural Improvement an</u> <u>Phoenix</u> (City) N/A) 50	RP member lands , check this box d Power District as Arizon (State) feet	s agent for U.S. Go na 85001 (Zip)
If for irrigation use, number of acres Owner of land on which well is locat <u>Salt River Project Agricult</u> <u>P. 0. Box 1980</u> (Address) Well data (If data not available, write a. Depth of Well2 b. Diameter of casing	irrigated from well <u>S</u> ed. If same as Item 1 <u>ural Improvement an</u> <u>Phoenix</u> (City) N/A) 50	RP member lands , check this box d Power District a: Arizon (State) feet inches	s agent for U.S. Go na 85001 (Zip)
If for irrigation use, number of acres Owner of land on which well is locat <u>Salt River Project Agricult</u> <u>P. 0. Box 1980</u> (Address) Well data (If data not available, write a. Depth of Well <u>2</u> b. Diameter of casing <u>2</u>	irrigated from well <u>S</u> ed. If same as Item 1 <u>ural Improvement an</u> <u>Phoenix</u> (City) N/A) 50 20 50	RP member lands , check this box □ <u>d Power District a</u> <u>Arizon</u> (State) feet feet feet	s agent for U.S. Go na 85001 (Zip)
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INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in <u>duplicate</u> with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well. .85 $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

V 15 13 1 1

- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

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Salt River Project Agricultural Improvement and Power District P O Box 1980 Phoenix, Arizona 85001

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

RECEIPT

KIND	FILE REFERENCE NO.
55	608356
	
55	608395

	ACCOL	INT NO.		INT		1	55 60	08395
FUND SOURCE	AGENCY	CHAPTER	DIV.	ACCT.	ITEM DESCRIPTION		RATE	\$ AMOUNT
					Filing Fee for Registration of		10.00	400.00
					Existing Wells		HAITER	PAYMENT
							GUESTS CHK NO	40 59925
· .					File No A(2-1)17 ddd		55-1 Tax	400.00
					A(1-4)19 acc A(2-1)28 aaa		GEN.CH	L. 400.00 EK 400.00
					$\begin{array}{c} A(2-1)15 \text{ cbb} \\ A(2-1)9 \text{ ddd} \\ Warrious \end{array}$			45.44
							# 8443	3 H 15:14
					May 25, 1982	TOTAL		400.00

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17E-8N

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE PHOENIX, ARIZONA 85004

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REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE -- FILE IN DUPLICATE

					· .			<u> </u>
				[FOR OFFIC	E USE OI	NLY	
DEGISTRATION EEE (CHECK ONE)		ARIZO	NA NS	REGISTRAT	ION NO, 55-	6084	31	
REGISTRATION FEE (LRECK UNE)		ULF 1. 4	3.	FILE NO.	4(2-3)=	<u>2566</u>	5	
EXEMPT WELL (NO CHARGE)	82	NAY 11	A 3 :27	FILED 5	11182	<u>3</u> ;	<u>בר</u>	ME)
NON-EXEMPT WELL - \$10.00					(BRIE)			
		WATE	 	AMA DUL		·		
Name of Registrant:		RESUUR	Cib	<u>PH0</u>	ENIX			
Salt River Project Agricult	ural I	mproveme	nt and	l Power Di	strict			
P. O. Box 1980			Phoen	ix	Arizo	na		85001
(Address)			(City)		(State)		_	(Zip)
File and/or Control Number under	previou	s ground [,]	water la	w:				
A02003025BBBGS1	-	35-	None					
(File Number)		(Control Nu	ımber)					
a. The well is located within the	NW	_¼ _N	<u>1</u> 4	<u>NW</u> ¼, 9	Section	25		
of Township <u>2N</u>	N/S	<u>5</u> , Range	<u> </u>		<u> </u>	& SR	3&	M, in th
County of <u>Maricopa</u>				•				
b. If in a subdivision: Name of s	ubdivisi	on						
Lot No. , Address								
Irrigation and non-irrigati	on use es irriga	s by SR ated from	P	SRP mem	ber_lands			
Irrigation and non-irrigati	on use on irriga cated, l	s by SR ated fron If same a	n well _	SRP mem 1, check 1	ber_lands			
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- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres, irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.
| | 55-6 | 084] | 31 | LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA |
|----------------------------|------------------------------|--|------------------|---|
| | REPORT OF V | VELL DRILL | ER
PLEAS | IMPORTANT
E COMPLETE & RETURN |
| This report should be | e prepared by the driller is | n all detail and filed ' | with the State ; | Land Commissioner |
| following completion of t | he well. | | | |
| | | - | | » |
| 1. OWNER | P. O. BOX 1980 - PI | NATER USERS!ASSO
Name
HOENTX ARTZONA | 85001 | |
| 2. Lesses or Operator | Roscon Tross CO | Address
Name
To Deen | i An | |
| 3. DRILLER Jam | es P. Lais | Address Name | 1.20 | ······ |
| 4. Location of well: Twp | 2 Muthage 3 East se | Addresse
ction 25 | N.W x | NW XNW 14 |
| 5. Intention to Drill File | No | Permit No | S-759 | |
| | DESCRIPTIO | ON OF WELL | | |
| 6. Total depth of hole | 250 | t. | | |

7. Type of casing 5/16 plate 9. Method of sealing at reduction points 10. Perforated from No to L.S.S. from to to to to to to to 18. Method of construction Bullad drilled, dug, driven, bored, jetted, etc. 14. Date started 7/23/64 Уеаг Dav 15. Date completed 8/10/ 4 Month Year

17. Describe point from which depth measurements were made, and give sea-level elevation if available..... 13. If flowing well, state method of flow regulation.....

19. REMARKS	DO NOT WRITE IN THIS SPACE OFFICE RECORD
	Received S-18-64 by K
	Filed 8 - 19 - 64 by K
	File No. A(2-3)25 bbb

(Well Log to Appear on Reverse Side)

WD FORM G-301 REV. 4-27-53

LOG OF WELL

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Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

0 7 Sandy Clay 7 30 Clarbia 30 125 sandy clay & growel 125 215 Cemented sand & grovel 15 - Tooustain formation -	
7 30 Clackie 30 125 sandy clay & growel. 125 215 Compating sand & grovel. 315 - Inountain formation .	
30 125 sandy elay & growel. 125 215 Compated sand & growel. 515 - Tooustain formation .	
125 J.15 Cemented sand + grovel	
<u>115 - Josephin formation (</u>	
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	<u> </u>
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I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

ALL STOR	Driller James P. Jacot. Name Name Name Name Name Name Name Name	ng,
A CONTRACTOR	LELIS6	
	ALLISTICS ALLISTICS	Driller James P. Jawi Name Name Name Name Name Name Name Name

X Dme . 5-776	A(1-3)25-566 5-759	
Application No. S-776	File No. A(2-3)25 bbb Permit No.	S-759
, II · <u></u>	6-24-64.	
	FiledJune 24, 1964	
/ A 1:	- us were that the shows blocks)	
(Appiica	ant must not illi in the above blanks)	

This application shall be submitted to the State Land Department, Water Division, Phoenix, Arizona, in accordance with the provisions of Article 7, Chapter 1, Title 45, Arizona Revised Statutes, and the rules and regulations of the State Land Department.

Applications must be accompanied by fees made payable to the STATE LAND 0K0-24-64 FCR **DEPARTMENT** as follows:

Application Fee ----- \$3.00 Permit Fee - - - - \$5,00

APPLICATION FOR A PERMIT

() TO DRILL () TO DEEPEN (x) TO REPLACE)

AN IRRIGATION WELL IN A CRITICAL AREA WITHIN THE STATE OF ARIZONA

K(We), SALT RIVER VALLEY WATER USERS' ASSOCIATION (Owners Name)

P. O. Box 1980, Phoenix _, County of _____Maricopa of ___ (Post Office Address)

State of _____ Arizona _____, do hereby make application for a permit to

() Drill new well, () Deepen or (X) Replace the following described well in the

Salt River Valley Critical Area.

1. Location and description of proposed well:

Location of Proposed Well



2. Location and description of existing well:

Twp. 2N_Rge. 3E Sec. 25; NW 1/4 NW 1/4 NW 1/4 (10Ac. subdiv.) Dept_205_ft, Diameter____12___in, Date drilled _____ November, 1920 Driving Unit ____Electric H.P. Rating of Motor _____10__ 427 Discharge when Drilled____ (g.p.m.) 337 Present Discharge __ (g.p.m.) 50.1 Static Water Level __ft. (below ground surface) -901 Depthof Pump Setting

Pumping Lift _____

65.1

ft.

17.0E-08.0N Location of Existing Well



(Indicate location of well)

Proposed Withdrawal <u>1010</u> (Ac.ft. per year)

Dept 300 ft. Type of casing 18" plate pipe

Name and Address of Driller:

Roscoe Moss Company

- Los Angeles, California

Reason new well required supplement water supply Land to be irrigated: Land within Association boundaries. Twp,					. <u> </u>		
Reeson new well required					**************************************		
Accessing the wein requires Image:	2	Paacan naw well	required	S	upplement water	supply	
. Land to be irrigated: Land within Association boundaries. TwpRgeSec	` •	Neason new weit	. l'equired	·			
Twp,Rge,Sec	4.	Land to be irrig	ated: I	and within	Association bou	ndaries.	
(Legal Subdivision Description) (Acres) Twp		Twp,	Rge.	See	°•		
(Legal Subdivision Description) (Acres) Twp Rge Sec		± • -		_			
Twp. Rge. Sec. (Legal Subdivision Description) (Acres) Above described land is now irrigated as follows: Project canals & wells. Above described land is now irrigated as follows: Project canals & wells. Above described land is now irrigated as follows: Project canals & wells. Above described land is now irrigated as follows: Project canals & wells. All lands within Project under cultivation prior to 1948. Image: Sec. All lands within Project under cultivation prior to 1948. Image: Sec. Coundwater Code of 1948, and the Permittee will be bound by the provision of such law, 'and the provisions of the permit issued herefor. CERTIFICATE CERTIFICATE B. K(We), SALT RIVER VALEY VATER USERS' ASSOCIATION the applicant named in the above and foregoing application, do hereby cert under the penalty of perjury, that the information contained and stateme therein made are to the best of my knowledge and belief true, correct a complete. DATED THIS 19th day of June , 19 GM Salt River Project (Owner or his authorized agent) P. O. Box 1980, Phoenix, Arizona 85001 IPost Office Address) RY A. L. Monette, Secretary RY A. L. Monette, Secretary A. L. Monette, Secretary		(Legal Si	ubdivisior	Descripti	ion)	(Acr	es)
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WD FORM No. G-303-1M/12-56

STATE OF ARIZONA STATE LAND DEPARTMENT STATE OFFICE BUILDING-PHOENIX, ARIZONA

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•		IMPORTANT
		DIDASE COMPLETE & DEFINION
	STATE LAND Water Phoenin	DEPARTMENT Division $17E - 08,0$ N
Loc	cation of Well	
		File No. <u>A(2-3)25 DDD</u>
		REPORT OF EQUIPMENT INSTALLED
WE	EAST OWNER_	Salt River Valley Water Users' Association
		LOCATION OF WELL:
	^{1/4} N	<u>w ¹/4 NW ¹/4</u> , Sec. <u>25 Twp. 2N Rge. <u>3E</u></u>
(Ind	SOUTH ndicate Well Location Date We	Il Completed: Sept. 1964 Depth 250'
by	a circle "o" in the	· · · · ·
200	ove Section 1 lat	
1.	Well Test:	
-•		Data Wall Tostad, 10/30/64
	(Gal. Per Min.)	Date well rested:
	Method of Discharge Measurement:	Pitot
		(weir, orifice, current meter, etc.)
	Static Water Level: 51.0 ft. D	rawdown <u>34.6</u> ft.
	Total Pumping Lift 85.6 ft.	
-		
2.	Equipment Installed:	
	Kind of Pump: <u>Turbine</u>	rbian contrifugal atc.)
	Kind of Power: <u>(5 Electric</u> H. (Elec Nat Gas Etc.)	P. Rating of Motor HP
I H kno	HEREBY CERTIFY that all the above lowledge and belief.	statements are true to the best of my
	Sł	ALT RIVER VALLEY WATER USERS' ASSOCIATION
		at monette
	· · · ·	Signature A. L. Mon ette, Secretary

P. O. Box 1980, Phoenix, Arizona 85001 Address

Rec'al 12+3-64

WD Form G-306 10-57









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SALT RIVER PROJECT P. O. BOX 1980 PHOENIX 1. ARIZONA

" a.l

VICTOR I. CORBELL, PRESIDENT FLOYD N. SMITH, VICE-PRESIDENT

> A. L. MONETTE, SECRETARY L. H. DWERLKOTTE, TREASURER

June 23, 1964



τ.

State Land Department Water Division Phoenix, Arizona 85007

Attention: Mr. F. C. Ryan

Gentlemen:

Enclosed is our check for \$24.00 for the filing and permit fees to cover applications for three wells, as specified on your Form No. G-303-IM-12-56.

Very truly yours,

SALT RIVER VALLEY WATER USERS' ASSOCIATION

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H. J./Roth Assistant Secretary Association

HJR:mb Enclosure

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PERMIT

TO....DRILL (Replace) AN IRRIGATION WELL IN A CRITICAL AREA WITHIN THE STATE OF ARIZONA

SALT RIVER VALLEY WATER USERS' ASSOCIATION - P. O. Box 1980 - Phoenix, Arizona

STATE OF ARIZONA County of MARICOPA

This is to Certify that I have examined the above numbered application and do hereby approve the same and grant to the applicant a permit to <u>DRILL (Replace)</u> the well described therein, subject to the following limitations and conditions:

1. Water shall be limited to use on lands described as follows:

Legal Subdivision Acres

ON LANDS WITHIN THE ASSOCIATION'S BOUNDARIES

Total Acres

() 2. No right is granted by this permit for the irrigation of lands which on.....

<u>September 1</u>, 19<u>51</u>, were not irrigated, or had not been cultivated within five years prior thereto.

(x) 3. The well for which permit is granted hereunder shall be completed and in operation within one year from the date hereof.

() 4. Other Limitations:

trumproper to the sector sector this 24th de	ur of June 1964
WITNESS my hand and seal of office this 24th de	ay of
WITNESS my hand and seal of office this	y of 19 64.
WITNESS my hand and seal of office this 24th de	June 19.64.
WITNESS my hand and seal of office this 24th de	June 19 64. Forcis C. Duncan
WITNESS my hand and seal of office this 24th de	June 19.64. Louis C. Diencen
WITNESS my hand and seal of office this 24th de	beputy BTATE LAND COMMISSIONER
WITNESS my hand and seal of office this24thds - S E A L Expires: 6-24-65	By of JUDE 19.64. Jours ODilnely Deputy BTATE LAND COMMISSIONER
WITNESS my hand and seal of office this24thde - S E A L Expires: 6-24-65	Ay of JUDG 19.64. Focus C. Duncan Deputy Brate Land Commissioner
WITNESS my hand and seal of office this24thds S E A L Expires: 6-24-65	By of JUDO 19.64. Jouis C. Dilmean Deputy STATE LAND COMMISSIONER
WITNESS my hand and seal of office this24thds SEAL Expires: 6-24-65	By of JUDE 19.64. Source Dilncen Deputy BTATE LAND COMMISSIONER

OBED M. LASSEN STATE LAND COMMISSIONER PHONE 271-4621

STATE OF ARIZONA STATE OFFICE BUILDING PHOENIX 7, ARIZONA

STATE LAND DEPARTMENT



R

Salt River Valley Water Users' Association \$#. J. Roth, Assistant Secretary P. O. Box 1980 Phoenix, Arizona 85001

e:	File No. A(2-3)	25 bbb
	Application No.	S-776
	Permit No.	S=759

Gentlemen:

Your application for a permit to drill a well in Twp. 2 North , Rge. 3 East

Section 25 , NW 1/4 NW 1/4 has been approved. Your permitis enclosed.

Also enclosed are a:

- WELL DRILLING CARD, which should be in the hands of the driller before construction of the well is started;
- REPORT OF WELL DRILLER form, which shall be filled in and sent to us within thirty days after completion of the well;
- REPORT OF EQUIPMENT INSTALLED form, which shall be filled in and sent to us within thirty days after the installation of the pumping equipment.

In the event it is necessary to change the location of the proposed well you should obtain the written permission of the State Land Commissioner before proceeding with the drilling.

Very truly yours,

WATER DIVISION

By: F. C. Ryan, Supervisor

kh

Enclosure: G-301 G-304 G-306 cc: USGS, Tucson 7

****	•
ORM W-2 10-45 JAHN-TYLER	
	STATE OF ARIZONA
REGISTRATIO	ON OF WELL
legistration of well existing as of Oct. 3, 1945 is hereby made and filed with III No. 3, Seventeenth Legislature, First Special Session 1945.	h the State Land Commissioner as required by Saction 5, Chapter 12, Sanate
1. Owner_ SALT RIVER VALLEY WATER USERS' ASSO	CIATION
Phoenix, Arizona	Namo
	Address
2. Lessee or Operator	Name
	Address
3. Driller E. N. BROWN DRILLING COMPANY	Man
Phoenix, Arizona	
4 Location of well: Two $2N$ Rose $3E$ Sector	Address no 2.5 NW 14 NW 14 NW 14
175-8N	10-acre subdivision
5. Total depth of hole_205ft.	N VE WELL
6. Type of casingStorepipe	
7. Diameter and length of casing 12 in. fromtoto	in, fromtoin, fromto
8. Method of sealing at reduction points	
9. Perforeted from <u>40 to 150</u> from to	, fromto, fromto
0. Size of cuts 1/2 x 4" holes	Number cuts per foot. 8 holes par foot
I. if screen was installed: Lengthft. Diamin. Type_	
2. Method of construction drilled	defined along descend to be also
2. Method of construction <u>drilled</u> c 3. Date completed <u>December 10, 1920</u>	drilled, dug, driven, bored, jetted, etc. Deepened
2. Method of construction <u>dr111ed</u> c 3. Date completed <u>December 10, 1920</u> Month Year 4. Depth to water when drilled <u>ft</u> .	drillad, dug, driven, bored, jetted, etc. Deepened Month Yeer
2. Method of construction dr11led c 3. Date completed Dacember 10, 1920 c 4. Depth to water when drilled ft. ft. 16 flowing well, so state. 5. Present depth to water 21.0 ft.	drilled, dug, driven, bored, jetted, etc. Osepened Month Year Date of measurement <u>December 20, 1945</u>
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled <u>ft.</u> 1f flowing well, so state. 5. Present depth to water <u>ft.</u> 1f flowing well, so state. A. Describe point from which depth measurements were made, and give seater.	drillod, dug, driven, bored, jotted, etc. Doepened Mostb Year Date of measurement <u>December 20, 1945</u> Jevel elevation if available_ <u>pumphouse floor == 1,186.5'</u>
2. Method of construction dr111ed 3. Date completed December 10, 1920 4. Depth to water when drilled ft. 16 flowing welk, so state. ft. 5. Present depth to water 21.0 ft. 6. Describe point from which depth measurements were made, and give sea- ft.	drillad, dug, driven, bored, jetted, etc. Deepened Month Year Date of massurement December 20, 1945 -level elevation if available pumphouse floor == 1,186,5'
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled <u>ff</u> . 5. Present depth to water <u>21.0</u> 6. Describe point from which depth measurements were made, and give seater 7. If flowing well, state method of flow regulation.	drillad, dug, driven, bored, jotted, etc. Doepened Mostb Year Date of measurement <u>Dacambar 20, 1945</u> -level elevation if available_ <u>pumphouse floor == 1,186,5'</u>
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled ft. 16 flowing well, so state. ft. 5. Present depth to water ft. 16 flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea 7. If flowing well, state method of flow regulation DISCHARG	drillad, dug, driven, bored, jetted, etc. Deepened Date of measurement <u>Decemb ar 20, 1945</u> Jevel elevation if available_ <u>pumphouse floor == 1,186.5'</u> GE DATA
2. Method of construction dr111ed 3. Date completed Dacember 10, 1920 Month Year 4. Depth to water when drilled ft. 16 flowing well, so state. ft. 5. Present depth to water ft. 1f flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give seater.	drillad, dug, driven, bored, jetted, etc. DeepenedMooth Year Date of measurementDacamb ar 20, 1945 -level elsevation if availablepumphouse floor == 1,186.5' GE DATA per sec. or miner's inches.
2. Method of construction <u>dr11led</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled ft. 16 flowing well, so state. ft. 5. Present depth to water ft. 17 flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- 7. If flowing well, state method of flow regulation? 8. Well discharge <u>427 g.p.m.</u> 9. Mothod of discharge measurement	drillad, dug, driven, bored, jotted, etc. DeepenedMonth Year Date of measurement <u>December 20, 1945</u> Jevel elevation if available <u>pumphouse floor == 1,186.5'</u> GE DATA per sec. or miner's inches. arifice, current meter, etc.
2. Method of construction dr111ed 3. Date completed December 10, 1920 Month Year 4. Depth to water when driled	drillad, dug, driven, bored, jetted, etc. DeepenedMooth Year Date of measurementDecember 20, 1945 -level elsevation if availablepumphouse floor == 1,186,5' GE DATA per sec. or miner's Inches. arifice, current meter, etc.
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drifted	drillad, dug, driven, bored, jetted, etc. DeepenedMonth Year Date of measurement <u>December 20, 1945</u> -level elevation if available_ <u>pumphouse floor == 1,186.5'</u> GE DATA per sec. or miner's Inches. arifice, current meter, etc. 99hrs_ 1945_623hrshrs.
2. Method of construction <u>dr11led</u> 3. Date completed <u>Month</u> Year <u>Month</u> 4. Depth to water when drilled ft. 1f flowing well, so state. ft. 5. Present depth to water ft. 1f flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- 7. If flowing well, state method of flow regulation. B. Well discharge <u>427 g.p.m.</u> B. Well discharge measurement. weir. gal. per min. or cu. ft. 9. Mothod of discharge measurement. weir. ct. <u>Cowdown</u> <u>65.86</u> ft. ft. Purpose of use	drillad, dug, driven, bored, jetted, etc. DeepenedMooth Year Date of measurementDecember 20, 1945 -level elsevation if availablepumphouse floor == 1,186.5' GE DATA per sec. or miner's Inches. arifice, current meter, etc. 99hrs. 1945_623hrs.
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled	drilled, dug, driven, bored, jetted, etc. Deepened Date of measurementDecember 20, 1945 level elevation if available level elevation if available Dete DATA per sec. or miner's inches. orifice, current meter, etc. 99 _ e.f. orhrs_ 1945_623 _ e.f. orhrs. Legel subdivision
2. Method of construction <u>dr111ed</u> 3. Date completed <u>Month</u> Year <u>Month</u> 4. Depth to water when drilled ft. 1f flowing well, so state. ft. 5. Present depth to water ft. 1f flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- 7. If flowing well, state method of flow regulation. 8. Well discharge <u>427 g.p.m.</u> 9. Mothod of discharge measurement. weir. 9. Mothod of discharge measurement. weir. 9. Mothod of discharge in acre-fast, or number of hours pumped: 1944. <u>59</u> 12. Purpose of use. Irrigation 13. Place of use: TwpRgeSection. 13. Place of use: Twp	drillad, dug, driven, bored, jetted, etc. DeepenedMooth Year Date of measurementDecember 20, 1945 -level elsevation if availablepumphouse floor 1,186.5' GE DATA per sec. or miner's Inches. arifice, current meter, etc. 99 a.f. orhrs_ 1945_623a.f. orhrs. Acres Lagal subdivision
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled	drilled, dug, driven, bored, jetted, etc. Deepened
2. Method of construction <u>dr11led</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled ft. 1/ flowing well, so state. ft. 5. Present depth to water ft. 1/ flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- ft. 7. If flowing well, state method of flow regulation.	drilled, dug, driven, bored, jetted, etc. Deepened
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled	drilled, dug, driven, bored, jetted, etc. Deepened
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> Month Year 4. Depth to water when drilled ft. 1f flowing well, so state. ft. 5. Present depth to water ft. 1f flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- 7. If flowing well, state method of flow regulation. 8. Well discharge <u>427 g.p.m.</u> 9. Mothod of discharge measurement. weir, or 19. Mothod of discharge measurement. weir, or 10. Drawdown <u>65.880</u>	drilled, dug, driven, bored, jetted, etc. Deepened
2. Method of construction <u>dr111ed</u> 3. Date completed <u>December 10, 1920</u> 4. Depth to water when drilled	drilled, dug, driven, bored, jetted, etc. Deepened
2. Method of construction dr111ed 3. Date completed December 10, 1920 Month Year 4. Depth to water when drilled ft. 1f flowing well, so state. ft. 5. Present depth to water 21.0 1f flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- 7. If flowing well, state method of flow regulation 8. Well discharge 427 g.p.m. 9. Mothod of discharge measurement weir 9. Mothod of discharge measurement Well T 9. Mothod of discharge measurement weir, or 10. Drawdown 65.88 12. Purpose of use Irrigation 13. Place of use: Twp	drilled, dreg, driven, bored, jetted, stc. Deepened
2. Method of construction dr111ed 3. Date completed December 10, 1920 Month Year 4. Depth to water when drilled	drilled, dug, driven, bored, jetted, etc. Despensed
2. Method of construction dr111ed 3. Date completed December 10, 1920 4. Depth to water when drilled ft. 1 flowing well, so state. ft. 5. Present depth to water 21.0 1 flowing well, so state. ft. 6. Describe point from which depth measurements were made, and give sea- 7. If flowing well, state method of flow regulation 8. Well discharge 427 g.p.m. 9. Mothod of discharge measurement weir, or 10. Drawdown 65.88 11. Annuel discharge in acre-feet, or number of hours pumped: 1944 59 12. Purpose of use Irrigation 13. Place of use: Twp. (Sea 24) Twp. 14. If well is part of irrigation system of irrigation District, Association or O 14. If well is part of irrigation system of irrigation District, Association or O 15. Kind of pump. turb ine 16. Kind of pump. turb ine 17. EQUIPMENT DATA 25. Kind of power 91 oc tric 26. Kind of power 91 oc tric	drilled, dug, driven, bored, jetted, etc. Deepened

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(See Other Side)

LOG OF WELL

From (feet)	To {feet}	Descri	iption of formation material
0	20	Clay -	i de la companya de l
20	107	Gravel and elay	
107	420	Hard and and clay	
120	150	Gravel	
150	205	Cemented Gravel and Mou	untain wash
· · ·	128. m		· · · ·
-			
		· · · · · · · · · · · · · · · · · · ·	- ·
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Indicate depth at which water was first encountered, and the depth and thickness of water bearing bads. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief. SALT RIVER VALLEY WATER USERS' ASSOCIATION - -

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By Department users' ASSOCIATION By Department Dita H. J. LAWSON Department Dita General Superintendent and Chief Engineer Phoenix, Arizona

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Address . - ..

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Dets February 1, 1946

Run Date: 05/01/2006			ARIZONA DEPARTMENT OF	F WATER	RES	OURCES	WELL	REPOI	R				Pag	2 1 2	
))			Most I Auth.	Recent Issued:	O G	Reg	NT-		
Quad Town Range Sect (2160 Q40 Q10	Reg No. F	Registered Full Name & Address	Well Depth	Case Depth	Case <u>Diameter</u>	Water Level	(GPM)	Lic No) Date	<u>Date</u>	Use	shed		CRT
A 2.0 3.0 25 B/M/P: Well Type: MONITOR	B B 55	- 577234 T 1 1	OSCO MARKETING COMPANY 1500 N PRIEST DRIVE "EMPE, AZ 85281	60	47	2	35	0	78	09/29/1999	11/20/1999	н Т	07	×	
A 2.0 3.0 25 Cancelled: Y B/M/P: 1 Well Type: MONITOR	B B B 55 27-34-1348	- 571530 T	TOSCO MARKETING COMPANY 1500 N PRIEST DRIVE TEMPE, AZ 85281	60	8	4	37	0	78	10/15/1999	12/09/1998	z	07	×	≻
A 2.0 3.0 25 B/M/P: Well Type: MONITOR	B B 55	- 571529 1 1	TOSCO MARKETING COMPANY 1500 N PRIEST DRIVE TEMPE, AZ 85281	Š	8	4	37	0	269	12/28/1998	12/09/1998	на 1	07	×	
A 2.0 3.0 25 B/M/P: Well Type: MONITOR OR P	B B B 55 HEZOMETER	- 560317 (1	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON ST STE 2 TEMPE, AZ 85281	0	0	0	0	0	269			ع	07		z
A 2.0 3.0 25 B/M/P: Well Type: MONITOR OR P	B B B 55 IEZOMETER	;-560316 (CONOCO PHILLIPS COMPANY 1230 W WASHINGTON ST STE 2 FEMPE, AZ 85281	55	55	N	37	0	269		12/18/199		07	×	z
A 2.0 3.0 25 B/M/P: Well Type: MONITOR OR P	B B B 55 HEZOMETER	5 - 560314 (CONOCO PHILLIPS COMPANY 1230 W WASHINGTON ST STE 2 TEMPE, AZ 85281	55	55	N	37	0	269		12/18/199	5 Z	07	×	z
A 2.0 3.0 25 Cancelled: Y B/M/P: Well Type: MONITOR	B B 55	5 - 566223 (CONOCO PHILLIPS COMPANY 1230 W WASHINGTON STE 212 TEMPE, AZ 85281	0	0	0		0	269	01/08/1998		Z	9		
A 2.0 3.0 25 Cancelled: Y B/M/P: Well Type: MONITOR	B B B S	5 - 566222	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON STE 212 TEMPE, AZ 85281	0	0	0	0	0	269	01/08/1998		2	07		
A 2.0 3.0 25 B/M/P: Weil Type: NON-EXEMPT	B B 55	5 - 608431 I	SALT RIVER PROJECT, PO BOX 1980 PHOENIX, AZ 85001	250	250	18	52	1,232	0		08/20/196	4 AB	07		
A 2.0 3.0 25 B/M/P: Well Type: MONITOR OR F	B B B 55 PIEZOMETER	5 - 560320	TOSCO CORPORATION PO BOX 52085 PHOENIX, AZ 85072	0	0	0	0	0	269			3	07		z
A 2.0 3.0 25 B/M/P: Well Type: MONITOR OR F	B B B 5	5 - 560313 - 	TOSCO CORPORATION PO BOX 52085 PHOENIX, AZ 85072	55	55	2	37	0	269		12/18/199	ă Z	07	×	z
A 2.0 3.0 25 B/M/P: Well Type: EXPLORATION	B B 5	5 - 548570	TOSCO CORPORATION PO BOX 52085 PHOENIX, AZ 85072	45	0	0	43	0	498		03/23/199	z	07	×	z

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Salt River Project Agricultural Improvement & Power District P O Box 1980 Phoenix, Arizona 85001

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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·	ACCOU	NT NO.		INT.		(55 60	18437
FUND SOURCE	AGENCY	CHAPTER	DIV.	ACCT.	ITEM DESCRIPTION	RATE	\$ AMOUNT
					Filing Fee for Registration of	10.00	400.00
					Existing Wells		PAYMENT
						GUESTS	40 59924
					File No.:A(3-1)14 ddd	55-I TAX	400.00 0.00
					A(3-2)30 dad A(3-2)30 ccc		L 400.00
					A(3-2)30 baa A(3-2)29 dda		
			 	<u> </u>	Various	# 8484	A 12:52
			L	<u> </u>	Check #059924	L	······

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May 26, 1982 sg TOTAL \$

400.00

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55-608433

ARIZONA DEPARTMEN

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - N Date Received Received By : AMA Date Routed to	ov 84 AMA:
	RECEIVED
RT FORM	JUL -52012

MEASURING DEVICE MALFUNCTION REPORT FORM PART 1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

SRP Coordinate Location: 19.0E-07.6N

Measuring Device Type: Flow Meter

SRP Pump Number: 116

Malfunctioned on: 6/26/2012

55608433

For the reason that: No mA signal

Should be back in service: 6/26/2012

Ge Signed:

Date: 6/26/12

Well Registration Number:

LOCATION 19E	-7.60	
YEAR	2012	_
CHARGE NUMBER:	W13-0	8044-15
INSTALLED FLOWMETE	<u>CR:</u>	
Date Installed: $6/20$ Manufacture: 05 Serial No.: 2001	0681-6	14158
Size: (o ¹⁷ Flowmeter install read:	192260	
Flowmeter to be installed in (SRP pipeline or CI	TY pipeline
Type of flowmeter: (Saddle) V	Vertical or High Pre	essure or Mag Meter
REMOVED FLOWMETER	0.	
Date Removed: 6 Manufacture: 5 Serial No.: 9945	126/12	13836
Size: 6' Flowmeter removed read: Groundwater Clearance Numb	078097 er: N/A	Date Installed: $3/28/0^{-1}$
Reason for flowmeter removal	Ný	
REPAIR REPORT:	J	
What was found?		
Repairs required:		
	<u></u>	
DATA ENTRY:	TU	(las Ì
Flowmeter removed/installed b	y:	Date: $6/26/12$
Flowmeter repair by:	<u> </u>	Date:
Data entered by:	n Cr	Date: $6/26/1^2$
0		11-11-2

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Arizona Department of Water Resources Operations Division 500 N. 3rd St. Phoenix, AZ 85004-3903

DWR AR22 - N	ov 84
Date Received:	
Received By ::	
AMA :	
Date Routed to	AMA:

55608433

MEASURING DEVICE MALFUNCTION REPORT FORM PART1 - NOTIFICATION

INSTRUCTIONS

Malfunctioned on:

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator:	SALT RIVER PROJEC	Т

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

SRP Coordinate Location: 19.0E-07.6N

Measuring Device Type: Flow Meter

For the reason that: Water in lense

Should be back in service: 3/27/07

Combo ler Signed:

Date: 3-28-07

Well Registration Number:

SRP Pump Number: 116

3/27/07

19E-7.6N

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DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE

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PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE - FILE IN DUPLICATE

,		07
	FOR OFFI	CE USE ONLY
ARIZUNA DEPET OT	REGISTRATION NO. 55	608433
REGISTRATION FEE (CHECK ONE)	FILE NO. A (2-4)	309da
EXEMPT WELL (NO CHARGE) 🗆 182 MAY 11 & 3 .	5/11/82	
NON-EXEMPT WELL - \$10.00	(DATE)	(TIME)
WATES	INA	
RESOURCES	AMA PHOENIX	·
Name of Registrant:		
Salt River Project Agricultural Improvement and	Power District	
P. O. Box 1980 Phoeni	x Arizo	na <u>85001</u>
(Address) (City)	(State)	(Zip)
File and/or Control Number under previous groundwater law	N:	
(File Number) should be A02004030ACA (Control Number)		
a. The well is located within the <u>NE ¼ SE ¼</u>	NE ¼, Section	30
of Township <u>2N N/S</u> , Range <u>4E</u>	<u> </u>	3 & SRB & M, in the
County of Maricopa		
h lf is a subdivision. News of subdivision		
Irrigation and non-irrigation uses by SRP.		
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as item	SRP member lands	
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as Item	S <u>RP member la</u> nds 1, check this box [
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as Item <u>Salt River Valley Water Users' Association</u> Phoen	SRP member lands 1, check this box [
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as Item <u>Salt River Valley Water Users' Association</u> <u>P. 0. Box 1980</u> (Ciry)	SRP member lands 1, check this box [ix Arizc (State)	
	SRP member lands 1, check this box [ix Arizc (State)	2011 2011 2012 2011 2012 2012 2012 2012
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as Item <u>Salt River Valley Water Users' Association</u> <u>P. 0. Box 1980</u> (City) Well data (If data not available, write N/A) a Depth of Well	SRP member lands 1, check this box [ix Arizo (State)	ona <u>85001</u> (Zip)
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as Item <u>Salt River Valley Water Users' Association</u> <u>P. 0. Box 1980</u> (Address) Well data (If data not available, write N/A) a. Depth of Well <u>150</u>	SRP member lands 1, check this box [Dna 85001 (Zip)
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well <u>S</u> Owner of land on which well is located. If same as Item <u>Salt River Valley Water Users' Association</u> <u>P. 0. Box 1980</u> (Address) Well data (If data not available, write N/A) a. Depth of Well150 b. Diameter of casing12	SRP member lands 1, check this box [ix Arizc (State) feet inches	
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well Owner of land on which well is located. If same as Item Salt River Valley Water Users' Association POBox 1980Phoen: (Address)(Ciry) Well data (If data not available, write N/A) a. Depth of Well150 b. Diameter of casing12 c. Depth of casing150	SRP member lands 1, check this box [ix Arizo (State) feet feet feet	Dna 85001 (Zip)
Irrigation and non-irrigation uses by SRP. If for irrigation use, number of acres irrigated from well Owner of land on which well is located. If same as Item Salt_River_Valley_Water_Users'_Association PORox_1980Phoen: (Address) (City) Well data (If data not available, write N/A) a. Depth of Well150 b. Diameter of casing12 c. Depth of casing150 d. Type of casing12 ga stove pipe	SRP member lands 1, check this box [ona <u>85001</u> (Zip)
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INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- 2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.



Salt River Project Agricultural Improvement & Power District P O Box 1980 Phoenix, Arizona 85001

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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RECEIPT

400.00

	55 60	
		08398
ACCOUNT NO.	55 60	08437
SOURCE AGENCY CHAPTER DIV. ACCT. ITE	M DESCRIPTION RATE	\$ AMOUNT
Filing Fee	for Registration of 10.00	400.00
Existing We		PAYMENT
	GUESTS CHK NO	40 59924
File No.:A(3-1)14 ddd 55-1 T8X	400.00 0.00
A(3-2)30 dad TOTI 3-2)30 ccc GEN.CHE	L. 400.00 K 400.00
A(A(3-2)30 baa 3-2)29 dda	
Check #0599	24 # 8484	A 12:52

May 26, 1982 sg

TOTAL \$

	18E-8.8N
	DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE PHOENIX, ARIZONA \$5004 DEPT. OF
	REGISTRATION OF EXISTING WELLS
	READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
	PRINT OR TYPE - FILE IN DUPLICATE
	FOR OFFICE USE ONLY
	REGISTRATION FEE (CHECK ONE)
EX	EMPT WELL (NO CHARGE) \Box
NC	$DN-EXEMPT WELL - $10.00 \qquad \square$
I	INA PAX
1.	Name of Registrant:
	Salt River Project Agricultural Improvement and Power District
	P. 0. Box 1980 Phoenix Arizona 85001 (Address) (City) (State) (Zip)
2.	File and/or Control Number under previous groundwater law:
	35
_	(File Number) (Control Number)
3.	a. The well is located within the <u>NE ¼ SE ¼ NE ¼</u> , Section <u>24</u> , of Township <u>2N N/S</u> , Range <u>3E E/W</u> , G & SRB & M, in the
	County of Maricopa
4.	County of
4 . 5 .	County of
4. 5. 6.	County of
 4. 5. 6. 7. 	County of
4. 5. 6.	County of
4 . 5 . 6 . 7 .	County of
4. 5. 6.	County of
4. 5. 6. 7.	County of
4. 5. 6.	County of
 4. 5. 6. 7. 8. 	County of
 4. 5. 6. 7. 8. 	County ofMaricopa b. If in a subdivision: Name of subdivision
 4. 5. 6. 7. 8. 	County ofMaricopa b. If in a subdivision: Name of subdivision
4. 5. 6. 7.	County of
 4. 5. 6. 7. 8. 	County of

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- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
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 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project P. O. Box 1980 Phoenix, AZ 85001

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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RECEIPT						
KIND ENTRY	FILE REFERENCE NO.					
55	617781					
	THRU					
55	617830					

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\bigcap	ACCOL	INT NO.	•	INT			55	617830)
FUND	AGENCY	CHAPTER	017	ACCT.	ITEM C	DESCRIPTION	RATE	\$ AMOUNT) :
					Filing fees for f: of existing wells	ifty (50) registration	10.00	500,00	
File A(13-	NO. 25) 2	4 dbb	1	A	File No. 13-26) 7 dbd	File No. A(13-27) 21 acc			
A(13- A(13-	27) 2 27) 1	1 dbb 7 cac	1	A (A (13-26) 18 cbb 13-29) 5baa	A(13-27) 22 dbb A(1-1) 36aad	WAITER	PAYMENT	- -
A(13- A(13-	27) 9 278 1	bca 7 dbb	T 	A (A (13-28) 3 ddb 13-26) 7ac	A(2-1) 1dda A(3-1) 36ddd	GUESTS	50 60942	
A(13- A(13-	27) 1 29) 9	5 bdc bdd	1	A(A(13-26) 8 bcc 13-26) 18cad	A(3-2) 18aac A(3-2) 18aad	50 55-1	e 10.00 500.00	
A(14- A(13-	29) 3. 20) 3	B bbb acc	 	A (A (13-26) 18aaa 13-26) 24 cad	D(1-6)17 dcc A(3-2) 26dcb		0.00 L 500.00	
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A (13 A(13-	-27) 2.	2 dbb	A	A(A(A(13-28) 110bc 13-29) 5aac 13-29) 5bba	D(1-4) 9bdc D(1-4) 10cad D(1-4) 36bbFOTAL	# 1340	A 13:24-)
A(13- A(13-	26) 8 29) 1c	cbb câ		A (A (13-29) 3aba 13-27) 15bdd	A(2-4) 12bdd A(1-4) 1aba)
					Ci	EECK NO. 060942 8-18-82 vf			

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		F WATER RES	OURCES	E.	BECENEL
	PHOENIX	, ARIZONA 85004			AY 26 1982
				E.	DEP'T ON
	REGISTRATION	OF EXISTI	NG WELLS	E.	NATER I
	READ INSTRUCTIONS ON BACK	OF THIS FOR	M BEFORE CO	MPLETING	STIT
	PRINT OR TYPE	- FILE IN L	OUPLICATE	07	
		Г	FOR O	FICE USE ON	LY
				617	849
	REGISTRATION FEE (CHECK ONE)		REGISTRATION NO. $A(2-3)$	5)36 aac	2
EX	XEMPT WELL (NO CHARGE)		FILE NO	2 . /	0
N	ON-EXEMPT WELL - \$10.00 🖾		(DATE)		(TIME)
			INA PL7	£	
		L	AMA		
1.	Name of Registrant:	nvement and [Ower District		
	P. O. Box 1980	Phoenix	Ari		85001
	{Address]	(City)	(Sta	te>	{Zip}
2.	File and/or Control Number under previous	aroundwater lav	v: `		
	A02003036AAAGS1 3	5- None			
	(File Number) (C	ontrol Number}			
3.	a. The well is located within the <u>NE</u>		E 1/ Section	36	/
		1/4 <u>NE 1/4 I</u>	/4, Section		
	of Township <u>2N N/S</u> ,	Kange3	BE E/W,	G & SRB	& M, in the
	of Township <u>2N N/S,</u> County of <u>Maricopa</u>	Kange	<u>BE E/W</u> ,	G & SRB	& M, in the
	of Township <u>2N N/S</u> , County of <u>Maricopa</u>	% <u>NE % 1</u> Range	<u>BE E/W</u> , 	G & SRB	& M, in the
	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision	¼¼ _1 Range3	3E E/W,	G & SRB	& M, in the
	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No, Address	%% Range N	3E E/W,	G & SRB	& M, in the
4.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No, Address The principal use(s) of water (Examples:	Range	BE E/W, 	G & SRB	& M, in the , , al - industrial)
4.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No. <u>, Address</u> The principal use(s) of water (Examples: <u>Irrigation and non-irrigation uses</u>	Range	BE E/W, ·	G & SRB	& M, in the , , al - industrial)
4.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No, Address The principal use(s) of water (Examples: <u>Irrigation and non-irrigation uses</u>]	Range	BE E/W,	G & SRB	& M, in the , al - industrial)
4. 5.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No. <u>, Address</u> The principal use(s) of water (Examples: <u>Irrigation and non-irrigation uses</u> If for irrigation use, number of acres irrigat	Range	BE E/W, :kwater - domest RP_member_land	G & SRB	& M, in the
4. 5. 6.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No. <u>, Address</u> The principal use(s) of water (Examples: <u>Irrigation and non-irrigation uses</u> If for irrigation use, number of acres irrigat Owner of land on which well is located. If	Range Range irrigation - stoo py SRP ed from well SI same as Item 2	3E E/W, kwater - domest <u>RP member land</u>	G & SRB	& M, in the
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4. 5. 6.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No. <u>, Address</u> The principal use(s) of water (Examples: <u>Irrigation and non-irrigation uses</u> If for irrigation use, number of acres irrigat Owner of land on which well is located. If <u>Salt River Valley Water Users' Asso</u> <u>P. 0. Box 1980</u>	Range Range irrigation - stoc by SRP ed from well <u>SI</u> same as Item c ciation Phoenix	RP member land	G & SRB	& M, in the
4. 5. 6.	of Township <u>2N N/S</u> , County of <u>Maricopa</u> b. If in a subdivision: Name of subdivision Lot No. <u>,</u> Address <u></u> The principal use(s) of water (Examples: <u>Irrigation and non-irrigation uses</u>] If for irrigation use, number of acres irrigat Owner of land on which well is located. If <u>Salt River Valley Water Users' Asso</u> <u>P. O. Box 1980</u> (Address)	% Range irrigation - stoc irrigation - stoc over SRP ed from well SI same as Item ciation Phoenix (City)	RP member land check this boy Ari (Sta	G & SRB	& M, in the
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NT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in <u>duplicate</u> with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- 1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project P. O. Box 1980 Phoenix, Arizona 85001

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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Check No. 060941 8-25-82 vf

Arizona Department of Water Resources DWR AR22 - Nov 84 **Operations Division** Date Received: 500 N. 3rd St. Received By : Phoenix, AZ 85004-3903 AMA Date Routed to AMA: RECE JUL -5 2012 MEASURING DEVICE MALFUNCTION REPORT FORM **PART 1 - NOTIFICATION** ARIZONA DEPARTMENT OF WATER RESOURCES INSTRUCTIONS A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer. Well Owner/Operator: SALT RIVER PROJECT Address: P.O. Box 52025 Phoenix, AZ 85072-2025 Telephone Number: (602) 236-2612 Well Registration Number: 55617857 SRP Coordinate Location: 17.9E-07.5N SRP Pump Number: 112 Measuring Device Type: Flow Meter Malfunctioned on: 6/4/2012 For the reason that: New discharge pipe Should be back in service: 6/4/2012 Date: 6/22/12 Signed:

55-617857

FLOWMETER CHANGEOUT REPAIR DATA SHEET

LOCATION MARE-7.5NU
YEAR ZONZ
CHARGE NUMBER: 673- 28099-15
INSTALLED FLOWMETER:
Date Installed: $6-5-12$ Manufacture: 05 Serial No.: $903257 - 10$ Size: 10 Flowmeter install read: 176675
Flowmeter to be installed in (SRP pipeline) or CITY pipeline
Type of flowmeter: (Saddle) Vertical or High Pressure or Mag Meter
REMOVED FLOWMETER:
Date Removed: $6 - 4 - 72$ Manufacture: 105 Serial No.: 2021743 Size: 0^{11} Flowmeter removed read: 5566 Date Installed: $5/2/63$
Groundwater Clearance Number:
Reason for flowmeter removal: New discharge pipe, years of use
REPAIR REPORT:
What was found?
Repairs required:
DATA ENTRY:
Flowmeter removed/installed by: <u>TK</u> Date: <u>6-4-12</u>
Flowmeter repair by: Date:
Data entered by: Jalon Cy Date: 6-22-12
Sent to Water Accounting by Jafon Cece Date: <u>6-22-12</u> Flowmeter sht

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County of	County of	County of	of Township <u>2N</u>	<u>N/S</u> , Range <u>3</u>	EE/W	G & SRB &	M, in the	
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INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- 1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

F Salt River Project P. O. Box 1980 Phoenix, Arizona 85001

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

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ACCOUNT NO.	INT.		55 6	17870
SOURCE AGENCY CHAPTER DIV.	ACCT.	ITEM DESCRIPTION	RATE	\$ AMOUNT
		Forty (40) filing fees for registratio of existing wells	ⁿ \$10.00	400.00
A(1-6) 21bcc	A(1	-5) 35baa D(1-5) 8acc		
D(2-5) 44dd D(1-5) 22ccc D(1-5) 3ccc D(1-5) 9dbb D(1-5) 19ccc A(1-5) 19bdd D(1-5) 21 bdc D(1-5) 29dbc A(1-5) 33cdd A(1-5) 16ccd A(1-5) 17aaa	D(1 D(1 D(2 A(2 D(1) D(1) D(1) D(1) D(1) D(1)	$\begin{array}{cccccccc} -5) & 32 cab & D(1-4) & 11 bcc \\ -5) & ccc & D(1-4) & 12 acc \\ -2) & 3cdd & D(1-4) & 14 ccc \\ -3) & 36 aaa & D(1-4) & 22 bcc \\ -2) & 25 bcd & A(1-6) & 32 cca \\ -2) & 25 bcd & A(1-6) & 32 cca \\ -3) & 6 caa & A(1-6) & 7 ddc \\ -4) & 3bb & D(1-6) & 7 ddc \\ -4) & 3cdd & A(1-6) & 30 aba \\ -4) & 10 bdd & A(1-6) & 30 ba \\ -5) & 7 add & A(1-6) & 32 bba \\ -4) & 24 aaa & A(1-6) & 17 acc \\ \end{array}$	NAITER GUESTS CHK NO 40 55-I TAX TOT GEN.CH	PRYMENT 40 60941 2 10.00 400.00 0.00 L 400.00 EK 400.00
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Check No. 060941 8-25-82 vf

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LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER ROSCOE MOSSCOMPANY 4360 Worth Street	SRV W WAJ
Los Angeles	S, Ca. Address
2. Lessee or Operator	
-	Name
	Address
B. DRILLER J. O. EVANS	Name
Phoenix	
2N - 3F	Address
4. Location of well: TwpCl	stion
5. Intention to Drill File No. Second A(2-3)25 da	ia
DESCRIPTIO)N OF WELL
5. Total depth of hole	
7 Type of ansign 5/16" plate pipe	
1. Type of Cashiganananan Mintxan Mixtye (Cashigananan	
3. Diameter and length of casing 10 in from to	,
9. Method of sealing at reduction points	
0. Perforated from	, fromto, fromto
1. Size of cuts 3/15 x 2-1/2	Number of cuts per foot. 10 holes per 45 inches
2 If screen was installed. Longth ft Diam	in Thurs
	-1
3. Method of constructionLaD.I.C. LOC drilled,	dug, driven, bared, jetted, ctc.
4. Date started March 30, 1965 Month Day Year	.
5. Date completed May 4, 1965	
Monsh Day Year 6 Danth of water 30 ft	
If flowing well, so state.	
7. Describe point from which depth measurements were made,	and give sea-level elevation if available
······	
8. If flowing well, state method of flow regulation	
	an a
Q DEMADES,	DO NOT WRITE IN THIS SPACE
5. KERARAS	OFFICE RECORD
	Received
	Filed
	RUL No A(2-3) 25 daa
	File NO.

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

-	FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
_)	0	
_	0	2	Top soil
-	2	40	Caliche
-	40	120	Clay and some gravel
-	120	203	Conglomerate
-	203	300	Hard conglomerate
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I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller.....

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2-73	WEY 28 1974
	ELICITED IN

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		NSIDE	
436	0 Worth	Street	

Address

ROSCOE MOSS COMPANY

Los Angeles, CA 5/4/65

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						Ţ	OTAL AMOUNT DUE INCLL	DING PENA	LTY AND INTERE	<u>st</u>	· <u>\$</u>	
_		· ·				ç	ASH RECEIVED				5	÷
		1									-	

	17.9	E-7.5N	
According to o	ur records this report was furnished to your offi	ce in May, 1965	
If y	ou do not locate, please forms and we will furnis	h duplicates.	
	WATER RESOURCE O	PERATIONS	•
	Anizona R. Juetten, Su	φv.	
	State Land Department		
JACK WILLIAMS		ANDREW 1 RETTWY	
GOVERNOR	1624 WEST ADAMS	STATE LAND COMMISSIONER	
	PHOENIX, ARIZONA 63007		
	602 - 271-4634		

May 6, 1974

Salt River Valley Water Users' P. O. Box 1980	Assoc.	Re: Application for Permit to Drill for Well S-791
Phoenix, AZ 85001	-	File # A(2-3)25 daa
		Dated 2-16-65

The State Land Department, Water Rights Division is engaged in the processes of bringing its well files up to date.

Arizona Revised Statutes 45-306, 45-307, and 45-313 deal with Applications for Permit to Construct Irrigation Well, Filing of Log by Driller, Failure or Refusal to File Reports on Notices and Penalty.

Critical information included in these statutes requires that:

10

Gentlemen:

- 1. A well must be completed within one year of filing (in case of failure to complete a well within one year a new Application for Permit to Construct Irrigation Well may be filed);
- 2. Upon completion of drilling, a copy of the log, and other pertinent data shall be filed by the driller with the State Land Department; and
- 3. A person who fails or refuses to make any of these reports, give the notices required, or cooperate with the Department, is guilty of a misdemeanor and subject to a fine.

In the event the referenced well has been completed, please forward log, and other pertinent completion data to this Department within 30 days.

If no response is forthcoming, we will be compelled to assume that the well is not complete and the related file retired as cancelled.

Yours very truly,

andrew I. Bitter

NOTE: We usually receive the Report of Equipment Report covering the wells but not the Driller's report. That is the report we must have to complete 5-73 your files. Water Division


Δ 0 6

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JACK WILLIAMS

Arizona State Cand Department

> 1624 WEST ADAMS PHOENIX, ARIZONA 85007 602 - 271-4634

May 6, 1974

Salt River Valley Water Users' Assoc. P. O. Box 1980 Phoenix, AZ 85001

Re: Application for Permit to Drill for Well **S-791** File # A(2-3)25 daa Dated 2-16-65

ANDREW L. BETTWY

STATE LAND COMMISSIONER

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Yours very truly,

andren I. Better

STATE OF ARIZONA

STATE OFFICE BUILDING

PHOENIX 7, ARIZONA

OBED M. LASSEN STATE LAND COMMISSIONER PHONE 271-4621

.. ..

February 16, 1965

Salt River Valley Water Users' Association P. O. Box 1980 Phoenix, Arizona 85001

Re:	File No. A(2-3	1)25 daa
	Application No	<u>S-791</u>
	Permit No.	<u>S-774</u>

Attention: Mr. A. L. Monette, Secretary

Gentlemen:

Your application for a permit to drill a well in Twp. 2 North , Rge. 3 East

NE 1/4 NE 1/4 SE 1/4 has been approved. Your permit is enclosed. Section 25

Also enclosed are a:

- WELL DRILLING CARD, which should be in the hands of the driller before construction of the well is started;
- REPORT OF WELL DRILLER form, which shall be filled in and sent to us within thirty days after completion of the well;
- REPORT OF EQUIPMENT INSTALLED form, which shall be filled in and sent to us within thirty days after the installation of the pumping equipment.

In the event it is necessary to change the location of the proposed well you should obtain the written permission of the State Land Commissioner before proceeding with the drilling.

Very truly yours,

WATER DIVISION

By: F. C. Ryan, Supervisor kh

Enclosure: G-301 G-304 G-306 cc: USGS, Tucson

STATE LAND DEPARTMENT

>-	5-791	a(2.3)2.	5 daa	5-774
Application No.	S-791 F	ile No. A(2-3)25 de	ermit No.	<u>S-774</u>
	,. 	2-16-65		
	Filed	-~ 10 0)		

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(Applicant must not fill in the above blanks)

This application shall be submitted to the State Land Department, Water Division, Phoenix, Arizona, in accordance with the provisions of Article 7, Chapter 1, Title 45, Arizona Revised Statutes, and the rules and regulations of the State Land Department.

Applications must be accompanied by fees made payable to the STATE LAND DEPARTMENT as follows:

Application Fee \$3.00 Permit Fee \$5.00
APPLICATION FOR A PERMIT
() TO DRILL)() TO DEEPEN)(X) TO REPLACE)(X) TO REPLACE)(X) TO REPLACE)
XX (We), SALT RIVER VALLEY WATER USERS' ASSOCIATION
(Owners Name)
of P. 0. Box 1980 8500, County of
(Post Office Address)
State ofArizona, do hereby make application for a permit to
() Drill new well, () Deepen or (x) Replace the following described well in the
Salt River Valley Critical Area. $\alpha(a-3)a5$ daa
1. Location and description of proposed well: A Location of Proposed Well
Twp. 2N Rge. 3E Sec. 25 ; NE 1/4 NE 1/4 SE 1/4 9-1-51 17.9E-07.5N A (10 Ac. Subdiv.) 9-1-51 NORTH
Dept 300 ft. Type of casing Stovepipe
Proposed Withdrawal 1048 (Ac.ft, per year) WEST 25
Name and Address of Driller:
Roscoe Moss Co.
Los Angeles, California
2. Location and description of existing well: (Indicate location of well)
Twp. $2N_Rge$, $3E_Sec$, $25_NE_4 NE \frac{1}{4} SE \frac{1}{4}$ (10Ac. subdiv.)
Dept165' ft. Diameterini8.0E-07.5N A
Date drilled 10/4/1920 Location of Existing Well
Driving Unit 15 Electric H.P.
Rating of Motor
Discharge when Drilled 370
(g, p. m.) WEST CEAST
Present Discharge
Static Water Level 40.5 ft. SOUTH
Depth of Pump Setting
Pumping Lift65.0 ft.

3.	Reason new well required <u>Supplement water supply</u> .	
	··	
4.	Land to be irrigated: Land within Association boundaries.	
	Twp, Rge, Sec.	
	(Legal Subdivision Description) (Acres)	
	1 wp Kge Sec	
	(Legal Subdivision Description) (Acres)	
5.	Above described land is now irrigated as follows:	
	Project canals and wells.	
6.	Record of cultivation and irrigation of land described herein:	
	All lands within Project under cultivation prior 1948.	
-		
7.	It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor.	
7.	It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor. CERTIFICATE K(We) Salt Biver Valley Water Users' Association	
7. 8.	It is understood that the permit, if granted, will be in accordance with the Groundwater Gode of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor. CERTIFICATE K(We), <u>Salt River Valley Water Users' Association</u> the applicant named in the above and foregoing application, do hereby certify under the penalty of perjury, that the information contained and statements therein made are to the best of my knowledge and belief true, correct and complete.	
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1.9E-07.5N A IMPORTANT PLEASE COMPLETE & RETURN TO THIS OFFICE STATE LAND DEPARTMENT Water Division Phoenix 7, Arizona Location of Well File No. A(2-3)25 daa NORTH REPORT OF EQUIPMENT INSTALLED Salt River Valley Water Users' Association OWNER Phoenix, Arizona EAST WEST LOCATION OF WELL: <u>NE 1/4 NE 1/4 SE 1/4</u>, Sec. <u>25</u> Twp. <u>2N</u> Rge. <u>3E</u> SOUTH (Indicate Well Location Date Well Completed: May, 1965 Depth 300 by a circle "o" in the above Section Plat) 1. Well Test: ____ Date Well Tested: <u>8/13/65</u> 1130 (Gal. Per Min.) Discharge:___ PitotMethod of Discharge Measurement:__ (weir, orifice, current meter, etc.) Static Water Level: 29.3 ft. Drawdown 69.8 ft. Total Pumping Lift 99:1 ft. 2. Equipment Installed: Turbine Kind of Pump:____ (turbine, centrifugal, etc.) Kind of Power: <u>Electric</u> H. P. Rating of Motor <u>40</u> (Elec., Nat. Gas, Etc.) I HEREBY CERTIFY that all the above statements are true to the best of my knowledge and belief. SALT RIVER VALLEY WATER USERS' ASSOCIATION Signaturé A. L. Monette, Secty. P. O. Box 1980, Phoenix, Arizona . 19 65_. Sept. Date. Address

WD Form G-306 10-57 ţ

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SALT RIVER PROJECT

P.O.50X 1980 PHOENIX, ARIZONA 85001 VICTOR I. CORBELL, PRESIDENT FLOYD N. SMITH, VICE-PRESIDENT



A. L. MONETTE. SECRETARY K. J. KNAUER. TREASURER

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February 15, 1965

Mr. F. C. Ryan State Land Department Water Division Phoenix, Arizona 85007

Dear Mr. Ryan:

Enclosed is our check for \$8.00 for the filing and permit fee to cover application to replace one of our irrigation wells in the NE NE SE, Section 25, T-2N, R-3E.

This in conformance with the attached Form No. G-303-1M-12-56.

Very truly yours,

SALT RIVER VALLEY WATER USERS' ASSOCIATION

H. J. Roth Assistant Secretary

HJR:mb Enclosure



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PERMIT

SALT RIVER VALLEY WATER USERS! ASSOCIATION - P. O. Box 1980 - Phoenix, Arizona

STATE OF ARIZONA | 85.

This is to Certify that I have examined the above numbered application and do hereby approve the same and grant to the applicant a permit toDRILL (Replace)... the well des-

cribed therein, subject to the following limitations and conditions:

1. Water shall be limited to use on lands described as follows:

Legal Subdivision

Acres

On all lands within the boundaries of the Salt River Project

Total Acres

() 2. No right is granted by this permit for the irrigation of lands which on.....

(x) 3. The well for which permit is granted hereunder shall be completed and in operation within one year from the date hereof.

() 4. Other Limitations:

SEAL Expires: 2-16-66

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Deputy STATE LAND COMMISSIONER

FORM W-2 10-48 JAHN-TYLER

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LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA

REGISTRATION OF WELL

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Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1.	Owner SALT RIVER VALLEY WATER USERS' ASSOCL	ATION
	Phoenix, Arizona	Name
	7 1100 1-1	Address
2,	Lessee or Operator	Nama
		· · · · · · · · · · · · · · · · · · ·
		Address
3.	Driller	Name
		A 14
4	Location of well: Two 2N Raw 3E Section	25 NE Va NE Va SE Va
ч,	18E-72N	10-acre subdivision
	DESCRIPTION	OF WELL
5.	Total depth of hola_102ft.	
δ.	Type of casingStovepipe	
7.	Diameter and length of casing_12 in, fromto	in, fromto,in, fromto
8.	Method of seeling at reduction points	
9.	Perforated from <u>40 to 144</u> , from to to	, fromto, fromto
10.	Size of cuts 1/2 x 4" holes	umber cuts per foot. 8 holes per foot
11	If screen was installed: Langth	2
11.	drilled	
12.	Mernod of construction d:	illed, dug, driven, bored, jetted, etc.
13.	Dete completed 40 V 0 , 1920 D Month Year	leeponed Month Year
14.	Depth to water when drilledft.	
15.	Present depth to water 13.4 ft. [Date of measurement December 19, 1945
	If flowing well, so state.	evel elevation if availablepumphouse floor 1.194.4
10.	Describe heint trom which popul measurements were medel and give teen	
17.	If flowing well, state method of flow regulation	
	DISCHARG	t DAIA
18.	Well discharge	ber sec. or miner's inches.
19.	Method of discharge measurementWeir weir, 9	rifice, current meter, etc.
20.	Drawdown 67.66 ft.	
21.	Annual discharge in acre-feet, or number of hours pumped: 1944	57_a.f. orhrs. 1945_518a.f. orhrs.
22.	Purpose of useirrigation	· · · · · · · · · · · · · · · · · · ·
22	Place of use: TwoRgeSection	Acres
23.	(See 24)	Legal subdivision Acres
	1wpKge	Legal subdivision
24.	If well is part of irrigation system of Irrigation District, Association or C	Company, cmit 23 and give name of project.
	SALT RIVER VALLEY WAT Name of	Project
		(A-2-3)25 dea
		DO NOT WRITE IN THIS SPACE
	EQUIPMENT DATA	OFFICE RECORD
		Received 2-1-46 by 1j
25	. Kind of pump <u>turbine</u> turbine, centrifugal, etc.	Filed2-5-46by 1j
		File No. (A-2-3)25 daa
26	. Kind of powerBLBCTRIC electric. natural gas, etc.	Cross-referenced (Name)by
	15	Cross-referenced Lossin/
27	7. Horsepower rating of motor 15	

(See Other Side)

From (feet)	To (feet)	Description o	f formation material
0	8	Surface soil	<u>.</u>
8	90	<u>Clay</u>	
90	132	Cemented sand and gravel	
132	144	Sa <u>ndy</u> Clay	
144	160	Sandstone	
160	165	Clay	
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Indicate depth at which water was first encountered, and the depth and thickness of water bearing bads. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

LOG OF WELL

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I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and ballef. SALT RIVER VALLEY WATER USERS' ASSOCIATION

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By CARACTER USERS' ASSOCIATION H. J. LANSON CHARGEMANIFORM General Superintendent and Chief Engineer Phoenix, Arizona Address

Dete February 1, 1946

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ASSOCIATION				NVMOE	<u> </u>	<u> </u>
			and the second state of the	GROSS AMOUNT	DISCOUNT	NET AMOUN
FEES FOR ONE W AND 2 PERMITS	ELL DRI	LL ING APR	ETCATIONS.		Com The Com	8.00
		A CAR CALL	1 100000000000000000000000000000000000			

PLEASE CASH WITHIN 60 DAYS

n Date	9002/10/20	ARIZONA DEPARTMENT O	F WATER	RESC	DURCES	WELL	REPO	RT				Page	∞ 	
								Most Reco Auth. Issu	ed:	b. O	Reg			
F	. Banan tant 0160 040 010 Red No. F	Registered Full Name & Address	Well Depth	Case	Case Di <u>ameter</u>	Water Level	(GPM)	Lic No	ssue Date		Nu Se	hed	<u>8</u>	RI
<u>an</u> 10w	3.0 25 C C C 55-558214	CIRCLE K STORES 2857,	53	33	4	37	0	175		07/11/1996	Σ	07	×	z
ora Tune:	B/M/P: MONITOR OR PIEZOMETER	9003 N CENTRAL AVE PHOENIX, AZ 85013					1	i						Ĩ
	20 25 C C 55 - 558213	CIRCLE K STORES 2857,	53	33	4	37	0	175		07/10/1996	≥	07	×	z
oli Tvne:	BIMIP:	3003 N CENTRAL AVE PHOENIX, AZ 85013					1							
	3.0 25 C C C 55-558212	CIRCLE K STORES 2857,	53	23	4	37	0	175		07/11/1996	Σ	07	×	z
iell Tyne	B/M/P: MONITOR OR PIEZOMETER	3003 N CENTRAL AVE PHOENIX, AZ 85013							I					ļ
2.0	3.0 25 C C C 55-554024	CIRCLE K STORESINC,	0	0	0	0	0	175			Σ	07		z
in Tuno	B/M/P: MONITOR OR PIEZOMETER	3003 N CENTRAL AVE PHOENIX, AZ 85013							â					
	3 0 25 C C C 55 - 554022	CIRCLE K STORES INC,	0	0	0	0	0	175			Σ	07		z
1.7 Line	B/M/P: MONITOR OR PIEZOMETER	3003 N CENTRAL AVE PHOENIX, AZ 85013					:							
	20 25 C C C 55 - 554020	CIRCLE K STORES INC.	0	0	0	0	0	175			Σ	07		z
7.1	B/M/P:	3003 N CENTRAL AVE												
∕ell Typ∈	MONITOR OR PLEZOMETER	PHOENIX, AZ 85013						, i				5		
1 2.() 3.0 25 C C C 55-554018	CIRCLE K STORES INC,	0	Ċ	0	0	0	671			Σ	ò		z
Vali Tvns	B/M/P: MONITOR OR PIEZOMETER	3003 N CENTRAL AVE PHOENIX, AZ 85013												
	2 2 2 2 C C C 55 - 55()242	CIRCLE K CORP.	0	¢	0	0	0	175			Σ	07		z
ч г. Или К.		3003 N CENTRAL AVE PHOENIX, AZ 85013												
Vell 1yp			57	27	4	40	0	175		07/31/1995	X	20	×	z
A 2.	0 3.0 25 C C C 55-550240 B/M/P:	CIRCLE N CURP. 3003 N CENTRAL AVE	5	Ĵ	•	!	,							
Vell Typ	S: MONITOR OR PIEZOMETER	PHOENIX, AZ 85013		1									;	:
A 2.	0 3.0 25 C C C 55-550239	CIRCLE K CORP.	59	29	4	40	0	175		07/28/1995	ž	20	×	z
Neil Typ	B/M/P: ∌: MONITOR OR PIEZOMETER	3003 N CENTRAL AVE PHOENIX, AZ 85013	1	ī										:
A 2.	0 3.0 25 C C C 55-550238	CIRCLE K CORP.	58	28	7	4	0	175		07/27/1999	Σ	02	×	z
	B/M/P:	3003 N CENTRAL AVE PHOENIX, AZ 85013								:				
	0 3.0 25 D A 55 - 617857	SALT RIVER PROJECT,	300	300	18	24	1,114	0		05/04/196	٩	07		
۰ د	B/M/P:	PO BOX 1980												
Well Typ	e: NON-EXEMPT	PHOENIX, AZ 85001												

	DEPARTME 99 PH	NT OF WATER RE EAST VIRGINIA AVENUI ROENIX. ARIZONA 85004	SOURCES	MATER RESP. O	NE NE SS
	REGISTRAT	ION OF EXISTI	NG WELLS	La vin	ces S
	READ INSTRUCTIONS ON B	BACK OF THIS FOI	M BEFORE CO	MPLETING	
	PRINT OR T	YPE - FILE IN	DUPLICATE	:	
				0	7
			FOR O	FFICE USE ONLY	-
F	FRISTRATION FEE (CHECK ONE)		REGISTRATION NO.	<u>55.626</u>	525
EVE			FILE NO. A(2-	3) 35 a ad	
			FILED 6-11-0 (DATE)	2 AT Ja	TIME)
			AMA PHOE	.NIX	
1. N	ame of Registrant:			10	
_	City of Phoenix, Arizona Parks,	Recreation and Li	brary Departme	nt <u>(<i>Perry</i></u>	<u>(Park)</u>
(A	ddress)	· (City)	ALX AL	lzona · .e)	(Zip)
2. F	ile and/or Control Number under prev	ious groundwater lav	v:		
_		35-			
(F	ile Number)	(Control Number)			
З. а.	The well is located within the	<u>SE ¼ NE ¼ 1</u>	E ¼, Section	35	
	of TownshipN	N/S, Range 31	<u> </u>	G & SRB &	M, in th
	County ofMaircopa				
		· · · ·	_		
b	If in a subdivision: Name of subdi	vision	- 1) 5 F		
b	. If in a subdivision: Name of subdi Lot No, Address2	vision 626 N. 3.	<u>2 57-</u>		
ь. 4. Т	If in a subdivision: Name of subdi Lot No, Address he principal use(s) of water (Examp Municipal - to fill swimming poor	vision 2626 N. 3. ples: irrigation - stoc pl at Perry Park	<u>く 57-</u> kwater - domesti (2626 N. 32nd 5	c - municipal Street)	- industria
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City of Phoenix Water & Sewers Dept 125 East Washington St Phoenix AZ 85004

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

RECEIPT

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KIND	FILE REFERENCE NO.
<u> </u>	- 626567
55 -	626650

	ACCOU	NT NO.		INT		55 4 6	26650
FUND SOURCE	AGENCY	CHAPTER	DIV.	ACCT.	ITEM DESCRIPTION	RATE	\$ AMOUNT
			 		Filing Fee for Registration of Existing Wells	10.00	1,320.00
					Various file Numbers	HAITER GUEBTS CHK NO 55-I TAX TOT	PRYMENT 132 90191 1320.00 0.00 1320.00 FK 1320.00
			 		Paid Check #90191 11-15-82 pb	<u># 4.364</u>	1.320.00

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Run Date: 07/02/2014

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

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	.0 4.0	30 C C A	55 - 6	34799	AMA PHOE	ENIX AMA
Registered	WILLIAM &	ALYSON SAW	(IW	F	ile Type BEGI	STERED WELL
Name	4101 E. AVA	LON DRIVE		Application/Iss	ue Date 05/26	/1982
	PHOENIX		AZ 85018			
Owner	OWNER			Well Type	EXEMPT	
Driller No.	0			SubBasin	WEST SALT	RIVER VALLEY
Driller Name				Watershed	SALT RIVER	
Driller Phone				Registered Water Uses	DOMESTIC	
County	MARICOPA			Registered Well Uses	WATER PRO	DUCTION
Parcel No.	127-14-038			Discharge Method	NONE	a series a constants
Intended Cap	pacity GPM	0.00		Power	NO POWER (CODE LISTED
Well Depth	100.00	1	Case Diam	4.00	Tested Cap	10.00
Pump Cap.	10.00)	Case Depth	70.00	CRT	
Draw Down	0.00		Water Level	23.00	Log	
			Acres Irrig	0.00	Finish	PLASTIC OR PVC
Contaminat	ion Site:	YES - WITHIN	MILE OF A WQAR	FSITE		
Tribe: Not	t in a tribal zoi	ne				
	4101 E Ava	Ion Drive, Phoe	anix 85018			
Comments	HIUT L. Ava					
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 Review instructions prior to completing form You <u>must</u> include with your Notice: 	in black or blue ink. JUL 01 2014	
 check or money order for any required f Authority for fee: A.R.S. § 45-113 and A.A. ** PLEASE PRINT CLEARLY ** 	C. R12-15-104 ARIZONA DEPARTMENT	
SECTION 1. REGISTRY INFORMATION	UNADORCES	
Well Owner	Location of Well	
MAILING ADDRESS	HOIE AVA(on Dr. Phoenix	
4101 E. Avalon Dr CITY/STATE/ZIP CODE	DN 4E 30 CV4 CV4 A	
PhDENIX AZ 85018 CONTACT PERSON NAME AND TITLE	Degrees Minutes Seconds Degrees Minutes Sec METHOD OF LATITUDE/LONGITUDE (CHECK ONE) Grees Hand-Hel	
TELEPHONE NUMBER FAX	USGS Quad Map Conventional Survey SGPS: Survey-G *IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE)	
651-245-4951	COUNTY ASSESSOR'S PARCEL ID NUMBER COUNTY WHERE V BOOK MAP PARCEL IS LOCATED	
Type of Paguest jourse our	121 11 030 1101100	
(Fill out Section 2) (Fill SECTION 2. REQUEST TO CHANGE WELL D If drilling or abandoning a well, the Department of drilling form prior to the commencement of well d	Il out Section 3) (location, use, etc.) (Fill out Section RILLING CONTRACTOR must receive this request and issue authorization to the new FEE \$120 per V	
Current Well Drilling Contractor	New Well Drilling Contractor	
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127-14-038

ABBEY DAVID R/MARY L

Property Information

MCR #: Address: Latitude/Longitude: Description: Lot Size (Sq Ft): Section, Township, Range: Market Area/Neighborhood: Subdivision: Lot #: High School District: **Elementary School District:** Local Jurisdiction: Owner: Mailing Address: Deed #: Deed Date: Sale Date: Sale Price:

Parcel Type: Residential

4101 E AVALON DR PHOENIX 85018

5238 4101 E AVALON DR PHOENIX 85018 33.48314293 | -111.99319186 **RANCHO VENTURA TR 12** 9753 30 2N 4E 18/008 RANCHO VENTURA TR 12 311 SCOTTSDALE UNIFIED #48 SCOTTSDALE UNIFIED SCHOOL DISTRICT PHOENIX ABBEY DAVID R/MARY L 4101 E AVALON DR , PHOENIX, AZ 85018 071223801 November 15, 2007 October 01, 2007 \$290,000

Assessor full cash valuation over time



Valuation Data

Tax Year:	2015	2014	2013	2012	2011
Full Cash Value:	\$252,000	\$188,200	\$151,300	\$151,300	\$186,600
Limited Property Value:	\$174,752	\$166,430	\$151,300	\$151,300	\$186,600
Legal Class: Description:	3 OWNER- OCCUPIED RESIDENTIAL	3 OWNER- OCCUPIED RESIDENTIAL	3 OWNER- OCCUPIED RESIDENTIAL	3 OWNER- OCCUPIED RESIDENTIAL	3 OWNER- OCCUPIED RESIDENTIAL
Assessment Ratio:	10%	10%	10%	10%	10%
Assessed FCV:	\$25,200	\$18,820	\$15,130	\$15,130	\$18,660
Assessed LPV:	\$17,475	\$16,643	\$15,130	\$15,130	\$18,660
Property Use Code:	0131	0131	0131	0131	0131
PU Description:	Single Family Residence				
Tax Area Code:	481300	481300	481300	481300	481300

Printed: 7/2/2014 8:40:55 AM

Arizona Department of Water Resources 3550 N Central Ave. Phoenix AZ 85012

Cu	stomer:			71000 744				
TIT AR P.O	TLE SECUR IZONA). BOX 1203 CSON, AZ 8	ITY AGENC 8 35732	Y OF		Receipt #: Office: Receipt Date: Sale Type: Cashier:	15-34396 MAIN OFF 07/02/2014 IN_PERSO WRAGT	ICE	
Item No.	Index	AOBJ	Description	Ref ID		Qty Unit	Price	Ext Price
81213	15239	4439-TT	Change of Ownership/Change of Well Information/Well Assignment	634799		-	30.00	30.00
					REC	CEIPT TOTA	L:	30.00
Paymen	nt type: Cł	HECK	0					
Amoun	nt Paid: \$3	00.00	Check #	273865				
Payme	nt Received	Date: 07/02	/2014]			
Notes:	Escrow No	. 040460	104 - 742 RG	Check Date:	06/26/2014	Check No.	273865	
		DES	CRIPTION	CODE	AMOUNT			
	well transfe	ar fee			\$30.00	r		
				Check Total	\$30.00			

Seller/Buyer: Abbey Property Address: 4101 E Tax Parcel Id: 127-14

Abbey/Sawkiw 4101 East Avalon Drive Phoenix, AZ 85018 127-14-038 Memo:

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Water Manag P.O. Box 338 (602) 771-85 www.azwate	eartment of Water Resources gement Support Section 589 Phoenix, Arizona 85067-3589 00 • (800) 352-8488 r.gov	Request t	o Chang	ge Well II	nforma	tion
 Review instructions p You <u>must</u> include wit check or money Authority for fee: A.A PLEASE PRINT CLEARL 	prior to completing form in black or b h your Notice: order for any required fee(s) A.C. R12-15-151(B)(4)(a), A.R.S. § 4 Y **	NOV 2 45-113(B) NOV 2	1 2007 MGM		2-4)3 REGISTRA - 634	OCCA TION NUMBER 199
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Well Owner		Location of Well				
FULL NAME OF COMPANY, ORGA		WELL LOCATION ADDRE	SS (IF ANY)] D			
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2065 N, D	ORAN	2N 4E	30	SW 1/4	Sw;	A NE VA
Mesa AZ	85203	Degrees Minutes	"N Seconds	Degrees	Minute	"W s Seconds
CONTACT PERSON NAME AND T	ITLE	METHOD OF LATITUDE/L	.ONGITUDE (C	HECK ONE)	GPS:	Hand-Held
Reid W. Teeple:	5 .	I USGS Quad Map	GRAPHIC CO	onal Survey ORDINATE DA	U *GPS: TUM (CHEC	Survey-Grade K ONE)
420 1-20 ED	12	NAD-83 Other COUNTY ASSESSOR'S P	(please spec ARCEL ID NUI	ify): MBER	COUNTY	WHERE WELL
700-424-00					I IS LOCA	TED
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I HEREBY CERTIFY that the above statements are true to the be	est of my knowledge and belief.	
TYPE OR PRINT NAME AND TITLE	SIGNATURE OF WELL OWNER	DATE
REID W. TEEPLES	Ciere W. Josea	11/20/07
		, , , , , , , , , , , , , , , , , , , ,

DEPARTMENT OF WATER RESOURCES D9 EAST VIRGINIA AVENUE PHOENIX, ARIZONA 85004



REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE - FILE IN DUPLICATE

				t		
					FOR OFFICE USE	E ONLY
	REGISTRATION FEE (CHECK ONE)			REGISTRAT	ION NO. 55-6-	34799
ΓV				FILE NO.	4(2-4)30	ccq
NI				FILED 2.	(DATE) AT	(TIDE)
				INA		_!
				АМА	PHOENI	X
	Name of Registrant:					
	Reid W. Teeples			•	~ 7	95019
	4101 E. Avaion Drive		(City)		AZ (State)	(Zin)
			(Only)		1210(6)	זעושו
	File and/or Control Number under pre	vious groun	dwater la	w: ,		
	(File Number)	35- (Cantrol I	Number)		·	
	a The well is legated within the	NF 1/2 9	SW 14	s₩ v.	Section 30	
	of Township 2N	N/S Band		······································	FAN G & S	SBB & M in th
	County of Maricona	<u>nyo</u> , nang	je		<u> </u>	
	County of <u>Maritupa</u>			 Vaatuat 1	1.0	
	b. If in a subdivision: Name of subd	livision	Kancho	ventura #	ix Arizona	85018
	The principal use(s) of water (Exam Watering lawn and garden If for irrigation use, number of acres	oples: irrigat only. irrigated fro	tion - sto 	ockwater -	domestic - mur	nicipal - industria
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Arizona Department of Water Resources

3550 N Central Ave Phoenix AZ 85012

LAND AMERICA LAWYERS				Date:	11/21/2007
				Cashier:	WRPAB
7450 E PINNACLE PEAK RD		SUITE 254	Type:	Mail	
SCOTTSDALE,AZ	85255		•		
480-502-1106					

DCS/INV#	DESCRIPTION	N	ATTR	SIZE	QTY	PRICE	EXT	PRICE
F 78	443 9 -12	CHANGE OF WELL OWNERSHIP	15238		1	10.00	,	10.00
				1 Unit(s)	Subtotal:		10.00
					RE	CEIPT TOTAL:		10.00
						Tendered:		10.00
С	heck #: 10.00 #	ŧ 00096029						

55-634799

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE PHOENIX, ARIZONA 85004



REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING PRINT OR TYPE – FILE IN DUPLICATE

			FOR OFFICE USE	DNLY
PECISTRATION SEE (CHECK OF		REGIS	TRATION NO. 55-63	4799
REGISTRATION FEC (CRECK DI	VC)	FILE	NO. A(2-4)30C	<u>cq</u>
EXEMPT WELL (NO CHARGE)		FILED	5-26-82 AT	1PB
VON-EXEMPT WELL \$10.00		INA		(
		АМА	PHOFNIX	7
Name of Registrant:				.
Reid W. Teeples				
4101 E. Avalon Drl	ve	Phoenix	AZ	85018
(Address)		(City)	(State)	(Zip)
File and/or Control Number u	inder previous grou	ndwater law:	,	
(File Number)	<u>35-</u> (Control	- Number)	-	
a The well is leasted within	n tha NF 1/	SW 1/ SW	1/ Section 30	
a. The wen is located within of Township 2N	N/S Ron	<u>4</u> E		P 8. M in
County of Maricona	<u> </u>		<u> </u>	10 OC 141, 111
		Banaha Vartuu	#19	
D. IT IN a subdivision: Name	e of subdivision	valop Drive P	a #12	50.18
If for irrigation use, number of	of acres irrigated fr	om well		
If for irrigation use, number of land on which well	of acres irrigated fr is located. If same	om well e as Item 1, che		
If for irrigation use, number of Owner of land on which well (Address)	of acres irrigated fr is located. If same	om well e as Item 1, che (City)		(Zip)
If for irrigation use, number of Owner of land on which well (Address) Well data (If data not availab	of acres irrigated fr is located. If same	om well a as Item 1, che (City)	ck this box 🕅	(Zip)
If for irrigation use, number of Owner of land on which well 	of acres irrigated fr is located. If same le, write N/A) 100	om well e as Item 1, che (City) f	 ck this box { (State) eet	(Zip)
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If for irrigation use, number of Owner of land on which well (Address) Well data (If data not availab a. Depth of Well b. Diameter of casing c. Depth of casing d. Type of casing PVC Sche e. Maximum pump capacity f. Depth to water g. Date well completed	of acres irrigated fr is located. If same ie, write N/A) 100 4 70 edule 40 10 23 October Wonth) (Day)	rom well e as Item 1, che (City) f 	eet (State) eet allons per minute. eet below land surfac	(Zip)
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If for irrigation use, number of Owner of land on which well (Address) Well data (If data not availab a. Depth of Well	le, write N/A) 100 4 70 edule 40 10 23 October Monthi (Day) If same as Item 3 fection To fection To	om well a as Item 1, che (City) (City) (City) f i i f i f i f i f i f i f i f i i f i i f i i f i i i i i i i i i i i i i	eet (State) eet allons per minute. eet below land surfac [XX] Range	(Zip) :2.
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~	
	DEBARTMENT OF WATER RECOURCES
	99 EAST VIRGINIA AVENUE
	PHOENIX, ARIZONA 85004
	BEGISTRATION OF EXISTING WELKS
	LE DEPARTION OF EXISTING WELLS
	READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
	PRINT OR TYPE - FILE IN DUPLICATE
	FOR OPEREZUSE ONLY
	REGISTRATION FEE (CHECK ONE)
	VENDT INELL (NO CHARGE)
	$\frac{1}{(DATE)} = \frac{1}{(TIME)}$
	AMA PHOENIX
1.	Name of Registrant:
	SNERNIEL WATER TAUL
	$\frac{\gamma}{(\text{Address})} \qquad $
2	File and/or Control Number under previous groundwater law:
4.	10 2 Sharry & is deged and 2 Cannot find
	(File Number) (Control Number)
3.	a. The well is located within the $SM14SW14$ $11E14$, Section -26
	of Township <u>AN</u> , Range <u>A</u> , G & SRB & M, in the
	County of MARICOPA.
	b. If in a subdivision: Name of subdivision,
	Lot No, Address
Л	The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
7.	A) at at for a Cooling Anne tone
5.	If for irrigation use, number of acres irrigated from well <u>v</u> .
6.	Owner of land on which well is located. If same as Item 1, check this box
	Sherrich Roth B-First Interstate Trust Deri
	Phoenix AZ, 85016
	(Address) (City) (State) (Zip)
7.	Well data (If data not available, write N/A)
	a. Depth of Well / 2 O feet
	b. Diameter of casing inches
	c. Depth of casing for the feet
	a. Type of casing $3 - 3 - 4 + 9 - 9 + 4 =$
	f Depth to water 1517 for the surface
	a. Date well completed Quine 15 53 (abbrol)
	Month) (Day) (Year)
8.	The place(s) of use of water. If same as Item 3, check this box Δ
	¼¼, Section Township Range
	¼¼, Section Township Range
	Attach additional short if pagasany
	Attach auditional sheet in necessary,
~	DATE AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
9.	DATE COLOR TT SIGNATORE OF REGISTRANT DURING P. 24 100000 -

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- 2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.

7

- b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.
- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
- 7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- 8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

	ARIZONA DEPAL GROUNDWATEF MAIL TO: P.O. BO For Information <u>REGI</u> READ INSTRUCTIONS ON B PRINT (Blue or Bla	RTMENT OF WAT MANAGEMENT SUF X 458, PHOENIX, AR Call Monica Ortiz STRATION OF W BACK OF THIS FO ack Ink) OR TYPE: <u>FII</u>	ER RESOUR PORT SECTION ZONA 85001-0 at (602)417-2 ELLS RM BEFORM LE IN DUPLIC	AUG 2 4 1999
	PRIOR TO COMPLETING THIS SECTION, SEE GENERAL INSTRUCTION ON REVERSE SIDE OF FORM FILING FEE FOR REGISTRATION: (check one) EXEMPT WELL LATE REGISTRATION FEE \$10.00 EXEMPT WELL REGISTRATION FEE \$10.00 LATE FEE \$10.00 TOTAL \$20.00		FOR DEPARTMENT REGISTRATION N FILE No. A () ~ FILED (Date) INA AMA WS Gm UX	I USE ONLY 0.55- <u>867925</u> 3)24 <u>DBC</u> 1-129_By_gm
1.	Name of Well Owner: <u>LARRY</u> TH <u>4315</u> <u>N. 36 TH ST</u> Mailing Address	<u>PHX</u> City	_Telephone:60 IA Z State	2. 955. 7854 85018 Zip
2.	File and/or Control Number under previous groundwate	r law:	Control Number: 3	5-
3.	County Assessor's Parcel I.D. Information: Book:	70 File No. 26		A Control No.
4.	The well is located within the $5 \frac{W}{14} \frac{W}{10}$ in the County of Marico pa (The above)	4 <u>5 E</u> ¹ /4. Section <u>24</u> 160 Acre re description is required for pr	Township <u>2 N</u> N/	S Range <u>3 E</u> E/W "Information" on reverse side)
5.	Is the wellsite within 100 feet of a septic tank system, see Yes No \times	ewer, disposal area, landfill, hazaro	tous materials or petrol	uem storage area & tanks?
6.	The principal use(s) of water:	Examples: ir	rigation, stockwater, do	mestic, municipal, industrial)
7.	If for irrigation use, number of acres irrigated from well:	: 1/3	Acres	
8.	Owner of land on which well is located. If same as Item	1. please check		
	Name		Te	lephone No.
	Mailing Address	🐐 Cirv	State	Zin
9.	Well data: a. Depth of well <u>34</u> feet b. Depth to water c. Type of casing(s) installed: <u></u>	r: $2-4$ feet below land surface 	ce lepth offeet red for processing see #	
10.	(Month) (L The place(s) of use of water. If same as Item 3, please of	$\begin{array}{c} \text{(Year)} \\ \text{check} \underline{ } \\ \end{array}$		
	<u>1/4</u> <u>1/4</u> <u>1/4</u> <u>1/4</u> , S 10 Acre 40Acre 160 Acre	ection Township	N/S Range	E/W
I SI	ATE THAT THIS REGISTRATION IS COMPLETE AND	CORRECT TO THE BEST OF MY	KNOWLEDGE AND B	ELIEF AND THAT I UNDERSTAND THE
11.	<u>LARRY THEFR</u> 12. TYPED OR PRINTED NAME	SIGDATURE OF WELL O	WINER	13. F-24-99 DATE

DWR-55-65 (Rev 1/99)

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM GENERAL INSTRUCTIONS

- 1. Pursuant to Arizona Revised Statute (A.R.S.) § 45-593(A), all known wells within the State of Arizona were to be registered with the Department of Water Resources no later than midnight, June 12, 1982. Accordingly, all wells that are discovered after that date must be registered with the Department. Use this form in lieu of a Notice of Intention to Drill form for all wells drilled after June 12, 1980.
- 2. An "existing well" must be registered with the Department. An "existing well" is a well which was drilled before June 12, 1980 and which is not abandoned or sealed or a well which was not completed on June 12, 1980 but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on June 12, 1980.
- 3. A well drilled after June 12, 1980 without first filing a Notice Of Intention to Drill pursuant to A.R.S. § 45-596 or obtaining a well permit pursuant to A.R.S. § 45-599 must also be registered with the Department.
- 4. Pursuant to A.R.S. § 45-593(D), "within thirty days after a change of ownership of real property, the new owner shall notify the Director in writing of the existence of any open well or wells on the property which the new landowner has discovered. Thereafter, the owner shall report the existence of any open well on the property within ten days after the owner discovers the well."
- 5. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater for a non-irrigation use, including the application of groudwater on less than two (2) acres of land to grow crops for sale or human consumption or for use as feed for livestock, range livestock or poultry. A "Non-Exempt Well" means a well that is not an "Exempt Well".
- 6. In accordance with A.A.C. R12-15-151(B)(4), a \$10 registration fee and a \$10 late fee is required for Non-Exempt wells. For Registration of exempt wells, only a \$10 late fee is required. Check the appropriate well type on the front of this form, submit the fee, and mail to P.O. Box 458, Phoenix, Arizona 85001-0458 or hand deliver to 500 North 3rd Street, Phoenix, Arizona.

INFORMATION FOR REGISTRATION QUESTIONS

- 1. This form must be filed in duplicate with original signatures on both copies.
- 2. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of the State.
- 3. If you own any type of well drilled on or after June 20, 1968, or an existing irrigation well drilled prior to June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2.
- 4. Provide the Assessor's I.D. Number. This information can be obtained from your recorded deed, or by contacting your county assessor's office.
- 5. Furnish complete well location to include the ¹/₄ ¹/₄ sections. Section Number. Township, and Range (Required). If this required information is not known, you may contact the Mapping Division of the County Assessor's Office in which the property is located.
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., provide the appropriate title of person signing.
- 7. Complete the section on Well Data (item 9) with the most accurate information available to you. If data for items (a) thru (f) is not available, write "unknown" in the appropriate blank. For Item f, if the month and day are unknown, at least an approximate year the well was completed is required.
- 8. Provide the legal description of where the water will be used.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished.

DWR-55-65 (1/99)

ARIZONA DEPARTMENT OF WATER RESOURCES

500 North Third Street, Phoenix, Arizona 85004 Telephone (602) 417-2450 Fax (602) 417-2401

September 30, 1999



JANE DEE HULL Governor

RITA P. PEARSON Director

LARRY THIHER 4315 N 36TH STREET PHOENIX AZ 85018

RE: Well Registration No. 55-807925 File (location) No. A(2-3) 24 DBC

Dear Well Owner:

Enclosed is a copy of the Well Registration form recently submitted to this Department. Your cancelled check can serve as your receipt. The Registration Number assigned is referenced above.

Also enclosed is a blank Change of Well Information form. This form should be used for any **future** changes to this well, as follows:

- Change of ownership of the well; (lower half of form)
- CHANGE OF ADDRESS
- Change in well data, such as pump capacity
- CORRECTION of legal description as to location of the well
- Change of well driller, PRIOR to drilling the well
- Amending information previously filed

Please contact this office if further assistance or information is required.

Sincerely,

loria Mos

Gloria Moss Groundwater Management Support Section

Enclosures

DOUGLAS A. DUCEY Governor



THOMAS BUSCHATZKE Director

ARIZONA DEPARTMENT of WATER RESOURCES 1110 W. Washington St., Suite 310 Phoenix, Arizona 85007-2952 602.771.8500 azwater.gov

August 31, 2016

Camey Brochu The Secret Garden 2501 E. Baseline Rd. Phoenix, AZ 85042

Re: Well Site Inspection Report

Dear Ms. Brochu:

The Arizona Department of Water Resources (Department) conducted a well site inspection for well registration No. 55-809877. The purpose of the inspection is to verify the following: (1) Minimum well construction standards as set forth in A.R.S. § 45-594 and Arizona Administrative Code R12-15-81; and (2) Obtain factual data, or access to records required to be kept under A.R.S. § 45-632

Pursuant to A.R.S § 41-1009, the Department is required to provide you with a copy of the site inspection report within 30 days after the inspection. A copy of the "Well Site Inspection Report" along with "Well Registry Report" is enclosed. A complete copy of the well file is available online at <u>http://www.azwater.gov</u>, or by contacting the Department.

Additionally, pursuant to A.R.S. § 45-593, the person to whom a well is registered must notify the Department of a change in ownership, physical characteristics or any other data about the well in order to keep the well registration records current and accurate. Forms may be obtained online at http://www.azwater.gov, or by contacting the Department.

Lastly, A.R.S § 45-600, requires registered well owners to file a Pump Installation Completion Report (form 55-56) with the Department within 30 days after the installation of pumping equipment. Forms are available online at <u>http://www.azwater.gov</u>, or by contacting the Department.

If you have any questions or need further assistance, please contact the Groundwater Permitting and Wells Unit at (602) 771-8527.

Sincerely,

ab Nch

Jacob Nelson Groundwater Permitting and Wells Unit

Enclosures: Well Site Inspection Report Well Registry Report

Via email: Camey Brochu camille.brochu@creativehandscuisine.com

Cc: samurillo@azwater.gov

Run Date: 08/31/2016

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location A 1	.0 3.0	2 A B B	Well Reg.No 55 - 809877	AMA	
Registered Name	THE SECRE ATTN: CAM 2501 E BAS PHOENIX	et garden Iey Brochu Seline Road Az 85	5042	File Typ Application/Issue Date	e LATE REGISTRATION e 08/18/2016
Owner Driller No. Driller Name Driller Phone County Parcel No. Intended Ca	OWNER 0 MARICOPA 301-26-469 pacity GPM	0.00	Registere Registe Disc	Well Type EXEM SubBasin WES ⁻ Watershed SALT ed Water Uses COM red Well Uses WATE harge Method NO D Power NO P	IPT F SALT RIVER VALLEY RIVER MERCIAL ER PRODUCTION ISCHARGE METHOD LISTED OWER CODE LISTED
Well Depth Pump Cap. Draw Down	0.00 0.00 0.00	D D D	Case Diam20.0Case Depth0.0Water Level0.0Acres Irrig0.0	0 Test 0 0 0	ed Cap 0.00 CRT Log Finish NO CASING CODE LISTED
Contaminat Tribe: No Comments Current Acti	ion Site: t in a tribal zo on	YES - WITHIN 1 MI OF	F A NPL SITE		
8/18/2016 Actio	101 n Comment:	LATE REGISTRATIC	ON APPROVED		
Action Histo 8/31/2016 Actio 8/18/2016 Actio	ny 856 n Comment: 100 n Comment:	CHANGE OF BOOK/ OLD BOOK/MAP/PA LATE REGISTRATIC sm	MAP/PARCEL DATA RCEL: 301 26 459 by us N RECEIVED	er WRJRN	

Arizona Department of Water Resources Groundwater Right/Facility Report

RIGHT #:	58-115056.000	0		STATUS DATE:	7/7/1994	
AMA:	PHOENIX AMA		RIGHT/PERN	IIT/FACILITY TYPE:	IRRIGATION US	E
LAND OWNERSHIP :	PRIVATE OR (COMPANY		FILE STATUS:	EXEMPT - SMAL	L
2016 ALLOTMENT:	16.89	BMP Enrollee:	N	RETIRED ACRES:	0.00	
WATER DUTY ACRES:	4.10	IRRIGATION ACRES	S 4.66	WATER DUTY	0	Mgt Plan 0
IRRIGATION DISTRICT N	AME: SALT R	IVER PROJECT		MAWA:	0	
		ale a martala				
NAME & ADDRESS						
PERKINS HE	RBERT D			TYPE:	OWNER	
2501 E BAS	ELINE RD					
PHOENIX	AZ	85040				
PLACE OF USE			natura in t			
NE NW 02 T1.0S F	R3.0E					
BOOK/MAP/PARCEL						
*** NO DATA FOUN	D ***					
WELL SERVING						
*** NO DATA FOUN	D ***					

RIGHT TO FACILITY RELATIONSHIPS

*** NO DATA FOUND ***



SITE INSPECTION REPORT

1. **ADWR Inspector:** This inspection is being conducted by an Arizona Department of Water Resources (ADWR) employee who must present photo identification upon entry of the inspected property and whose name and phone number are indicated below. The ADWR employee will be available to answer questions regarding this inspection.

2. **Purpose of Inspection:** The purpose of the inspection is to verify the following: (1) Minimum well construction standards as set forth in A.R.S. § 45-594 and Arizona Administrative Code R12-15-81; and (2) Obtain factual data, or access to records required to be kept under A.R.S. § 45-632.

Date:	Augus	st 30, 201	6 Well Registration Number: 55-809877
Name	e: <u>Came</u>	ey Brochu	Parcel Number: <u>301-26-469</u>
Maili	ng Addre	ess:	
Cada	stral Loc	ation T	$\frac{15}{\text{ownship}} \frac{3E}{\text{Range}} = \frac{2}{5\text{ection}} \frac{NE}{160 \frac{1}{4}} \frac{NW}{40 \frac{1}{4}} \frac{NW}{10 \frac{1}{4}}$
Latitu	ide De	egrees	ZZ36.10- 112135.92MinutesSecondsLongitudeDegreesMinutesSeconds
Well	Location	n:	
Addro or Majo	ess: <u>25</u> r Cross F	Roads:	Baseline Road, Phoenix, 12 85042
YES	NO	NA	
X			Is the well a safe distance from potential contamination?
X			Is there a pump on the well?HP pump size
			Is there evidence of a surface seal?
	0	X	Is the well capped?
	X	0	Is the well located within a vault (not easy to see) on contained within a fence (not easy to access)?
X			The well casing extends
PVC	Steel	Other	
	X		Casing Type?
	20	Inches	Case Diameter?

Findings in this review reflect observed conditions as they existed on the day of the site inspection. No claim is made, express or implied, regarding the future success or failure of the system.

Pursuant to A.R.S § 41-1009 the Department is required to provide a copy of the inspection report within 30 days after the inspection.

ame (please print: Caney Paro chu	L
ignature: CBroch	Title: owner

Arizona Department of Water Resources	
ADWR Employee:(Signature)	Date: 8/30/16
 Photo identification presented Photos taken Aerial Photo or Plot Map Identifying well on parcel 	Time: <u>9:36</u>



Arizona Department of Water Resources Groundwater Permitting and Wells P.O. Box 36020 Phoenix, Arizona 85067-6020 (602) 771-8527 · (602) 771-8690 fax • www.azwater.gov •

FEE \$60.00

FILE NUMBER A 1-3 ZABB WELL REGISTRATION NUMBER

200

55 - 8

- Review instructions prior to completing form in black or blue ink. ÷
- *
- You <u>must</u> include with your application: > check or money order for the fee(s) Authority for fee: A.R.S. § 45-113 and A.A.C. R12-15-104 ٠

AMA / INA	В	SB
Phoenux	Phx	64
RECEIVED DATE	WS	
8-18-16	0	1
ICCUED DATE	WQARF	CERCLA
ISSUED DATE	and the second second second	

**	PL	EA	SE	PRINT	CL	EARLY *	*

SECTION 1. REGISTRY INF	ORMATION							
Well Type	Fee	Location of	Well					
CHECK ONE		WELL LOCATION	N ADDRESS (IF ANY) OF	R CROSS-STREETS				
X Exempt		2501 E Baseline Road						
(Pump has a maximum capacity of	\$60	TOWNSHIP (N/S) RA	ANGE (E/W) SECTION	160 ACRE 40 A	CRE 10 ACRE			
not more than 35 gpm and water is	\$00	2.0 S 3	3.0 E 2	NE 1/4 N	N 1/4 NW 1/4			
inside an AMA.) (See instructions.)		LATITUDE		LONGITUDE				
Non-Exempt		33 .	27 ' 36.10"N	112 0	1 :35.92 W			
(Pump has a maximum capacity of	100	Degrees	Minutes Seconds	Degrees M	inutes Seconds			
more than 35 gpm and the well is	he well is \$60	METHOD OF LATITUDE/LONGITUDE (CHECK ONE)						
located outside an AMA.)		Google Earth Conventional Survey *GPS: Survey-Grade						
(See instructions.)		*IF GPS, GEOGR	APHIC COORDINATE D	ATUM (CHECK ONE)			
ORIGINAL WELL DRILLING FIRM (IF KNOWN)		NAD-83 Other (please specify):						
		COUNTY ASSES	SOR'S PARCEL ID NUM	MBER	# OF ACRES			
ORIGINAL WELL DRILL DATE (ESTIMA	TE IF NOT KNOWN)	BOOK	MAP	PARCEL	1.10			
		301	301 26 4		4.42			
PROPERTY OWNER WHEN WELL WAS DRILLED (IF KNOWN)		PLACE OF USE (TOWNSHIP (N/S) RA	(ONLY IF DIFFERENT FI ANGE (E/W) SECTION	ROM LOCATION OF 160 ACRE 40	WELL) ACRE 10 ACRE			
		2.0 S 3.	.0 E 2	NE 1/4 NW	1 1/4 NW 1/4			
		COUNTY WHERE IS LOCATED	WELL MARICO	OPA				

SECTION 2. OWNER INFORMATION					
Land Owner		Well Owner (check this box if Land Owner and Well Owner are same)			
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL		FULL NAME OF COMPANY, GOVERNMENT AGENCY, OR INDIVIDUAL			
The Secret Garden		The Secret Garden			
MAILING ADDRESS		MAILING ADDRESS			
2501 E Baseline Road		2501 E Baseline Road			
CITY / STATE / ZIP CODE		CITY / STATE / ZIP CODE			
Phoenix, AZ 85042		Phoenix, AZ 85042			
CONTACT PERSON NAME AND TITLE		CONTACT PERSON NAME AND TITLE			
Camey Brochu		Camey Brochu			
TELEPHONE NUMBER FAX		TELEPHONE NUMBER FAX			

S	SECTION 3.					
Q	uestions	Yes	No	If Yes:		
1.	Is the well site within 100 feet of a septic tank system, sewer disposal area, landfill, hazardous materials or petroleum storage area or tank?		X	EXPLAIN		
2.	Is there another well name or identification number associated with this well? (e.g., Lot 39 Well, MW-1, Smith Well, etc.)		X	PLEASE STATE		
3.	If this well is an exempt well, is it the second exempt well on this parcel for the same use?			EXPLAIN		

Late Registration of a Well

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Late Registration of a wen			55-809877					
SECTION 4. WATER/SITE INFORMATION								
Principal Use of Water	Other Uses of Water	MAXIMUM PUMP CAPACITY						
CHECK ONE	CHECK ALL THAT APPLY		Gallons Per Minute					
Commercial	Irrigation (# of acres Commercial) TOTAL DEPTH OF WELL	Feet Below Land Surface					
Domestic Industrial Drainage Monitoring Municipal Stock Dewatering Other (please specify):	Domestic Industrial Drainage Monitoring Municipal Stock Dewatering Other (please specify):	STATIC WATER LEVEL	Feet Below Land Surface					

WELL REGISTRATION NUMBER

	Boreho	le	1		Exist	ing	Ca	sing	(to the best	of y	our	kпо	wle	dge))			
DEPTH	FROM	BOREHOLE DIAMETER (inches)	DEPTH	FROM	· · · ·		MA		L TYPE (T)		PER		PERFOR		DRATION		TYPE(T)	
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)		
					20	χ		P										

					Ex	istir	ng A	nnular	Material (to the best of your knowledge)			
DEPTH	FROM							ANN	ULAR MATERIAL TYPE (T)		FIL	TER PACK
SURFACE BENTONITE												
FROM (feet)	TO (feet)	NONE	CONCRETE	OR CEMENT	BENTONITE	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
SECTION	N 6. OPT			BY P	ROF	ER		OWNER	R AND WELL OWNER ONLY			-
By	checking easuremer	this this at	box, this	I here well.	eby p	rovic instr	le AD	OWR pe	rmission to enter the property for the purpose of tak	ing wat	er leve	el
SECTION	7. WEL	LO	WN	ER C	RP	ROP	PER	TY OW	NER SIGNATURE			
I state that	t this regist	ratio	n is i	comp	lete a	and c	orre	ct to the	best of my knowledge and belief.			
TYPE OR PR	NINT NAME A	R	M	sch	M	6	UN	v	SIGNATURE OF WELL OWNER OR LANDOWNE	R	-	8-30-16

DWR 55-65 REVISED 20160211 Page 2 of 2







8/18/2016 2:35:46 PM

301-26-469 Commercial Parcel

This is a commercial parcel located at <u>2501 E BASELINE RD PHOENIX 85042</u>. and the current owner is CDK VENTURES LLC. It is located in the Mata Property subdivision and MCR 65213. Its current year full cash value is \$1,395,300.

Property Information

2501 E BASELINE RD PHOENIX 85042

MCR #	65213
Description:	MATA PROPERTY MCR 652-13
Lat/Long	33.37772260 -112.02703055
Lot Size	192,432 sq ft.
Zoning	MUA
Lot #	1
High School District	PHOENIX UNION #210
Elementary School District	ROOSEVELT ELEMENTARY SCHOOL DISTRICT
Local Jurisdiction	PHOENIX
S/T/R	2 1S 3E
Market Area/Neighborhood	04/005
Subdivision (1 Parcel)	MATA PROPERTY

Owner Information

CDK VENTURES LLC

Mailing Address1430 N ROBIN LN , MESA, AZ 85213Deed Number140473534Last Deed Date07/18/2014Sale Daten/aSale Pricen/a

Valuation Information

We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our <u>data sales</u>.

Tax Year	2017	2016	2015	2014	2013
Full Cash Value	\$1,395,300	\$1,399,500	\$936,900	\$1,032,700	\$910,121
Limited					Variability
Property Value	\$1,032,932	\$983,745	\$936,900	\$1,001,133	\$910,121
Legal Class	1	1	1	1	1
Description	COMMERCIAL / OTHER R/P				
Assessment Ratio	18%	18%	18.5%	19%	19.5%
Assessed FCV	n/a	n/a	n/a	\$196,213	\$177,474
Assessed LPV	\$185,928	\$177,074	\$173,327	\$190,215	\$177,474
Property Use Code	1040	1040	1040	1040	1040
PU	Miscellaneous	Miscellaneous	Miscellaneous	Miscellaneous	Miscellaneous
Description	Commercial	Commercial	Commercial	Commercial	Commercial
Tax Area Code	661300	661300	661300	661300	661300
Valuation Source	Notice	Notice	Notice	SBOE	Notice

Additional Property Information

Additional commercial property data.

Description	Imp#	Model	Rank	CCI	Age	Sq Ft.
Single Family Residence (Residential)	000101	351	3	С	44	3,540
Clubhouse	000201	311	3.3	С	12	3,780
Commercial Yard Improvements	000301	353	2	D	12	1

Building Sketches

Sketches that illustrate the external dimensions of a property.





8/18/2016

Similar Parcels

Parcels that are similar to this one (known as the reference parcel) are displayed below.

APN Address Sale Info FCV Size Livable Sq Ft Year Built Pool Foreclosed

No similar parcels found.

Arizona Department of Water Resources

1110 West Washington Street, Suite 310 Phoenix AZ 85007

Customer:	Phoenix AZ 85007				
THE SECRET GARDEN EVENT CENTER LLC 2501 E BASELINE RD PHOENIX, AZ 85042-7033		Receipt #: Office: Receipt Date: Sale Type: Cashier:	16-40336 MAIN OFF 07/08/2015 Mail WRSYM	TICE	
Item No. Function Code AOBJ Descri	ption	Ref ID	Qty	Unit Price	Ext Price
90 WRFREV 4439-11 LATE F EXEMP	REGISTRATION OF WELL - PT		1	60.00	60.00
			RECEIPT	TOTAL:	60.00
Payment type: CHECK					
Amount Paid: \$60.00	Check # 1415				

Payment Received Date: 07/08/2015

Notes:

Run Date: 03/26/2010

AZ DEPARTMENT OF WATER RESOURCES

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WELL REGISTRY REPORT - WELLS55

Location A 2	.0 3.0	22 D D D	Well Reg.No 55 - 607715	AMA PHOENIX AMA	
Registered Name	SALT RIVER PO BOX 198	R PROJECT, 80	Fi Application/Issu	ile Type REGISTERED WELL sue Date 05/18/1982	
	PHOENIX	AZ 85001			
Owner Driller No. Driller Name Driller Phone County Intended Ca	OWNER 0 MARICOPA pacity GPM	0.00	Well Type SubBasin Watershed Registered Water Uses Registered Well Uses Discharge Method Power	NON-EXEMPT WEST SALT RIVER VALLEY SALT RIVER IRRIGATION WATER PRODUCTION NONE NO POWER CODE LISTED	
Weil Depth Pump Cap. Draw Down Contaminat	246.00 760.00 0.00	0 Case 0 Case I 0 Water I Acres YES - WITHIN 1 MILE OF A V	Diam 12.00 Depth 246.00 Level 70.00 s Irrig 0.00 VQARF SITE	Tested Cap 760.00 CRT Log Finish STEEL-PERFORATED OR SLOTTE CASING	⊡
Comments Current Acti	Recovery W	/ell Permit No. 74-548930			
6/26/2008 Actio	775 on Comment:	WQARF UPLOAD OF WELL Old WQARF Code = NULL	INVENTORY DATA		
Action Histo 11/4/2004 Actio 9/1/1920 Actio	880 on Comment: 755 on Comment:	CHANGE IN CONTAMINATI Old WQARF Code = NULL WELL CONSTRUCTION CO	ON SITE		



FORM W-2 10-45 JAHN-TYLER

LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA T

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Soction 5, Chapter 12, Senate Bill No. 3, Seventeenth Logislature, First Special Session 1945.

1. Owner SALT HIVER VALLEY WATCH USERS' ASSA	Name Name
Phoenix, Arizone	Address
2. Lessee or Operator	
· · · · · · · · · · · · · · · · · · ·	
3. Dritler E. N. Brown Drilling Company	Address
Phoenix. Arizona	Name
4. Location of well: Twp. <u>ZN</u> Rge. <u>35</u> Se 1815-8N	Address ction <u>22</u> <u>3E 1/4 SE 1/4 SE 1/4</u> 10-acre subdivision
DESCRIPT	ION OF WELL
5. Total depth of hole <u>629</u> ft.	•
6. Type of casing ALLIVE DIDE	
7. Diamater and length of casing <u>di</u> in from to	,in, fromto,in, fromtoto
8. Method of sealing at reduction points	,
9. Perforeted from to the from to	tromto tromto
10. Size of cufs	
12 Marked of accounting drilled	/P+
12. Mando of contraction	drilled, dug, driven, bored, jetted, etc.
13. Date completed Month Year	Despersed Month Year
14. Depth to water when drilled	aft.
15. Present depth to water 29.5 If flowing well, so state.	ft. Date of measurement. December 5, 1945
17. If flowing well, state method of flow regulation	ARGE DATA
18. Well discharge 606 g.p.m.	R
gal. per min. or cu. 19. Method of discharge measurement woir	
20. Drawdown 61.71 44	ir, orifice, current motor, etc.
21. Annual discharge in acre-fest, or number of hours pumped: 1944.72	28a.f. orhrs. 1945_868a.f. orhrs.
22. Purpose of use irrigation	
23. Place of use: TwpRgeSection	Acres
RgeSection	Acres
24. If well is part of irrigation system of Irrigation District, Association (or Compeny, omit 23 end give name of project.
SALT RIVER VALLE	Y WATER USERS ' ASSOCIATION
Name	(A-2-3),22 ddd
	DO NOT WRITE IN THIS SPACE
EQUIPMENT DATA	OFFICE RECORD
75 Kind of owner turbine	Received 2-4-46 by 1j
turbine, centrifugal, etc.	Filed <u>2-4-45</u> by 1j
26. Kind of powerelectric	- Cross-referenced (Name)
slactric, natural gas, atc.	Cross-referenced (Basin)by

(See Other Side)

LOG OF WELL

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Indicate depth at which water was first encountered, and the depth and thickness of water bearing bads. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

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0 7 Surface soil 7 20 Galiche and clay 29 62 Sand and Gravel 62 128 Galiche 128 131 Gravel 131 145 Galiche 145 153 Gravel 153 171 Caliche 171 173 Sand 173 182 Clay 212 234 Gravel 213 234 Cornel 234 246 Commit and gravel	From (fect)	To- (feet)	Description of formetion material
7 20 Caliche and Cravel 62 128 Caliche 128 131 Gravel 131 145 Caliche 145 153 Oravel 153 171 Caliche 171 173 Send 172 188 Gravel 173 188 Gravel 174 173 Send 175 188 Gravel 182 212 Clay 212 234 Gravel 234 248 Gemented send and gravel 234 234 234 234 234 234 234 234 234 <th>0</th> <th>7</th> <th>Surface soil</th>	0	7	Surface soil
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234 248 Comented cond and gravel	212	234	Gravel
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I hereby cartify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief. SALT RIVER VALLEY WATER USERS' ASSOCIATION

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BY DE ALANSON DEGENERATER H. J. LAWSON DEGENERATER GENERAL BURGENINTENDENT AND CHIEF ENGINEER PHOENIX. ARIZONA Address

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LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA í

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

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1.	OWNER ANAMAX MINING COMPANY (Twin Buttes)									
	P.O. Box 127, Sahuarita, AZ 85629									
	Address									
2.	Lessee or Operator. Same									
	Addrese MORROW DRILLING CO.									
8.	DRILLER									
DOX 4730, OUESSA, TEXAS /7/00										
	Address 10 12 4 NE NE SM									
4.	Location of well: Twp. 10 Rge. 15 Section 4 INE 14 NE 14 SW 14									
5 .	Intention to Drill File No. 35-40662									
•••										
	DESCRIPTION OF WELL									
	022									
6.	Total depth of hole									
7.	Type of casingSteel									
~	10^{-1}									
8.	Diameter and length of casing									
9.	Method of sealing at reduction points									
10.	589 to 589 to 670 from 771 to 932 from to from to									
	renorated from the second from the second se									
	President 5/16 inch Number of cuts per foot 6 per ft.									
11,	Size of cuts5/16 inchNumber of cuts per foot6 per ft.									
11. 12.	Size of cuts <u>5/16 inch</u> Number of cuts per foot <u>6 per ft.</u> If screen was installed: Length 101 ⁵ ft. Diam. 18 in. Type Johnson									
11, 12, 18,	Size of cuts <u>5/16 inch</u> Number of cuts per foot <u>6 per ft</u> . If screen was installed: Length 101 ⁵ ft Diam. 18 in. Type Johnson Method of construction <u>Drilled</u>									
11, 12, 18,	Size of cuts 5/16 inch Number of cuts per foot 6 per ft. Size of cuts 5/16 inch Number of cuts per foot 6 per ft. If screen was installed: Length 101 ⁵ ft. Diam. 18 in. Type Johnson Method of construction Drilled drilled. dus. driven, bored. jacted, etc. Data started Nov.									
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(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
Ó	43	fill
43	763	alluvium
763	932	gtz-feldspar porphyry
		· · · · · · · · · · · · · · · · · · ·
<u> </u>		
<u> </u>		
	·	
	1	
<u> </u>		

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief. ANAMAX MINING COMPANY

Date..

1,1211 - Driller By :... Nan

12-28-76

Director of Land Management

T

Address

2 1 'भा आग 2-73



NOTICE OF INTENTION TO DRILL WELL

02-73

WATER DIVISION



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NOTICE OF INTENTION TO DRILL WELL

LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA

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10 ن م 62-73



John M. Little Acting

April 13, 1979

Anamax Xining Company Post Office Box 127 Sahuarita, Arizona 85629

Gentlemen:

This office is attempting to bring its records up to date. The following information is in the State Land Department office:

Description of Improvements Placed Without Prior Approval			Notice of Intent	Report of Well Driller	Report of Equipment Installed
1	6	None	SWSENW	×	x
Ŧ	7	SWSENW	SWSENW	X	x
ì	ġ	NWNESW	NWNESV	×	x
i	9	SWSENW	NWSENW	×	X
i	ín	NWNESW	NENESV	×	X
i	11	NENESV	None	None	None
i	12	SESENW	NENWSW	None	None

Please note:

- The description of 1 9, 1 10, and 1 12 do not agree.
 I II, no Notice of Intent has been filed. No Report of Well Driller or Report of Equipment Installed has
- been received.
 3. The Report of Well Driller and Report of Equipment Installed has not been received on 1 12.

Your attention to this matter would expedite the processing of your reports.

verv truly ƁrJ∕an Kirby∕ Water Rights Division

BK:sw

STATE LAND DEPARTMENT Water Division Phoenix, Arizona 85007

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Location of Well NORTH	File No. Well I-10						
VEST	REPORT OF EQUIPMENT INSTALLED OWNER ANAMAX MINING COMPANY						
	LOCATION OF WELL:						
	<u>NE ¹/₄ NE ¹/₄ SW ¹/₄, Sec. 4 Twp. <u>185 Rge. 13E</u></u>						
5001H	Date Well Completed: 11-27-76 Depth 931 ft.						
(Indicate Well Location by a circle "o" in the above Section Plat)							
1. Well Test:							
Discharge: 13 (Gal.	00 Date Well Tested: Feb. 23, 1977 Per Min.)						
Method of Discharg	e Measurement: <u>Cumulating current meter</u> (weir, orifice, current meter, etc.)						
Static Water Level:	645 ft. Drawdown 41 ft.						
Total Pumping Lift	786ft.						
2. Equipment Installed	<u>1:</u>						
Kind of Pump: V	Kind of Pump: Vertical line-shaft turbine pump						
	(turbine, centrifugal, etc.)						
Kind of Power: (Elec., N	Electric H.P. Rating of Motor 400 at. Gas, Etc.)						
I HEREBY CERTIFY (knowledge and belief.	that all the above statements are true to the best of my ANAMAX MINING COMPANY						

By:

Date_ <u>3-21-</u>, 19<u>77</u>.

Signature Director of Land Management

P.O. Box 127, Sahuarita, Arizona 85629 Address

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S 1 1		CASH RECEIVED	(9) (9)
		SALANCE DUE OR OVERPAYMENT	2

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FORM W+2 10-48 JAHN-TYLER

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LAND DEPARTMENT WATER DIVISION STATE OF ARIZONA

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REGISTRATION OF WELL

Registration of well existing as of Oct. 3. 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner SALT HIVER VALLEY WATER USERS' ASS	JOIR II UN	<u> </u>
Phoenix, Arizona	Name	
	Address	
2. Lessee or Operator	Nama	
• • • • •		•
	Address	
3. Driller E. N. Brown Drilling Company	Name	
Phoenix, Arizona		
() · · · · · · · · · · · · · · · · · ·	Address	
 A. Location of well: Twp. ∠N Rge. 2# Set 16R_AN 	$\frac{2E \frac{1}{4} \frac{2E \frac{1}{4}}{10 \text{ errs subdivision}}}{10 \text{ errs subdivision}}$	
DESCRIPTI	ION OF WELL	
5. Total depth of hole_246tr		
6. Type of casing stovepipe	- -	
7. Diameter and length of casing 12 in from	in from the line to the	
8. Method of seeling at reduction points		
9. Perforeted fram <u>40 to 228</u> , fram <u>to</u>	fromto fromto	
10. Size of cuts 1/2 x 4" holes	_Number cuts per foot 8 holes per foot	
11. If screen was installed: Longthft. Diamin, Ty	/P*	
17 Mathed of construction drillod	· · ·	
	drillad, dug, driven, bored, jettod, atc,	•
13. Date completed Saptambar, 1920 Month Year	Deepened Month Ye	
14. Depth to water when drilled	. #.	
It flowing well, to state.	4 Day of December 5 1945	
If flowing well, so state.		
16. Describe point from which depth measurements were made, and give s	ea-level elevation if available. Dumphouse floor - 1,1	55.6
17 If flowing well state method of flow service		
Tr. It howing week state intrinou of flow regulation		
DISCHA	KGE DATA	
18. Well dischargegel, per mia, or cu. 4	ft. per sec. or miner's inches.	
19. Method of discharge measurement WO1r	n aridian ausant mater ate	
20. Drawdown 61.71 ft.		
21 Annual discharge in see fast as makes of house summade uses 781	8 star by 1648 868 st	
an a irrigation	an. or	
22. Purpose of use		hr
23 Place of user Two Rea Section		hr
(See 24)	Legel subdivision	hr
[See 24] 	Legel subdivision Acres	hr
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[See 24] [See 24] 	Legal subdivision Acres Legal subdivision Acres Company, omit 23 and give name of project.	hr
[See 24] .Twp	Legal subdivision Acres Legal subdivision Acres r Campany, omit 23 and give name of project. F WATER USERS * ASSOCIATION of Project	hr
[See 24] .Twp	Legal subdivision Acres Legal subdivision Acres r Company, omit 23 and give name of project. F WATER USERS' ASSOCIATION of Project (A-2-3) 22 ddd	hz
[See 24] _TwpRgeSoction 24. If well is pert of irrigation system of irrigation District, Association or <u>SALT RIVER VALLES</u> Name of	Legal subdivision Acres Legal subdivision Acres r Company, omit 23 and give name of project. <u>F WATER USERS' ASSOCIATION</u> of Project (A-2-3) 22 ddd DO NOT WRITE IN THIS SPACE	
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[See 24] RgsSoction 24. If well is pert of irrigation system of irrigation District, Association of SALT RIVER VALLES Name of EQUIPMENT DATA 25. Kind of pumpturbine turbine, centrifugel, etc.	Legal subdivision Legal subdivision Acres Legal subdivision r Company, omit 23 and give name of project. F WATER USERS' ASSOCIATION of Project (A-2-3) 22 ddd DO NOT WRITE IN THIS SPACE OFFICE RECORD Received 2-4-46 by 11 Filed 2-4-46 by 11 Filed 2-4-46	
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From (feet) Ta (feet) . Description of formation material Ē , 0 7 Surface soil 7 29 Caliche and clay 29 . 62 Sand and Gravel 62 128 Caliche ÷.___ Δ. 128 131 Gravel 131 145 Caliche . 145 153 Gravel 153 171 Calicha ۰... 173 171 Sand 173 182 Gravel : . • ` 182 212 Clay 212 234 Gravel 234 246 Cemented sand and gravel 20 -.... r · . - --. . ÷ .

Indicate depth at which water was first encountered, and the depth and thickness of water bearing bads. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

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I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief. SALT RIVER VALEY WATER USERS' ASSOCIATION

BY DA ALANSON DEGELERIGA CENERAL BEBERINTENDENT AND CHIEF ENGINEER PHOENIX, ARIZONA Address

Data FEBRUARY 1, 1946

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16E-8N

DEPARTMENT OF WATER RESOURCES 99 EAST VIRGINIA AVENUE PHOENIX, ARIZONA 85004

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REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING

PRINT OR TYPE - FILE IN DUPLICATE

		~ /	
	ADIZONA	FOR OFFICE USE	ONLY
	DEPT OF	CISTRATION NO 60	7715
REGISTRATION FEE (CHECK ONE)		A(2-3)22	2 ddd
EXEMPT WELL (NO CHARGE)	'82 MAY 18 A10 :15	ED 5 -18 - 82 -	10:15a
NON-EXEMPT WELL — \$10.00 K□		(DATE)	(TIME)
	- WATER IN	\sim	
	REQUERTE CAN	noen	<u>.</u>
Name of Registrant:	1 Improvement and Powe	or District	
	Phoenix	Arizona	85001
(Address)	(City)	(State)	(Zip)
File and/or Control Number under o	revious groundwater law:		
	35 None		
(File Number)	(Control Number)		
a. The well is located within the	SE 1/2 SE 1/2 S	E ¼ Section 22	2
of Township 2N	N/S. Range 3E	E/W G & S	BB & M in the
County of Maricopa	;	, _ u u	
b If in a subdivision. Name of av	bdivision		
5 1	s irrigated from well <u>SRP</u>	<u>member la</u> nds	
Owner of land on which well is loca	s irrigated from well <u>SRP</u> ated. If same as Item 1,	<u>member la</u> nds check this box 🛛	
Owner of land on which well is loca	s irrigated from well <u>SRP</u> ated. If same as Item 1,	<u>member la</u> nds check this box 🛛	
Owner of land on which well is loca	s irrigated from well <u>SRP</u> ated. If same as Item 1, (City)	<u>member la</u> nds check this box [X] (State)	(Zip)
Owner of land on which well is loca (Address) Well data (If data not available, writ	s irrigated from well <u>SRP</u> ated. If same as Item 1, (City) e N/A)	<u>member la</u> nds check this box 🛛	(Zip)
Owner of land on which well is loca (Address) Well data (If data not available, writ a. Depth of Well246	ated. If same as Item 1, (City)	<u>member lands</u> check this box 🛛 (State) 	(Zip)
Owner of land on which well is loca (Address) Well data (If data not available, writ a. Depth of Well246 b. Diameter of casing12	s irrigated from well <u>SRP</u> ated. If same as Item 1, (City) e N/A)	<u>member la</u> nds check this box [X] (State) _ feet _ inches	(Zip)
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Owner of land on which well is loca (Address) Well data (If data not available, writ a. Depth of Well246_ b. Diameter of casing246_ c. Depth of casing246_ d. Type of casing2 a double	s irrigated from well <u>SRP</u> ated. If same as Item 1, (City) e N/A) e stovepipe	<u>member lands</u> check this box [X] (State) _ feet _ inches _ feet 	(Zip)
Owner of land on which well is loca (Address) Well data (If data not available, writ a. Depth of Well 246 b. Diameter of casing 12 c. Depth of casing 246 d. Type of casing 12 ga double e. Maximum pump capacity	s irrigated from well <u>SRP</u> ated. If same as Item 1, (City) e N/A) e stovepipe 760		(Zip)
Owner of land on which well is loca (Address) Well data (If data not available, writ a. Depth of Well246 b. Diameter of casing246 c. Depth of casing246 d. Type of casing12 ga double e. Maximum pump capacity f. Depth to water70 static	s irrigated from well <u>SRP</u> ated. If same as Item 1, (City) e N/A) s stovepipe 760 c (Jan. 1982)		(Zip)
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SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

- 1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.
- 2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.
- 3. No registration fee is required for Exempt Wells. A \$10.00 registration fee must accompany registration forms for all Non-Exempt Wells.
- 4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.
- 5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

- 1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.
- 2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.
- 3. a. Fill in the Section, Township and Range in all cases if it is available.
 - b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.
- 4. Show all purposes for which the water is used.

7.

- 5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well. \$b + 1b + 1b = 1
- 6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.
 - **Vert** $\mathbf{v} \in [0, \infty]$ Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.
- Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.
- 9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

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STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES WATER RIGHTS ADMINISTRATION 99 EAST VIRGINIA PHOENIX, ARIZONA 85004

RECEIPT

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APPENDIX G

RESPONSIVENESS SUMMARY



RESPONSIVENESS SUMMARY

FINAL REMEDIAL INVESTIGATION REPORT

40th Street and Osborn road WQARF Registry site Phoenix, Arizona



Prepared By:

Arizona Department of Environmental Quality Remedial Projects Unit

June 29, 2020

RESPONSIVENESS SUMMARY

REMEDIAL INVESTIGATION REPORT 40th Street and Osborn Road WQARF Site Phoenix, Arizona

INTRODUCTION

Pursuant to the requirements of Arizona Administrative Code (ACC) R-18-16406(H) the Arizona Department of Environmental Quality (ADEQ) has prepared this comprehensive responsiveness summary for comments received on the *Draft Remedial Investigation Report, East Central Phoenix, 40th Street and Osborn Road WQARF Site, Phoenix, Arizona* dated June 27, 2019 (Report). The Report documents investigations conducted to date at the East Central Phoenix (ECP) 40th Street and Osborn Road (40th & Osborn) Water Quality Assurance Revolving Fund (WQARF) Registry Site (Site). The Report was made available for public review and comment on April 02, 2020 for 60 days ending on June 01, 2020. A public solicitation of Remedial Objectives was held by virtual meeting on May 28, 2020. The purpose of the meeting was to receive oral and/or written comments on the Draft RI report and to solicit/comment on proposed remedial objectives. ADEQ received no oral or written comments from meeting attendees. Subsequent to the meeting, ADEQ received written comments to the Report from the City of Phoenix and the Salt River Project. The following sections include the text of comments followed by a response from ADEQ to address each comment. Copies of the written comment letters received are included in Attachment A.

Copies of written com ments and proposed remedi al objectives submitted by the public are contained in the attachment following the summaries below.

Oral Comments

None received.

Written Comments

Julie Riemenschneider, Environmental Programs Coordinator for the City of Phoenix

Comments regarding the Report were received in a letter via email from Julie Riemenschneider with the City of Phoenix to ADEQ dated May 15, 2020 (Attachement A) and are as follows:

General Comments:

1. Cleanup of the groundwater at this site is critical to the City and is important for the future of Phoenix. This water will be needed in the future should drought conditions continue or worsen.

ADEQ Response: Comment noted. No change made to Final RI Report document in response.

2. The City agrees that the additional wells are needed to define the lateral extent and looks forward to seeing the data from the planned monitor wells BMW-20D and BMW-21D once drilled, installed and sampled.

ADEQ Response: Comment noted. No change made to Final RI Report document in response.

3. ADEQ's statement "for the purpose of the RI and evaluation of the FS, the southeastern extent of the Site PCE plume is adequately defined." is ambiguous. The City would request the boundaries of the plume be defined to the Aquifer Water Quality Standards (AWQS) especially in the downgradient direction. This would require an additional well downgradient of BMW-15D. Currently PCE at downgradient well BMW-15 is 10 micrograms per liter (ug/l) at a depth of 228 feet below ground surface (ft bgs). The City noted the two upgradient wells from BMW-15D PCE is 5.9 ug/l (BMW-14D) and 2.0 ug/L (BMW-10D) at an approximate depth of 225 feet; yet in the heart of the plume PCE ranges between 90 ug/L (at 220 ft bgs) to 45 ug/l (at 160 ft bgs). This may indicate that slugs of contamination are moving through the aquifer. Defining the boundary to the AWQS will aid in the understanding of how far the plume has migrated. An additional downgradient well could be installed during the FS as ADEQ is proposing to do with BMW-20D and BMW-21D.

ADEQ Response:

ADEQ understands the City of Phoenix's concerns regarding the definition of the downgradient boundary of the plume. The need for additional wells will be evaluated during the development of the remedy for the Site.

Please note, well BMW-16D is the most downgradient well at the site and is also located downgradient from wells BMW-14D and BMW-10, whereas well BMW-15D is upgradient from these wells. For the purpose of this response, ADEQ assumes that City of Phoenix has mistakenly identified well BMW-15D as the most downgradient well at the site.

4. ADEQ indicates the two shallow PCE plumes are separate and not part of this RI for ECP 40th street and Osborn WQARF site. The City understands that ADEQ is in the process of assessing these shallow plumes and identifying the sources. Per the May 7, 2020, conversation with Lisa Kowalczyk, the City understands the plumes are being assessed by a different department at ADEQ. Once additional information is available, ADEQ will determine what department will be addressing the plumes. As discussed during the phone call, the City would request that ADEQ provide more discussion of this process in the final RI.

ADEQ Response: ADEQ understands the City of Phoenix's concerns regarding the assessment and source identification for the two shallow plumes identified during the course of the remedial investigation conducted at the Site. ADEQ maintains that these two shallow plumes are not co-mingled or connected to the deeper plume already under investigation at the Site, and for which the site was included on the WQARF registry.

ADEQ's Hazardous Waste Unit issued Notice of Violations (NOV) to R&M Cleaners/Astro Dry Cleaners on January 22, 2019 and February 4, 2019. R&M Cleaners/Astro Dry Cleaners are located at 2919 N 32nd St Phoenix, AZ 85018, within the area of the two shallow plumes. On August 01, 2019, ADEQ closed these Notice of Violations, based upon its determination that R&M Cleaners/Astro Dry Cleaners has met the *Documenting Compliance* provisions of the NOV.

While awaiting the outcome of the Hazardous Waste Unit's inspections and enforcement actions at R&M Cleaners/Astro Dry Cleaners, this area was maintained as a "pending" Preliminary Investigation (PI) site. PI site project managers within the Remedial Inspections Unit will now assess the results of the Hazardous Waste Unit's inspection and enforcement actions within this area, including the results of sampling conducted during the course of these activities, and move forward with a Preliminary Investigation of the site in accordance with A.A.C. Title 18 Chapter 16. Therefore, barring additional inspections, investigations, or enforcement actions by the ADEQ Hazardous Waste Unit in this area, the assessment of these shallow plumes will now be handled exclusively by the Remedial Projects Unit within ADEQ.

Specifics Comments:

5. Section 3.1.1 Site PCE Plume, 3rd paragraph, A total of "X#" monitoring wells appears to be a typo and should have a numerical number in place of the "X#".

ADEQ Response: Comment noted. This typographic error will be corrected in the Final RI Report, with a correct numerical value specified. Sentence moved to Section 3.1.

6. Section 5.4.2 - The sentence "However, high increases in consumption coupled with severe reductions in surface water supplies could deplete these reserves by 2020." is inaccurate. The City requests that you please replace with "However, high increases in consumption coupled with severe reductions in surface water supplies could require that COP begin to tap its reserves in groundwater by 2025."

ADEQ Response: Comment noted. The language will be replaced in the Final RI Report as provided here by the City of Phoenix.

7. In addition, in Appendix F, figure 9 is taken from the City of Phoenix 2011 Water Resource Plan and is outdated. The City is currently working on updating this Water Resource Plan. The City will provide ADEQ with a copy once finalized.

ADEQ Response: Comment noted. As new figures have not been provided by the City of Phoenix at this time, Figure 9 in Appendix F of the Draft RI Report, taken from the current City of Phoenix 2011 Water Resources Plan, will remain in the Final RI Report for the site. However, once the updated City of Phoenix Water Resources Plan is received, ADEQ will utilize figures and information from the most recent plan in future reports.

8. In reference to the City's future water supply, please refer to the land and water use questionnaire completed in January of 2019 which states "The Bureau of Reclamation (BOR) who manages the lower Colorado River operations has indicated in their 24-month study report issued August 15, 2018, that shortages on the lower Colorado River could begin as soon as 2020 with deeper cuts predicted over time. Because of this possibility, the City views all water in our service boundary as a potential water supply source in the event that CAP allocations are curtailed during a drought declaration."

ADEQ Response: Comment noted. No change made to Final RI Report document in response.

Andrea Martinez, Water Quality & Waste Management Services, Manager for the Salt River Project

Comments regarding the Report were received in a letter via email from Karis Nelson with the Salt River Project to ADEQ dated June 01, 2020 (Attachement A) and are as follows:

1. Section 4.5 – Conceptual Site Model

The Report indicates the groundwater velocity ranges between 0.2 to 0.3 feet per day (ft/day), based on a range of measured hydraulic conductivity values (21 to 30 ft/day) and a hydraulic gradient of 0.01 ft/ft. The Report subsequently indicates the ambient groundwater velocities (0.2 to 0.3 ft/day) are lower than the estimated plume migration rate, determined by dividing the plume extent (10,660 feet) by the elapsed time (35 years), equaling about 305 feet per year (0.83 ft/day). The Report explains this discrepancy by stating that the average groundwater velocity over the last 35 years was greater due to steeper gradients prior to canal lining and from continued downgradient groundwater pumping.

It appears the above groundwater velocity estimation does not account for effective porosity. This could result in the perceived discrepancy. Using an assumed effective porosity of 0.25 and the aquifer parameters for hydraulic conductivity and hydraulic gradient as reported above, the estimated groundwater velocity ranges between 0.84 to 1.2 ft/day, reasonably matching the estimated plume migration rate.

ADEQ Response:

ADEQ agrees with this comment. Groundwater velocities were incorrectly calculated and provided in the Draft RI Report without the inclusion of effective porosity. This mistake has been corrected and the groundwater velocity, and text describing the estimation of the groundwater velocity, will be revised for the Final RI Report. ADEQ also maintains that the revised groundwater velocity estimate, including effective porosity, indicates that the plume appears to have achieved a state of equilibrium.

2. Section 5.3.1.1 – Current Water Use for SRP

The Report states that SRP delivers nearly a million acre-feet of water each year. SRP would like to clarify that deliveries are approximately 800,000 acre-feet annually.

ADEQ Response: Comment noted. The water delivery amounts will be revised in the Final RI Report as specified in the comment provided by SRP.

3. Section 5.4.1 – Future Water Use for SRP

The Report states that SRP groundwater wells will transition from irrigation to municipal use over the next 100 years. SRP would like to emphasize that the transition in end-use for well 17.9E-7.5N and others in the area will occur by late next year (2021), depending on the start-up date of the Goodyear Water Treatment Plant. SRP believes it is imperative that ADEQ implement remedial actions in a timely manner to reduce PCE levels at this Site to ensure the reliable operation of SRP well 17.9E-7.5N in the future.

ADEQ Response:

SRP and ADEQ discussed SRP's concerns regarding the impending transition to municipal use of groundwater at the Site by phone on May 29, 2020. ADEQ committed to ensuring a contingency measure of wellhead treatment would be included in the remedial strategy at this Site for SRP well 17.9E-7.5N. ADEQ looks forward to continuing to work with SRP to ensure the reliable operation of SRP well 17.9E-7.5N in the future.

ATTACHMENT A

RESPONSIVENESS SUMMARY – WRITTEN COMMENTS

FINAL DRAFT REMEDIAL INVESTIGATION REPORT 40th Street and Osborn Road WQARF Registry site Phoenix, Arizona

The comment letters are attached.



Andrea Martinez, Water Quality & Waste Management Services, Manager PAB 359 | P.O. Box 52025 Phoenix, AZ 85072-2025 P: (602) 236-2618 | srpnet.com Andrea.Martinez@srpnet.com

June 1, 2020

Via Electronic Mail

To: Lisa Kowlczyk Arizona Department of Environmental Quality Waste Programs Division 1110 W. Washington Street Email: kowalczyk.lisa@azdeq.gov

Reference: Draft Remedial Investigation Report – East Central Phoenix, 40th Street and Osborn Road Water Quality Assurance Revolving Fund Site, Phoenix, Arizona

RE: Salt River Project Comments – Draft Remedial Investigation Report, 40th Street and Osborn Road Water Quality Assurance Revolving Fund Site

Dear Ms. Kowlczyk:

Salt River Project Agricultural Improvement and Power District (SRP) appreciates the opportunity to provide comments on the Draft Remedial Investigation Report dated March 24, 2020 (Report) for the East Central Phoenix 40th Street and Osborn Road Water Quality Assurance Revolving Fund site in Phoenix, Arizona (Site). SRP has reviewed the Report and provides the following comments for consideration.

Section 2.3 – Surface Water

The Report indicates that surface water used within the Site for residential irrigation comes from the Salt River via the Arizona Canal, Grand Canal, laterals, and pumping of groundwater wells. SRP would like to clarify that water sources delivered to customers are typically a mix of Salt River, Verde River, and Central Arizona Project (CAP) water. Groundwater is pumped as needed to supplement these surface water sources. Irrigation deliveries within the Site occur via laterals off the Arizona Canal.

Section 4.5 – Conceptual Site Model

The Report indicates the groundwater velocity ranges between 0.2 to 0.3 feet per day (ft/day), based on a range of measured hydraulic conductivity values (21 to 30 ft/day) and a hydraulic gradient of 0.01 ft/ft. The Report subsequently indicates the ambient groundwater velocities (0.2 to 0.3 ft/day) are lower than the estimated plume migration rate, determined by dividing the plume extent (10,660 feet) by the elapsed time (35 years), equaling about 305 feet per year (0.83 ft/day). The Report explains this discrepancy by stating that the average groundwater velocity over the last 35 years was greater due to steeper gradients prior to canal lining and from continued downgradient groundwater pumping.

It appears the above groundwater velocity estimation does not account for effective porosity. This could result in the perceived discrepancy. Using an assumed effective porosity of 0.25 and the aquifer parameters for hydraulic conductivity and hydraulic gradient as reported above, the estimated groundwater velocity ranges between 0.84 to 1.2 ft/day, reasonably matching the estimated plume migration rate.

Section 5.3.1.1 – Current Water Use for SRP

The Report states that SRP delivers nearly a million acre-feet of water each year. SRP would like to clarify that deliveries are approximately 800,000 acre-feet annually.

Section 5.4.1 – Future Water Use for SRP

The Report states that SRP groundwater wells will transition from irrigation to municipal use over the next 100 years. SRP would like to emphasize that the transition in end-use for well 17.9E-7.5N and others in the area will occur by late next year (2021), depending on the start-up date of the Goodyear Water Treatment Plant. SRP believes it is imperative that ADEQ implement remedial actions in a timely manner to reduce PCE levels at this Site to ensure the reliable operation of SRP well 17.9E-7.5N in the future.

SRP appreciates the opportunity to provide these comments to ADEQ. If you have any questions, please call me at 602-236-2618.

Sincerely,

Andrea Martinez Water Quality & Waste Management Services, Manager

cc: Robert Pane (SRP) Karis Nelson (SRP)




May 15, 2020

Arizona Department of Environmental Quality Waste Programs Division Ms. Lisa Kowalczyk 1110 West Washington St Phoenix, Arizona 85007

Re: Comments regarding the Draft Remedial Investigation Report (RI) for the East Central Phoenix 40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF) prepared by Wood for the Arizona Department of Environmental Quality (ADEQ) on March 24, 2020.

Dear Ms. Kowalczyk,

The City of Phoenix (City) has reviewed the above referenced draft RI for the East Central Phoenix (ECP) 40th Street and Osborn Road WQARF site. The City appreciates the hard work and detail the agency has devoted to the investigation and the report.

General Comments:

Cleanup of the groundwater at this site is critical to the City and is important for the future of Phoenix. This water will be needed in the future should drought conditions continue or worsen.

The City agrees that the additional wells are needed to define the lateral extent and looks forward to seeing the data from the planned monitor wells BMW-20D and BMW-21D once drilled, installed and sampled.

ADEQ's statement "for the purpose of the RI and evaluation of the FS, the southeastern extent of the Site PCE plume is adequately defined." is ambiguous. The City would request the boundaries of the plume be defined to the Aquifer Water Quality Standards (AWQS) especially in the downgradient direction. This would require an additional well downgradient of BMW-15D. Currently PCE at downgradient well BMW-15 is 10 micrograms per liter (ug/L) at a depth of 228 feet below ground surface (ft bgs). The City noted the two upgradient wells from BMW-15D PCE is 5.9 ug/l (BMW-14D) and 2.0 ug/L (BMW-10D) at an approximate depth of 225 feet; yet in the heart of the plume PCE ranges between 90 ug/L (at 220 ft bgs) to 45 ug/l (at 160 ft bgs). This may indicate that slugs of contamination are moving through the aquifer. Defining the boundary to the AWQS will aid in the understanding of how far the plume has migrated. An additional downgradient well could be installed during the FS as ADEQ is proposing to do with BMW-20D and BMW-21D.

ADEQ indicates the two shallow PCE plumes are separate and not part of this RI for ECP 40th street and Osborn WQARF site. The City understands that ADEQ is in the process of assessing these shallow plumes and identifying the sources. Per the May 7, 2020, conversation with Lisa Kowalczyk, the City understands the plumes are being assessed by a different department at ADEQ. Once additional information is available, ADEQ will determine what department will be addressing the plumes. As discussed during the phone call, the City would request that ADEQ provide more discussion of this process in the final RI.

Specifics Comments:

Section 3.1.1 Site PCE Plume, 3rd paragraph, A total of "X#" monitoring wells appears to be a typo and should have a numerical number in place of the "X#".

Section 5.4.2 – The sentence "However, high increases in consumption coupled with severe reductions in surface water supplies could deplete these reserves by 2020." is inaccurate. The City requests that you please replace with "However, high increases in consumption coupled with severe reductions in surface water supplies could require that COP begin to tap its reserves in groundwater by 2025." Also, in Appendix F, figure 9 is taken from the City of Phoenix 2011 Water Resource Plan and is outdated. The City is currently working on updating this Water Resource Plan. The City will provide ADEQ with a copy once finalized.

In reference to the City's future water supply, please refer to the land and water use questionnaire completed in January of 2019 which states "The Bureau of Reclamation (BOR) who manages the Lower Colorado River operations has indicated in their 24-month study report issued August 15, 2018, that shortages on the Lower Colorado River could begin as soon as 2020 with deeper cuts predicted over time. Because of this possibility, the City views all water in our service boundary as a potential water supply source in the event that CAP allocations are curtailed during a drought declaration."

The City looks forward to working with ADEQ as you finalize this RI and continue through the WQARF process. If ADEQ would like to discuss these comments, please contact me at 602-256-5681.

Sincerely. Wie Riemenhica

Julie Riemenschneider Environmental Programs Coordinator Office of Environmental Programs, City of Phoenix

C: Tina LePage, ADEQ (electronic copy) Nancy Allen, OEP (electronic copy) Cynthia Campbell WSD (electronic copy) Erin Andres (electronic copy) David Gordon (electronic copy)



APPENDIX H

REMEDIAL OBJECTIVES REPORT



FINAL REMEDIAL OBJECTIVES REPORT

40th Street and Osborn Road Water Quality Assurance Revolving Fund Registry Site Phoenix, Arizona



July 14, 2020

Arizona Department of Environmental Quality Remedial Projects Unit 1110 West Washington Phoenix, Arizona 85007

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LIST OF ABBREVIATIONS & ACRONYMS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AMA	Active Management Area
A.R.S.	Arizona Revised Statutes
AWQS	Aquifer Water Quality Standard
COC	Contaminants of Concern
COP	City of Phoenix
ERA	Early Response Action
FS	Feasibility Study
GPL	Groundwater Protection Level(s)
LWUS	Land and Water Use Study
PCE	Tetrachloroethene
RO	Remedial Objective(s)
RI	Remedial Investigation
Site	40th Street and Osborn Road WQARF Site
SRL	Soil Remediation Level(s)
SRP	Salt River Project
SVE	Soil Vapor Extraction
VOCs	Volatile Organic Compounds
Wood	Wood Environment & Infrastructure Solutions, Inc.
WQARF	Water Quality Assurance Revolving Fund

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Proposed Remedial Objectives (ROs) Report for the 40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF) Registry Site (Site) to meet requirements established under Arizona Administrative Code (A.A.C.) R18-16-406.

The Site is located in east central Phoenix. The Site is bound to the north by East Fairmont Avenue, to the east by 42nd Street, to the south by East Hubbell Street, and to the west by 25th Street. The contaminant of concern (COC) at the Site is tetrachloroethene (PCE).

This report was prepared using the data obtained from the Land and Water Use Study (LWUS) prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood). The LWUS was prepared using the Land and Water Use Questionnaires completed by the City of Phoenix (COP) and the Salt River Project (SRP).

ROs are established for the current and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be impacted by a release of a hazardous substance. As defined by A.A.C. R18-16-406(D), the reasonably foreseeable uses of land are those likely to occur at the site and the reasonably foreseeable uses of water at the site are those likely to occur within one hundred years unless a longer time period is shown to be reasonable based on site-specific information.

Reasonably foreseeable uses are those likely to occur, based on information provided by water providers, well owners, land owners, government agencies, and others. Not every use identified in the LWUS will have a corresponding RO. Uses identified in the LWUS may or may not be addressed based on information gathered during the public involvement process, limitations of WQARF, and whether the use is reasonably foreseeable. Ecological uses at the Site are not addressed herein because the remedial investigation has determined that there are no identified ecological receptors as defined by A.A.C. 18-7-201.

The ROs must be stated in the following terms: (1) protecting against the loss or impairment of each use; (2) restoring, replacing, or otherwise providing for each use; (3) when action is needed to protect or provide for the use; and (4) how long action is needed to protect or provide for the use.

The ROs selected for the Site will be evaluated during the Feasibility Study (FS) phase of the WQARF process. The FS will propose a remedial strategy for the Site. A remedial strategy is one or a combination of six general strategies identified in Paragraph B.4 of Arizona Revised Statutes (A.R.S.) §49-282-06(B)(4). These strategies include: plume remediation, physical containment, controlled migration, source control, monitoring, and no action. A.R.S. §49-282.06(B)(4)(a) indicates that for remediation of soil, the selected remedial action shall be consistent with the soil remediation standards adopted pursuant to A.R.S. §49-152. A remedial measure is a specific action taken in conjunction with remedial strategies to achieve one or more ROs (for example, well replacement, well modification, water treatment, water supply replacement, and engineering controls.)

Written comments on the proposed ROs were accepted for a period of 30-days following the public notice. The comment period on the proposed ROs ended on July 6, 2020.

Land and Water Use Questionnaires were mailed to the COP and SRP to obtain information regarding current and future uses land and groundwater at the Site. The COP and SRP completed the questionnaires and returned them to ADEQ. The following sections summarize the current and foreseeable land and groundwater uses at the Site and present the proposed ROs for the Site.

2.0 REMEDIAL OBJECTIVES FOR LAND USE

The Site is located within a mixed residential and commercial area. The current COP zoning maps indicate the Site is zoned as residential (multiple family residence, residential office, and single-family residence) and commercial (neighborhood retail, intermediate commercial, and restricted commercial). The COP indicated there are no current foreseeable plans to alter the current land use at or near the Site.

2.1 Summary of Impacts to Current and Reasonably Foreseeable Land Use

ROs for land use are typically established for those properties known to be contaminated with hazardous substances above a Soil Remediation Level (SRL) or a risk-based level. A source facility for the Site PCE plume was not identified. Therefore, no soil nor vapor intrusion investigation was performed at the Site.

2.2 Soil Remedial Objective

A potential source for the Site PCE concentrations has not been identified. Therefore, no soil nor soil vapor investigation was conducted at the Site. Therefore, no soil remedial objective is established for the Site.

3.0 REMEDIAL OBJECTIVES FOR GROUNDWATER USE

The groundwater use portion of the LWUS Report is a summary of information gathered from the Arizona Department of Water Resources (ADWR), water providers, and municipalities. The water providers at the Site are the COP and SRP.

The Site lies within the Phoenix Active Management Area (AMA), an area where groundwater use is controlled and regulated. 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.

ADWR records indicate there are fourteen (14) non-exempt and four (4) exempt water supply wells located within approximately one mile of the PCE plume boundary. The non-exempt wells include: (a) twelve (12) wells owned and operated by SRP; (b) one well owned by COP; and (c) one well owned by Maricopa County Flood Control District. According to ADWR, the COP owned well was used to fill the swimming pool at Perry Park; however, it is currently inactive. The well owned by Maricopa County was used for de-watering purposes. The intended use of the four exempt wells is domestic irrigation. There are no grandfathered rights in the vicinity of the PCE plume boundary. The COP and SRP have service area rights in the vicinity of the Site, however, only SRP is currently pumping groundwater in the vicinity of the PCE plume boundary. The current use of water at the Site is for irrigation water. The future use of groundwater at the Site includes irrigation and municipal (potable supply).

3.1 Summary of Impacts to Current and Reasonably Foreseeable Groundwater Use

The COP has one groundwater well located within one mile of the PCE groundwater plume. The COP indicated that it may install additional municipal wells at the Site in the future. The groundwater at the Site is currently contaminated with PCE at concentrations that exceed the Aquifer Water Quality Standard (AWQS). The current groundwater contamination would restrict the use of the groundwater for municipal purposes.

SRP operates eleven irrigation wells located within one mile of the PCE groundwater plume. The most recent groundwater data collected from these SRP wells indicated that PCE is currently below the AWQS in each well. SRP operates these wells intermittently and plans to continue pumping them intermittently, as needed, to provide irrigation water. SRP has no plans to eliminate any of these wells from their system. SRP anticipates these wells will remain in use over the next 100 years. SRP anticipates that these and other groundwater supply wells located in the vicinity of the Site will likely transition from irrigation to municipal service (potable supply) over the next 100 years. SRP may also need to install additional groundwater supply wells at the Site or in the vicinity of the Site.

3.2 Groundwater Remedial Objective

The current use of water at the Site is for irrigation water. The future use of groundwater at the Site includes irrigation and municipal (potable supply). The groundwater at the Site is currently contaminated with PCE at concentrations that exceed the AWQS. Thus, the ROs for groundwater use at the Site are as follows:

Irrigation Use

Protect against the loss or impairment of irrigation water threatened by the contaminants of concern within the 40th Street and Osborn Road WQARF Site. Where protection cannot be achieved in a reasonable, necessary, or cost-effective manner; restore, replace, or otherwise provide for irrigation water that is lost or impaired by the contaminants of concern at or origination from the 40th Street and Osborn Road WQARF Site. Action is needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the 40th Street and Osborn Road WQARF Site does not prohibit or limit the designated use of groundwater within or outside the current site boundaries.

Potable Use

Protect against the loss or impairment of potable water threatened by the contaminants of concern within the 40th Street and Osborn Road WQARF Site. Where protection cannot be achieved in a reasonable, necessary, or cost-effective manner; restore, replace, or otherwise provide for potable water that is lost or impaired by the contaminants of concern at or originating from the 40th Street and Osborn Road WQARF Site. Action is needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the 40th Street and Osborn Road WQARF Site does not prohibit or limit the designated use of groundwater within or outside the current site boundaries.

4.0 REMEDIAL OBJECTIVES FOR SURFACE WATER USE

Surface water at the Site is currently used for residential irrigation. SRP provides the irrigation water. The water comes to the Site from the Arizona and Grand Canals via SRP lateral canals. The lateral canals also receive water from nearby SRP irrigation wells.

4.1 Summary of Current and Reasonably Foreseeable Surface Water Use

There are currently no known impacts from the Site to the water in the SRP canals. SRP anticipates that a drinking water plant will be built on the Grand Canal within the next 100 years and the SRP wells near the Site could provide water to that plant. The current and future source of the water in the SRP canals that originates from the Site is groundwater pumped by SRP wells.

4.2 Surface Water Remedial Objective

Current surface water use at the Site is irrigation from SRP canals. The water in the SRP canals is supplemented with groundwater pumped from SRP wells at the Site. The future use of the surface water in the SRP canals includes irrigation and drinking water. The current and future source of the water in the SRP canals originating from the Site is groundwater pumped by SRP wells. Thus, ROs for surface water use are not needed because the ROs for groundwater use for the water pumped into the canals are applicable.

Attachment A

REMEDIAL OBJECTIVES RESPONSIVENESS SUMMARY

COMMENTS RECEIVED FROM ORAL AND WRITTEN SOLICITATIONS FOR PROPOSED REMEDIAL OBJECTIVES

As per A.A.C. R18-16-406(I), a public meeting was held via teleconference on May 28, 2020 during the 45-day to 90-day public solicitation period for the ROs. The purpose of the meeting was to solicit and consider proposed ROs for the East Central Phoenix 40th Street and Osborn Road WQARF Site. The meeting gave a public forum for oral and written comments to be submitted. The comments received are summarized below with ADEQ responses. Copies of written comments and proposed remedial objectives submitted by the public are contained in the attachment following the summaries below.

Oral Comments: None Received.

Written Comments

Julie Riemenschneider, City of Phoenix (Comments dated June 25, 2020)

The City of Phoenix (City) agrees with the proposed ROs that ADEQ has written for irrigation and potable groundwater.

The RO for groundwater indicates that ADEQ acknowledges the important resource groundwater is for the City and the future of our residents.

ADEQ's Response: ADEQ thanks the City for their review of the report and comments provided.

Andrea Martinez, Salt River Project (Comments dated July 06, 2020)

As ADEQ is aware, SRP entered into an Agreement with the City of Goodyear to wheel Goodyear's surface water supplies to the future Goodyear Water Treatment plant (WTP) via the Grand Canal and its associated laterals. It is our current understanding that the Goodyear WTP is anticipated to go online by December 31, 2021. As a result, SRP production wells that pump groundwater to the Grand Canal (either directly or via laterals) will transition from irrigation use to potable use within the next 18 months.

With the anticipated end-use change, SRP appreciates the proposed groundwater ROs for irrigation use and potable use. While we believe that the proposed groundwater ROs provide an adequate baseline level of protection to SRP assets, we encourage ADEQ to consider the following modifications (italicized) to the irrigation use and potable use groundwater ROs:

Protect against the loss or impairment of [irrigation/potable] water threatened by the contaminants of concern *within or near* the 40th Street and Osborn Road WQARF Site. Where protection cannot be achieved in a reasonable, necessary, or cost-effective manner; restore, replace, or otherwise provide for [irrigation/potable] water that is lost or impaired by the contaminants of concern at *or originating from* the 40th Street and Osborn Road WQARF Site. Action is needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the 40th Street and Osborn Road WQARF Site does not prohibit or limit the designated use of groundwater within *or outside the current site boundaries*.

The proposed modifications reflect our recent conversation with ADEQ. SRP has an interest in including groundwater ROs for wells that are located down-gradient of contamination plumes (within one mile), which are not included in the current Site boundary, in addition to adopting ROs for groundwater wells located within the Site boundary. Though we understand that ROs are traditionally limited to site boundaries, for this Site and other WQARF sites in the area we are seeking this safeguard to ensure that any potential threats are proactively addressed to ensure the potable use of groundwater. It is our concern that wells located outside of current site boundaries could be potentially threatened/impacted in the future, leaving us unable to maintain our groundwater production and delivery agreements.

In addition, the recent deregulation of canals due to the updated definition of Waters of the United States is prompting SRP to seek ways to protect our canal systems. Although surface water ROs were not proposed for the Site because "...ROs for groundwater use for the water pumped into the canals are applicable," SRP would be agreeable to the addition of 'contingent' surface water ROs. Surface water ROs would offer protections from groundwater wells that are not yet covered by groundwater ROs, ensuring that contamination from or near the Site will not impact raw potable water deliveries to the Goodyear WTP.

<u>ADEQ's Response</u>: ADEQ thanks SRP for their review of the report and comments provided. With regard to the requests by SRP:

ADEQ partially accepts the suggested language change provided by SRP to the irrigation and potable use groundwater ROs as follows (italicized modifications remain as specified in SRP comment):

Protect against the loss or impairment of [irrigation/potable] water threatened by the contaminants of concern *within* the 40th Street and Osborn Road WQARF Site. Where protection cannot be achieved in a reasonable, necessary, or cost-effective manner; restore, replace, or otherwise provide for [irrigation/potable] water that is lost or impaired by the contaminants of concern at *or originating from* the 40th Street and Osborn Road WQARF Site. Action is needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the 40th Street and Osborn Road WQARF Site does not prohibit or limit the designated use of groundwater within *or outside the current site boundaries*. The addition of '*or near*' as suggested by SRP is not retained. Contamination identified outside of the boundaries of the Site will be evaluated through the Preliminary Investigation (PI) process in accordance with A.A.C. Title 18 Chapter 16. This preliminary investigation may indeed identify that contamination identified outside of the existing boundary of the Site does originate from the site. This finding would: (1) lead to a change in the site boundaries and/or (2) the implementation of remedial measures and contingency measures previously established at the Site through the WQARF process. Specific to 40th Street and Osborn, ADEQ has committed to ensuring a contingency measure of wellhead treatment would be included in the remedial strategy for SRP well 17.9E-7.5N. This commitment would extend to any additional SRP wells impaired by contamination originating from the 40th Street and Osborn Road WQARF Site. Conversely, if the Preliminary Investigation process is not adhered to – and contamination "near" or within one-mile downgradient of the contamination plume – is assumed to originate from the Site the potential for identifying other contributing sources may be lost.

SRP has previously communicated to ADEQ that it has entered into an agreement that may result in pumped groundwater from around the WQARF Sites being included in the drinking water supply for the City of Goodyear. In the Final Remedial Objectives Report, the groundwater remedial objective for potable use is written to protect, restore, replace, or otherwise provide for the use of groundwater at the Site for drinking water. This remedial objective accounts for the foreseeable use of SRP discharging groundwater into a canal.

Attachment B

COPIES OF WRITTEN COMMENTS RECEIVED



June 25, 2020

Arizona Department of Environmental Quality Waste Programs Division Ms. Lisa Kowalczyk 1110 W Washington Phoenix, Arizona 85007

Re: Comments regarding the Draft Remedial Objective Report (RO) for the East Central Phoenix 40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF) prepared by the Arizona Department of Environmental Quality (ADEQ) on May 28, 2020.

Dear Ms. Kowalczyk,

The City of Phoenix (City) has reviewed the above referenced draft RO for the 40th Street and Osborn Road WQARF site.

The City agrees with the proposed RO's that ADEQ has written for irrigation and potable groundwater. The RO for groundwater indicates that ADEQ acknowledges the valuable resource groundwater is for the City and the future of our residents.

The City looks forward to working with ADEQ on the feasibility study and development of the proposed remedy for this site. If ADEQ would like to discuss these comments, please contact me at 602-256-5681.

Sincerely,

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Juffe Riemenschneider Environmental Programs Coordinator Office of Environmental Programs, City of Phoenix

C: Tina LePage, ADEQ (electronic copy) Nancy Allen, OEP (electronic copy) David Gordon WSD (electronic copy) Elizabeth Zima, OEP (electronic copy) 2 E

<u>.</u>



Andrea Martinez, Water Quality & Waste Management Services, Manager PAB 359 | P.O. Box 52025 Phoenix, AZ 85072-2025 P: (602) 236-2618 | srpnet.com Andrea.Martinez@srpnet.com

July 6, 2020

Via Electronic Mail

To: Lisa Kowlczyk
Arizona Department of Environmental Quality
Waste Programs Division
1110 W. Washington Street
Email: kowalczyk.lisa@azdeq.gov

Reference: Proposed Remedial Objectives Report – East Central Phoenix, 40th Street and Osborn Road Water Quality Assurance Revolving Fund Site; Phoenix, Arizona

RE: Salt River Project Comments – Proposed Remedial Objectives Report, 40th Street and Osborn Road Water Quality Assurance Revolving Fund Site

Dear Ms. Kowlczyk:

Salt River Project Agricultural Improvement and Power District (SRP) appreciates the opportunity to provide comments on the Proposed Remedial Objectives Report dated May 28, 2020 (Report) for the East Central Phoenix – 40th Street and Osborn Road Water Quality Assurance Revolving Fund site in Phoenix, Arizona (Site). SRP has reviewed the Report and provides the following comments for consideration.

As ADEQ is aware, SRP entered into an Agreement with the City of Goodyear to wheel Goodyear's surface water supplies to the future Goodyear Water Treatment plant (WTP) via the Grand Canal and its associated laterals. It is our current understanding that the Goodyear WTP is anticipated to go online by December 31, 2021. As a result, SRP production wells that pump groundwater to the Grand Canal (either directly or via laterals) will transition from irrigation use to potable use within the next 18 months.¹

With the anticipated end-use change, SRP appreciates the proposed groundwater ROs for irrigation use and potable use. While we believe that the proposed groundwater ROs provide an adequate baseline

¹ Once groundwater end-use changes from irrigation to potable, the water will be required to meet applicable drinking water standards *prior* to discharge to the Grand Canal. SRP maintains a policy that prohibits wells from discharging into canals that feed municipal drinking water systems if drinking water standards for volatile organic compounds are exceeded.

level of protection to SRP assets, we encourage ADEQ to consider the following modifications (*italicized*) to the irrigation use and potable use groundwater ROs:

Protect against the loss or impairment of [irrigation/potable] water threatened by the contaminants of concern *within or near* the 40th Street and Osborn Road WQARF Site. Where protection cannot be achieved in a reasonable, necessary, or cost-effective manner; restore, replace, or otherwise provide for [irrigation/potable] water that is lost or impaired by the contaminants of concern at *or originating from* the 40th Street and Osborn Road WQARF Site. Action is needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the 40th Street and Osborn Road WQARF Site does not prohibit or limit the designated use of groundwater within *or outside the current site boundaries*.

The proposed modifications reflect our recent conversation with ADEQ.² SRP has an interest in including groundwater ROs for wells that are located down-gradient of contamination plumes (within one mile), which are not included in the current Site boundary, in addition to adopting ROs for groundwater wells located within the Site boundary. Though we understand that ROs are traditionally limited to site boundaries, for this Site and other WQARF sites in the area we are seeking this safeguard to ensure that any potential threats are proactively addressed to ensure the potable use of groundwater. It is our concern that wells located outside of current site boundaries could be potentially threatened/impacted in the future, leaving us unable to maintain our groundwater production and delivery agreements.

In addition, the recent deregulation of canals due to the updated definition of Waters of the United States is prompting SRP to seek ways to protect our canal systems. Although surface water ROs were not proposed for the Site because "...ROs for groundwater use for the water pumped into the canals are applicable," SRP would be agreeable to the addition of 'contingent' surface water ROs. Surface water ROs would offer protections from groundwater wells that are not yet covered by groundwater ROs, ensuring that contamination from or near the Site will not impact raw potable water deliveries to the Goodyear WTP.

SRP appreciates the opportunity to provide these comments to ADEQ. If you have any questions or require additional clarification, please do not hesitate to call me at 602-236-2618.

Sincerely,

Andrea Martinez Water Quality & Waste Management Services, Manager

cc: Robert Pane (SRP) Karis Nelson (SRP)

² Re: Follow-Up Call to ECP 40th and Osborn Solicitation for ROs/RI Presentation; Lisa Kowlczyk, Tina LePage, Karol Wolf, and Karis Nelson; May 29, 2020.

