FINAL
FEASIBILITY STUDY REPORT
SOUTH MESA WQARF REGISTRY SITE
MESA AND GILBERT, ARIZONA
ADEQ TASK ASSIGNMENT EV11-0084

Prepared for:

Arizona Department of Environmental Quality
Waste Programs Division
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Mr. Kevin Snyder
Project Manager
Remedial Projects Unit
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Subject: **Final Feasibility Study Report**
South Mesa WQARF Registry Site
ADEQ Task Assignment EV11-0084

Dear Mr. Snyder:

AMEC Environment and Infrastructure, Inc. (AMEC) is pleased to submit this *Final Feasibility Study Report* (FS Report) for the South Mesa WQARF Registry Site (SMWRS) located in Mesa and Gilbert, Arizona. This FS Report has been prepared in accordance with the FS Work Plan dated March 2012 and Arizona Administrative Code (A.A.C) R18-16-407(I). This FS Report recommends the remedial alternative for the SMWRS that will be incorporated into the Proposed Remedial Action Plan (PRAP).

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

Sincerely,

AMEC Environment & Infrastructure, Inc.

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Reviewed by:

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ACRONYMS AND ABBREVIATIONS

1,1-DCE	1,1-Dichloroethylene (*aka* 1,1-dichloroethene)
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,2-DCA	1,2-Dichloroethane
1,2-DCP	1,2-Dichloropropane
A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
af	Acre-foot or Acre-feet
af/yr	Acre-feet/year
AMEC	AMEC Environment and Infrastructure, Inc.
AMI	Applied Metallics Inc.
AMSL	Above Mean Sea Level
A.R.S	Arizona Revised Statutes
ASRAC	Arizona Superfund Response Action Contract
AWQS	Arizona Water Quality Standards
bgs	Below ground surface
C-1	Neighborhood Commercial Zoning (Mesa), Light Commercial Zoning (Gilbert)
C-1,2-DCE	*cis*-1,2-Dichloroethene (*aka*, *cis*-1,2-dichloroethylene)
C-2	Limited Commercial Zoning (Mesa), General Commercial Zoning (Gilbert)
C-3	General commercial (zoning code)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Chemical of Concern
COCs	Chemicals of Concern (may be capitalized as COCS)
COPC(s)	Compound(s) of Potential Concern
COM	City of Mesa
DCE	Dichloroethylene (*aka*, dichloroethene)
Earth Tech	Earth Technologies, Inc.
EPA	United States Environmental Protection Agency
ERA	Early Response Action
FS	Feasibility Study
ft./ft.	feet per foot
GPL	Groundwater Protection Level
HHRA	Human Health Risk Assessment
Lbs	Pounds
Lbs/day	Pounds per day
MACTEC	MACTEC Engineering & Consulting, Inc.
MAU	Middle Alluvial Unit
µg/L	Microgram per Liter
MW	Monitoring Well
OSWER	Office of Solid Waste and Emergency Response
PA	Preliminary Assessment
PCE	Tetrachloroethene (*aka* tetrachloroethylene)
RAE	Remedial Alternatives Evaluation
RAP	Remedial Action Plan
RAS	Remedial Alternatives Screening
RI	Remedial Investigation
RO(s)	Remedial Objective(s)
SI	Site Investigation
SMWRS	South Mesa WQARF Registry Site

SRP	Salt River Project
SRV	Salt River Valley Water Users' Association
SVE	Soil Vapor Extraction
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene (*aka* trichloroethylene)
TOG	Town of Gilbert
UAU	Upper Alluvial Unit
USEPA	United States Environmental Protection Agency, see also EPA
VOC	Volatile Organic Compound
WQARF	Water Quality Assurance Revolving Fund
WRA	Water Resource Associates
WTI	Western Technologies, Inc.

1.0 INTRODUCTION

This Feasibility Study (FS) Report recommends the remedial alternative for the South Mesa Water Quality Assurance Revolving Fund (WQARF) Registry Site (SMWRS) that will be developed or incorporated into the Proposed Remedial Action Plan (PRAP) for the site. Since Early Response Actions (ERAs) have been performed that have addressed one or more remedial strategies, this FS has been streamlined. This FS Report has been prepared in accordance with Arizona Administrative Code (A.A.C.) R18-16-407 (March 29, 2002).

1.1 PROJECT AUTHORIZATION

AMEC Environment & Infrastructure, Inc. (AMEC) has been retained by the Arizona Department of Environmental Quality (ADEQ) to perform the following for the Site: a Remedial Investigation (RI); Human Health Risk Assessment (HHRA); FS; and, ERA. ADEQ completed the Remedial Objectives (RO) Report for the SMWRS in February 2013 and AMEC submitted the Final RI Report on June 7, 2013. AMEC also submitted a FS Work Plan to ADEQ on June 28, 2012. Therefore, this FS Report has been prepared in accordance with the FS Work Plan dated June 28, 2012 and the scope of work and terms and conditions of the Arizona Superfund Response Action Contract (ASRAC) No. EV09-0100 between AMEC and ADEQ; and, ADEQ Task Assignment No. EV11-0084.

1.2 OBJECTIVES

The FS was performed in accordance with A.A.C. R18-16-407 and Arizona Revised Statutes (A.R.S) §49-282.06 and 49-287.03. The objectives of the FS are provided as follows:

- In coordination with ADEQ, evaluate a remedial strategy or combination of remedial strategies from the following: no action, monitoring, source control, controlled migration, physical containment, or plume remediation.

- Develop a reference remedy consisting of a combination of a remedial strategy (or strategies) and remedial measures.

- Develop alternative remedies consisting of a combination of a remedial strategy or strategies and remedial measures that will be compared to the reference remedy. According to A.A.C. R18-16-407 (E)(3), at least one of the alternative remedies must employ a remedial strategy or combination of strategies that is more aggressive than the reference remedy, and at least one of the alternative remedies must employ a remedial strategy or combination of strategies that is less aggressive than the reference remedy.

- Conduct a detailed review and evaluation of remedial measures using the best available scientific information concerning available remedial methods and technologies and the comparison criteria identified in A.A.C. R18-16-407H.

- Ensure that the referenced remedy and the alternative remedies are capable of meeting the ROs developed during the RI.

- Ensure that the proposed remedy is consistent with criteria set forth in A.R.S §49-282.06 (A) and A.R.S §49-287.03 (F).

2.0 SITE DESCRIPTION AND HISTORY

The SMWRS is located within the boundaries of the former WQARF South Mesa Phase I Study Area and the former WQARF Phase II-A Hydrogeologic Study Area. The SMWRS is generally bounded on the south and west by railroad tracks, on the east by Cooper/Stapley Road, and on the north by Broadway Road (Figure 1). Based on the most recent groundwater data, the SMWRS contaminant plume encompasses a smaller area described as extending in a northeast direction from the southwest corner of the former Applied Metallics, Inc (AMI) facility at 1545 North McQueen Road, Gilbert, to the southwest corner of the Superstition Freeway and Hobson Street. The plume is estimated to be less than 1,000 feet wide. The original WQARF investigation was prompted by the 1983 discovery of volatile organic compound (VOC) contamination in two irrigation wells owned and operated by Salt River Project (SRP) (Wells 28E-0N and 28.5E-1N).

In 1987, ADEQ began to investigate the nature and extent of the contamination identified in the SRP wells. The VOCs historically detected in groundwater samples collected within the boundaries of the SMWRS were tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (c-1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1,-dichloroethene (1,1,-DCE), 1,1-dichloroethane (1,1-DCA), 1,2-DCA, 1,2-dichloropropane (1,2-DCP) and toluene. However, PCE has been detected in the highest concentrations and is the most widespread VOC.

The boundaries of the SMWRS have been defined by data collected from the following wells:

- 10 conventional groundwater monitoring wells identified as MW-1S, MW-1D, MW-2D, MW-3S, MW-4S, MW-5S, MW-5D, MW-6D, MW-7D, and MW-AM-8S;

- Five BARCAD multi-completion groundwater monitoring wells with 18 sampling intervals identified as MW-9-130, MW-9-170, MW-9-205, MW-9-235, MW-10-130, MW-10-170, MW-10-235, MW-11-170, MW-11-200, MW-11-240, MW-12-159, MW-12-183, MW-12-217, MW-12-238, MW-14-130, MW-14-163, MW-14-186, and MW-14-215;

- A former private production well, known as the Lewis Well, that has been converted to a monitoring well, identified as MW-LW; and

- Two SRP production wells, identified as SRP Wells 28E-0N and 28.5E-1N.

The locations of the wells are shown on Figure 1. Table 1 provides well construction information for the SMWRS monitoring well network. Table 2 provides VOC data for groundwater samples that have been collected since 1983.

Based on the Phase I and II Investigations and the Preliminary Assessment/Site Investigation (PA/SI) work conducted by ADEQ, a potential source of the VOC impact was identified as a drywell located at the former AMI facility at 1545 North McQueen Road, Gilbert, Arizona, located south of the intersection of McQueen Road and Baseline Road (Figure 1). A Site Plan for the former AMI facility is shown on Figure 2. As shown on Figure 2, the property is occupied by an

approximate 2,000-square foot building that has a concrete floor slab. The remainder of the property is paved with asphalt and concrete.

The RI was completed in November 2008 and the chronology of RI events for the SMWRS is provided in the RI Report (AMEC, 2013b). A chronology of activities performed since completion of the RI is provided below:

Year	Event
March 2011	Draft RI Report submitted to ADEQ.
July 2011	Draft RI Report made available for public comment.
April-May 2012	Performance of FS support activities including a groundwater monitoring event and collection of an indoor air quality sample from Suite 1 of the 1545 North McQueen Road building.
June 2012	Final FS Work Plan submitted to ADEQ.
December 2012	Performance of annual groundwater sampling event in support of FS.
February 2013	RO Report presented to the public for comment and then finalized.
June 2013	Final RI and RO Reports are submitted with public comments and responsiveness summaries.
October 2013	Performance of a groundwater sampling event in support of FS.

3.0 FEASIBILITY STUDY SCOPING

3.1 Regulatory Requirements

According to A.R.S §49-282.06 (C), the following factors must be considered in selecting remedial actions:

- Population, environmental and welfare concerns at risk.
- Routes of exposure.
- Amount, concentration, hazardous properties, environmental fate, such as the ability to bio-accumulate, persistence and probability of reaching the waters of the state and the form of the substance present.
- Physical factors affecting human and environmental exposure, such as hydrogeology, climate and the extent of previous and expected migration.
- The extent to which the amount of water available for beneficial use will be preserved by a particular type of remedial action.

- The technical practicality and cost-effectiveness of alternative remedial actions applicable to a site.

- The availability of other appropriate federal or state remedial action and enforcement mechanisms, including, to the extent consistent with this article, funding sources established under the Comprehensive Environmental Response, compensation, and Liability Act (CERCLA), to respond to the release.

The Remedy Selection Rule A.A.C. R-18-16-407, Feasibility Study, states that a FS is a process to identify a reference remedy and alternative remedies that appear to be capable of achieving ROs and to evaluate the remedies based on the comparison criteria, to select a remedy that complies with A.R.S §49-282.06.

3.2 Conceptual Site Model Summary

3.2.1 Site Geology and Hydrogeology

The SMWRS is located within the Eastern Salt River Valley, which is part of the Basin and Range Physiographic Province as described by Fenneman (1931). The Eastern Salt River Valley is a portion of a structural depression formed by Cenozoic crustal extension and is characterized by broad sloping valleys bounded by generally northwesterly trending mountain ranges. Mountain ranges bounding the Eastern Salt River Valley include the following: San Tan Mountains on the south; Mazatzal and Superstition Mountains on the east; McDowell and Phoenix Mountains on the north; and Phoenix Mountains, Papago Buttes and South Mountains on the west (Laney and Hahn, 1986).

The Eastern Salt River Valley lies within a broad alluvial valley composed of Cenozoic (Oligocene to Recent) sedimentary deposits. The alluvial basin extends to maximum projected depths of approximately 10,000 feet near Chandler, as defined by gravity survey methods (Oppenheimer, 1981) and predominantly consists of consolidated to unconsolidated sands and gravels, with local discontinuous clays and silts.

The land surface of the SMWRS gently slopes to the south, ranging from a surface elevation of approximately 1,230 feet above mean sea level (AMSL) in the north end of the SMWRS to approximately 1,205 feet AMSL in the south end of the SMWRS. The slope gradient is approximately 0.006 feet per foot (ft/ft).

The geologic structure in the East Salt River Valley is predominantly controlled by Basin and Range crustal extension causing widespread northeast-trending normal faulting. Generally, the lithology of the East Salt River Valley is divided into six units. These units can be further subdivided into consolidated bedrock and unconsolidated alluvial basin-fill. The six units are identified from shallowest to deepest as follows:

- Three unconsolidated alluvial basin fill units identified as the Upper Unit, Middle Unit, and Lower Unit (Laney and Hahn, 1986). The Upper Unit, Middle Unit, and Lower Unit are further referred to as the Upper Alluvial Unit (UAU), Middle Alluvial Unit (MAU), and Lower Alluvial Unit (LAU) (US Bureau of Reclamation, 1976, and Brown and Pool, 1989);

- Tertiary sedimentary rocks identified as the Red Unit;

- Tertiary extrusive volcanic rocks; and,

- Crystalline basement Tertiary granitic and Precambrian metamorphic rocks.

Bedrock has not been encountered in wells installed in the area of the SMWRS; therefore, depth to bedrock in the area of the SMWRS is unknown. Based on boring and geophysical logs for wells within the SMWRS, Figure 3 provides a north-south geologic cross-section of the SMWRS. The following subsections discuss the characteristics of the UAU, MAU, and LAU in the area.

3.2.1.1 Upper Alluvial Unit

The UAU is observed at the surface throughout the area. The thickness of the UAU generally increases in an easterly direction and ranges from 180 feet thick in the west to more than 300 feet thick near the SMWRS (Kleinfelder, 1988). These sediments are unconsolidated alluvial deposits. They also include floodplain, fan and playa deposits (Hammett & Herther, 1995). Grain-size distributions for the Upper Unit indicate a general distribution of 80 percent or more sand and gravel (Kleinfelder, 1988).

Based on geophysical logs and boring logs for wells and soil borings drilled in the area, the subsurface lithology at the SMWRS is summarized as follows:

- 0-30 feet bgs: silty clay to clayey silt with some fine sand, some intervals weakly to moderately cemented with calcium carbonate.

- 30-40 feet bgs: fine to medium grained poorly graded sand with some silt.

- 40-50 feet bgs: silty clay to clayey silt with some fine sand, some intervals moderately cemented with calcium carbonate.

- 50-55 feet bgs: fine to medium grained, poorly graded sand with some silt.

- 55-62 feet bgs: silty clay to clayey silt with some fine sand, some intervals moderately cemented with calcium carbonate.

- 62-140 feet bgs: cobbles gravel and sand with less than two percent fine-grained constituents, cobbles to approximately three inches in size. First water initially encountered at approximately 122 feet bgs. However, water levels have been as shallow as 87 feet bgs, reaching shallowest levels in April 2012. Moderate water yield observed.

- 140-145 feet bgs: cobbles, sand and gravel with a greater percentage (less than 20 percent) of fine-grained constituents filling void spaces, cobbles to approximately three inches in size. Low water yield observed.

- 145-175 feet bgs: cobbles, sand and gravel with less than five percent fine-grained constituents filling void spaces, cobbles to approximately three inches in size. Moderate water yield observed.

- 175-195 feet bgs: very dense sediments containing approximately 50 percent silt and low plasticity clay and 50 percent cobbles sand and gravel. Silt and clay fill void spaces between larger particles. Very low water yield observed and some cuttings are observed as slightly moist to nearly dry.

- 195-205 feet bgs: fine to coarse grained, moderately graded sand with gravel and cobbles. Moderate water yield observed.

- 205-215 feet bgs: very dense sediments containing approximately 50 percent silt and low plasticity clay and 50 percent cobbles, sand, and gravel. Silt and clay fill void spaces between larger particles. Very low water yield observed and some cuttings were observed as slightly moist to nearly dry.

- 215-250 feet bgs: cobbles, sand and gravel with less than two percent fine-grained constituents, cobbles to 12 inches in size and occasional predominantly sandy intervals (flowing sands). Large water yield was observed and several hundred gallons of water were removed from boring during drilling.

The RI activities at the SMWRS have primarily focused on the UAU. In 1996, SRP performed groundwater modeling and a capture zone analysis for SRP Well 28E-0N. SRP reported the following characteristics for the UAU (SRP, 1996):

- Generally varying from unconfined to confined (confining intervals increasing with depth);

- Aquifer thickness is approximately 250 to 350 feet;

- Hydraulic conductivity ranges from 50 to 500 feet/day;

- Lateral hydraulic gradient is approximately 0.0002 ft./ft.;

- Vertical hydraulic gradient estimated at approximately 0.09 ft./ft.;

- Saturated aquifer thickness was approximately 222 feet;

- Estimate of porosity (for sand and gravel) is between 10 and 30 percent (Kleinfelder, 1990); and,

- Calculated (estimated) groundwater velocity is 0.6 to 9.6 feet per day (ft/day) (Kleinfelder, 1990).

Based on the findings of the RI and review of available boring and geophysical logs, the UAU ranges from approximately 250 feet thick at MW-6D to approximately 240 feet thick at MW-12. The UAU/MAU contact is present at an elevation of approximately 960 feet AMSL at the former AMI facility and at an elevation of approximately 985 feet AMSL in the vicinity of MW-12. The piezometric surface in the UAU is relatively flat across the SMWRS. The saturated thickness of the UAU ranges from approximately 130 feet near MW-12 to approximately 150 feet at the AMI facility.

Based on observations during the AMI Source Characterization and review of available boring and geophysical logs, AMEC identified four water bearing zones within the UAU as follows:

- Existing water table to 140 feet bgs;
- 155 feet bgs to 175 feet bgs;
- 195 feet bgs to 205 feet bgs; and,
- 220 feet bgs to 250 feet bgs (UAU4 and contact with the MAU).

These zones are referred to as zones UAU1, UAU2, UAU3, and UAU4, respectively. Each zone is separated by fine-grained units consisting of clays and silts. The saturated thickness of the UAU is characterized as being predominantly coarse-grained, containing a large percentage of boulder, cobble, gravel and sand sized particles. The fine-grained units were characterized by lower water yields and larger percentages of clay and silt-sized particles, typically between 15 and 50 percent.

Water yield of the hydrologic zones increases with depth. The water yields for zones UAU1 through UAU3 were relatively moderate. However, zone UAU4 yielded large quantities of water and the water appeared to be under pressure. This correlated with the particle size distribution observed for Zone UAU4, specifically a higher percentage of cobbles and boulders and a lower percentage of clay and silt-sized particles. The Rotasonic drilling method was used to drill MW-12 and a continuous core of the UAU was available for observation and logging. The saturated portion of the UAU at MW-12 contained a higher percentage of silt and clay-sized particles as compared to the former AMI facility. Zones UAU1 through UAU3 were distinguishable.

3.2.1.2 Middle Alluvial Unit

The MAU ranges from 600 to 800 feet thick in the vicinity of the SMWRS. Based on review of available boring logs and geophysical logs, the contact between the UAU and MAU occurs at an average of 250 feet bgs. The contact between the UAU and the MAU is typically characterized by a sharp “kick” to the left on a 16-inch resistivity log, thus indicating a transition from coarse-grained sediments to fine-grained sediments. The MAU consists predominantly of silty and clayey sediments with sandy intervals. Grain-size distributions show a southwesterly trend toward fine-grained materials, with approximately 50 percent sand and gravel northeast of the SMWRS to approximately 35 percent sand and gravel to the southwest of the SMWRS (Kleinfelder, 1988). The MAU is comprised of unconsolidated to moderately consolidated fanglomerate and alluvial deposits that were laid down during the later stages of the Basin and Range disturbance.

Due to the lack of wells and monitoring points within the MAU, there is minimal information regarding the characteristics of the MAU at the SMWRS. Based on the available information, there are only two wells screened entirely in the MAU near and at the SMWRS. Those wells are COM Well No. 14 and MW-6D (Figure 1). Based on the available information, the MAU appears to be saturated throughout its entire thickness.

3.2.1.3 Lower Alluvial Unit

The LAU is encountered in wells in the vicinity of the SMWRS at depths ranging from 800 feet bgs to the west and approximately 1,100 feet bgs to the east. Therefore, it is unlikely that the deepest wells and borings within the boundaries of the SMWRS have penetrated the LAU. The thickness of this unit increases in an easterly direction. However, there is no available data regarding the thickness of the Lower Unit within the area. The LAU is comprised of weakly to highly consolidated fanglomerate and alluvial deposits that were laid down during the first stages of the Basin and Range disturbance. Grain-size distributions within the LAU indicate a trend toward finer-grained materials to the east-southeast, with clastics ranging from approximately 30 percent sand and gravel in the northwest, to 10 percent sand and gravel in the southeast (Kleinfelder, 1988).

3.2.2 Source and Release Information

Based on the Phase I and II Investigations and the Preliminary Assessment/Site Investigation (PA/SI) work conducted by ADEQ, a potential source of the VOC impact was identified as a drywell located at the former AMI facility at 1545 North McQueen Road, Gilbert, located south of the intersection of McQueen Road and Baseline Road (Figure 1). A Site Plan for the former AMI facility is shown on Figure 2. As shown on Figure 2, the property is occupied by an approximate 2,000 square-foot building that has a concrete floor slab. The remainder of the property is paved with asphalt and concrete.

AMI leased the property from 1979 to 1990 and operated a facility that produced metal plated electronic parts. Parts were plated with tin, copper, chromium, nickel and zinc. The plating process used acids (chromic, nitric, sulfuric and hydrochloric) and cyanide (copper plating process). Acids (nitric, sulfuric, hydrochloric, acetic and phosphoric) and chlorinated solvents were also used to clean/degrease parts prior to plating. AMI used a chemical called *Perclene*, which contained 99 percent PCE (Water Resources Associates [WRA], 1991).

Wastewater from the facility was reportedly discharged to the on-site drywell (Earth Technologies, Incorporated [Earth Tech], 1995). Based on the Phase I and II Investigations and the PA/SI work conducted by ADEQ, the drywell was identified as the primary source of the VOC impact. Other suspected sources for the PCE and metals impact included: tanks, process equipment, drums which were stored inside and outside the building, and the septic tank and associated leach field located at the west side of the former AMI facility (see Figure 2). The drywell was removed in 1991. Since 1990, the office spaces within the 1545 North McQueen Road building have been leased to various commercial tenants.

The volume of PCE discharged to the subsurface by the AMI facility activities is unknown. The ERAs that have been performed at the SMWRS removed approximately 142 gallons of PCE, with all but 48 gallons removed as vapor phase PCE (see Section 4.0) (Earth Tech 1995-1997).

Based on the volume removed from the subsurface during the ERAs and the likely fate and transport of PCE, the estimated quantity of PCE discharged by AMI is at least 150-200 gallons.

Compounds of potential concern (COPCs) were selected and separated from naturally occurring or background compounds. Based on the investigations that have been performed at the SMWRS, the hazardous substances that were reportedly released were VOCs, metals, and potentially cyanide. The releases potentially impacted three environmental media: air, vadose zone (unsaturated) soils, and groundwater. All detected compounds were initially considered COPCs. Compounds were then eliminated from further consideration through comparison to background concentrations and regulatory or risk-based criteria. Based on the results of the RI, metals and cyanide were eliminated as COPCs in soil and groundwater. VOCs were not detected in soil samples collected during the RI and were also eliminated as COPCs in soil. However, PCE and TCE were detected in indoor air, soil vapor, and groundwater samples above risk-based action levels. As discussed in Section 4.0, ERAs performed at the former AMI facility removed PCE and TCE as COPCs to indoor air and soil vapor. Therefore, PCE and TCE in groundwater are the only COPCs that remained at the completion of the RI.

TCE was reportedly never used at the former AMI facility. However, TCE is a daughter VOC of the reductive dechlorination of PCE under anaerobic conditions that include the presence of organic carbon and reducing bacteria. Natural attenuation studies conducted during the RI did not identify naturally occurring conditions in the subsurface that were favorable for reductive dechlorination of PCE (AMEC, 2013b). However, these conditions would be present in a septic tank. Therefore, the TCE that was detected in indoor air, soil vapor, and groundwater samples possibly originated from the septic tank.

The former AMI facility was not fully characterized until after soil and groundwater ERAs had been performed. Based on the results of the former AMI facility characterization and the chemical properties of PCE, the following interpretation of PCE migration patterns is presented below:

1. PCE was intermittently discharged to the former drywell and septic system during operation of the AMI facility from 1979 to 1990. As indicated above, the TCE detected in indoor air, soil vapor, and groundwater samples at the former AMI facility possibly originated from the septic tank and leach field. PCE was also intermittently leaked or spilled in the process equipment area. The practice of discharging wastes to the drywell and septic system may have been discontinued following the 1983 discovery of PCE in SRP Well 28E-0N.
2. Released PCE, likely in the dissolved phase, migrated both vertically and laterally through the vadose zone. Lateral migration occurred through the sandy intervals present from approximately 40 to 50 feet bgs and from 55 to 62 feet bgs.
3. Based on the passive and active soil gas sample analytical data, PCE entering this interval primarily migrated toward the west and southwest, collecting in the southwest corner of the AMI facility. The passive soil gas survey data indicated that PCE did not migrate across McQueen Road.
4. Soil gas data, collected during soil vapor extraction (SVE) system operation and during the former AMI facility characterization, did not indicate the presence of non-aqueous phase liquid (NAPL) PCE in the vadose zone.

5. PCE penetrated the fine-grained intervals present from approximately 40 to 50 feet bgs and from 55 to 62 feet bgs and migrated into the underlying coarse sediments. Due to the low retentive capacity of the coarser sediments, the PCE migrated vertically towards the water table, which was present at a depth greater than 200 feet bgs at the time the PCE discharges occurred. The measured depth to groundwater in SRP Well 28E-0N on January 11, 1983 was 274.2 feet (SRP, 1996).
6. As the PCE migrated vertically, PCE was possibly retained on and within the fine-grained intervals identified at approximately 140 feet, 175 feet, and 205 feet bgs. Based on the fact that the PCE impact in the groundwater extends to Zone UAU4, PCE penetrated the three clay zones.
7. Considering that PCE was not detected in soil samples collected at the SMWRS, the PCE in the vadose zone was mainly in the vapor phase.
8. Following the discovery of PCE in samples collected from SRP wells 28E-0N and 28.5E-1N in 1983, pumping of groundwater in the area was minimized or discontinued. After 1983, water levels at the AMI facility began to rise, eventually encountering residual PCE contaminated media in Zones UAU-1 through UAU-4.
9. From 1993 to 1997, SRP placed well 28E-0N back on-line and installed a wellhead treatment system to decrease PCE concentrations in water transmitted to their irrigation canal system below the risk-based level of 33 µg/L. The pumping of SRP Well 28E-0N over this time period removed an estimated 650 pounds of dissolved PCE from the groundwater (see Section 4.1).
10. From 1995 to 1997, the SVE system installed as an ERA (see Section 4.2) removed approximately 1,107 pounds of VOCs from the vadose zone near the former drywell. Based on the results of the passive soil vapor survey and analytical results for soil gas samples collected from boring LB-3, the SVE system effectively removed a majority of the PCE from this area, reducing the potential for on-going groundwater impacts.
11. Based on passive and active soil gas data collected in 2001, an extensive vapor plume was present beneath the 1545 North McQueen Road building, extending from the former process equipment area to the southwest corner of the AMI facility. SVE system operation from September 2004 to October 2008 removed more than 168 pounds of PCE from the ground (see Section 4.4).

3.2.3 Groundwater Levels and Contaminant Transport and Distribution

3.2.3.1 Upper Alluvial Unit

The earliest recorded depth to water for the SMWRS is 1940, when depth to water in SRP Well 28E-0N was reported at 56 feet bgs. In 1951, depth to water in SRP Well 28.5E-1N was reported at 140 feet bgs. The review of water level data for the SMWRS monitoring wells indicate that depth to water has historically ranged from approximately 113 feet bgs to 175 feet bgs, with water levels generally rising between 1991 and 1997 (ADEQ, 1997). However, according to Kleinfelder, groundwater in the vicinity of the AMI facility may have been greater than 200 feet deep in 1983 (Kleinfelder, 1988). The depth to water reported in SRP Well 28E-0N on January 11, 1983 was 274.2 feet (SRP, 1996), which is below the UAU/MAU contact. However, SRP reported that the depth to water in SRP Well 28E-0N ranged from 157 feet to 175 feet between January 1, 1973 and January 1, 1981.

According to SRP records and the available data, SRP Well 28E-0N was shut down in 1983 due to the detection of PCE and TCE in water samples collected from the pump discharge. As shown in Table 2, by September 1985, the PCE and TCE concentrations in the water samples collected from the pump discharge had increased to 745.8 µg/L and 34.7 µg/L, respectively, which are above the AWQS of 5.0 µg/L for both PCE and TCE. With the exception of periodic operation to collect water samples, the well remained off-line until 1994, when a wellhead treatment system was installed. The well was pumped with the wellhead treatment system in place from 1994 to 1996. The treatment system was removed in 1996 and the well continued pumping until 1997 when it was no longer needed. During the time period that SRP Well 28E-0N was off-line, water levels began to rise. Reported depths to water in SRP Well 28E-0N on July 9, 1986, January 29, 1988 and November 7, 1991 were 177.8 feet, 134.3 feet, and 142.2 feet, respectively. Depth to water in MW-AM-8S was measured at approximately 150 feet bgs in 1991. According to the ADEQ data, water levels continued rising with time, with the highest water levels recorded in April 1997. Between July 2000 and December 2002, water levels fluctuated seasonally, typically changing approximately 5 feet between summer and winter months. Water levels began steadily declining in 2002, apparently in response to drought conditions. By June 2004, water levels had declined to the lowest elevations in more than 10 years. However, since December 2004, water elevations have been steadily increasing and by April 2012 had reached all-time highs since 1973, ranging from 80 to 90 feet bgs across the area. Figures 4-9 present groundwater elevation hydrographs for the SMWRS wells.

Groundwater elevation maps from July 2000 to September 2008 are included in the Final RI Report (AMEC, 2013b). Based on collected groundwater elevation data, groundwater generally flowed in a north to northeasterly direction at a relatively shallow gradient of less than 0.0007 feet/feet (ft/ft) up until June 2005. Specifically, groundwater elevations typically declined less than five feet in the downgradient direction across the SMWRS. However, from June 2005 to April 2012 groundwater flowed in a southerly direction, with groundwater elevations declining between two and three feet from north to south. The changes in groundwater elevations and flow direction between June 2004 and April 2012 were attributed to local changes in groundwater pumping and recharge. The April 2012 groundwater elevations are shown on Figure 10. A second groundwater sampling event in support of the FS was performed from December 18-20, 2012 (AMEC, 2013a). The December 20, 2012 regional groundwater

elevations are shown on Figure 11. As shown on Figure 11, groundwater flowed toward the north on December 20, 2012, with an approximate decline of 2.13 feet over 9,500 feet between MW-14-130 and MW-12-183. This represents a relatively flat groundwater flow gradient of 0.00022 ft/ft in a northerly direction.

Between the April 11, 2012 and December 20, 2012 monitoring events, water levels decreased across the SMWRS ranging from a decrease of 6.24 feet in well MW-14-130 at the south end of the well network to a decrease of 12.42 feet in well MW-12-217 at the north end of the well network (see Figures 4-9). As shown on Figure 11, groundwater on December 20, 2012 flowed in a northerly direction, which is a reversal of the southerly flow direction that was observed from June 2005 to April 2012. These substantial changes typically indicate a change in groundwater pumping in the area. AMEC contacted SRP to obtain recent pumping information for SRP wells in the area, particularly wells 28E-0N and 28.5E-1N. SRP well 28E-0N had not been pumped since 2009. However, SRP indicated that SRP well 28.5E-1N had been pumped for 270.09 hours during June and July 2012 over which time 349.33 acre-feet (af) of water was pumped. The well was also pumped for short time periods in November 2012 (0.17 hours and 0.28 af) and December 2012 (0.07 hours and 0.06 af). The greatest water level decreases were observed in the wells located in the northern portion of the area, which is where SRP well 28.5E-1N is located.

A groundwater monitoring event in support of the FS was also conducted in September 2013. As shown in Figures 4-9, groundwater levels continue to decline across the area. The September 20, 2013 regional groundwater elevations are shown on Figure 12. The September 20, 2013 regional groundwater elevations indicate that groundwater continues to flow in a northerly direction (AMEC, 2014).

With the identified source of the dissolved PCE being the former AMI facility, the distribution of the dissolved PCE has been influenced by pumping of SRP Wells 28E-0N and 28.5E-1N and the regional groundwater flow direction. The dissolved PCE plume has generally followed a northeast-southwest line that runs from the former AMI facility to SRP Well 28.5E-1N. Therefore, nested BARCAD wells MW-12-159 (UAU1), MW-12-183 (UAU2), MW-12-217 (UAU3), and MW-12-238 (UAU4) were installed north of SRP Well 28.5E-1N and nested BARCAD wells MW-14-130 (UAU1), MW-14-163 (UAU2), MW-14-186 (UAU3), and MW-14-215 (UAU4) were installed south of the former AMI facility. PCE has not been detected in groundwater samples collected from these wells (see Table 2); therefore, these nested wells define the extent of the dissolved PCE plume on the north and south of the study area. PCE has also not been detected in samples collected from wells MW-1S/MW-1D and MW-3S on the west and in samples collected from Wells MW-2S and MW-4D on the east (see Table 2); therefore, these wells define the extents of the dissolved PCE plume on the west and east. However, since RI groundwater monitoring activities were implemented in the 1980's, accurately tracking the magnitude and distribution of the PCE plume within the identified extents has been a challenge based on the following:

1. Several conventional monitoring wells screen multiple hydrologic zones; and,
2. The spatial distribution of the conventional monitoring wells within the study area

When a monitoring well screens multiple hydrologic zones, it is difficult to identify the zone from which the PCE detected in a sample originated. Therefore, evaluation of historic data and discreet depth-specific sampling were used to evaluate the vertical PCE profile. The discreet sampling consisted of collection of passive diffusion bag (PDB) samples from conventional monitoring wells that screen multiple zones and collection of depth-specific groundwater samples from the BARCAD wells. This information and data indicate the following:

- The deepest water level measured at the SMWRS was 274.2 feet bgs in 1983, which is about 30 feet below the Zone UAU4/MAU contact. The PCE concentration detected in the discharge sample collected from SRP Well 28E-0N at that time was 1.8 µg/L.

- After the SRP wells were shut down, water levels began to rise. This resulted in attendant increases in PCE concentrations in the discharge from SRP well 28E-0N. The maximum concentrations were detected in the discharge from SRP well 28E-0N when water levels had risen to Zones UAU2 and UAU3.

- Water levels did not rise to Zone UAU1 until after 1997, which was after pumping of the SRP wells and performance of the first ERA SVE at the former AMI facility (see Sections 4.1 and 4.2).

- A second ERA SVE operation was performed from 2004 to 2007 (see Section 4.4), which further decreased PCE concentrations in samples collected from the SMWRS wells.

Therefore, these data confirm the following:

1. The PCE impact extended vertically to Zone UAU4;
2. As indicated by the highest PCE concentrations, a majority of the dissolved PCE mass was present in Zones UAU2 and UAU3; and,
3. Groundwater in Zone UAU1 likely became impacted when groundwater encountered PCE vapors.

Dissolved PCE concentrations in samples collected from monitoring wells have not been indicative of the presence of NAPL PCE and soil samples collected below the former AMI facility have not been detected with PCE. However, vapor-phase PCE has been present and a majority of the PCE mass removed by the ERAs has been in the vapor phase. Therefore, the dissolved PCE in the groundwater likely originated from the rising groundwater encountering PCE vapors within the hydrologic zones. Groundwater in Zone UAU1 would have only been impacted after 1997 as the water levels rose into this zone. The PCE released was sufficient to create a dissolved PCE plume in the UAU that at one time extended nearly two miles and was approximately 0.5 miles wide. Since groundwater monitoring activities associated with the RI started in 1991, the maximum PCE concentration of 300 µg/L was detected in a sample collected from former AMI facility well MW-AM-8S on January 11, 1994 (see Table 2). Since that time, PCE concentrations across the area have been decreasing. The most recent post-RI groundwater monitoring events performed in December 2012 and September 2013 has indicated a much smaller dissolved PCE plume that is apparently limited to the region surrounding the former AMI facility, with a maximum PCE concentration in groundwater of 17 µg/L (see Table 2). Figure 13 depicts the approximate distribution of the PCE plume to the

AWQS of 5.0 µg/L based on the September 2013 data. Recent decreases in groundwater PCE concentrations are likely due to source removal from completed ERAs and ongoing natural attenuation mechanisms.

3.2.3.2 Middle Alluvial Unit

The MAU is the primary drinking water supply aquifer in the area; however, due to the availability of surface water supplies such as SRP and the Central Arizona Project (CAP), it is currently not being extensively used. The MAU has not been extensively studied at the SMWRS. Only one monitoring well, MW-6D, penetrates the MAU and it is only screened in the upper 50 feet of the MAU. SRP Wells 28E-0N and 28.5E-1N penetrate the MAU; however, they screen across the UAU/MAU contact. COM Well No. 14 is screened entirely in the MAU and is a supplemental drinking water supply well for the COM.

There are currently minimal data regarding the nature and extent of PCE groundwater impact in the MAU below the SMWRS. As indicated previously, the deepest water level measured at the SMWRS was 274.2 feet bgs in 1983, which is about 30 feet below the UAU/MAU contact. The PCE concentration detected in the discharge sample collected from SRP Well 28E-0N at that time was 1.8 µg/L. SRP Well 28E-0N is screened to 373 feet bgs; therefore, this reported concentration was influenced by mixing. PCE was also detected above the AWQS of 5.0 µg/L at SRP Well 28.5E-1N, which was screened from 190-700 feet bgs before being backfilled to 549 feet bgs in 1997. However, the detection does indicate that PCE had migrated to the upper portion of the MAU. PCE would have been drawn deeper into the MAU by the pumping of the SRP wells; however, the dissolved PCE would have been pumped and removed from the aquifer. Depth-specific groundwater sampling has been performed in SRP Well 28E-0N to obtain a vertical contaminant profile; by Kleinfelder in January 1990 as the pump was running (Kleinfelder 1992), and by AMEC in July 2002 using PDB samplers. The results are summarized in Table 2 and indicate that PCE was present at high concentrations prior to conducting the IRA and were subsequently reduced to concentrations at the AWQS of 5.0 g/L.

The Kleinfelder results demonstrate the drawdown, mixing, and extraction of PCE under dynamic conditions. Based on this, SRP Well 28E-0N was utilized as an ERA to remove PCE mass as discussed further in Section 4.1. The AMEC PDB sampling was performed to evaluate if the SRP wells represented a vertical migration pathway to the drinking water supplies in the MAU. As shown in Table 2, a relatively uniform vertical contaminant profile of low PCE concentrations was indicated; suggesting a potential for vertical migration at the time the evaluation was conducted (July 2002). Due to the fine-grained nature of the MAU, it is unlikely that dissolved PCE would migrate to drinking water wells in the MAU under natural static conditions.

COM Well No. 14 is located in the north portion of the study area and outside the historic and current PCE plume boundaries in the UAU (see Figure 1 for location). COM Well No. 14 is the only production well in the study area screened entirely in the MAU. SRP Well 28.5E-1N was backfilled to 549 feet bgs in 1997 to protect the water supply for COM Well No. 14.

ADEQ regulates drinking water providers in Arizona; however, ADEQ has transferred regulation of drinking water providers in Maricopa County to the Maricopa County Environmental Services Department. COM Well No. 14 had been previously issued a source approval, which would

have required reporting of water quality data collected at the wellhead. Once the source approval is issued for a municipal water supply well, the point-of-compliance is the municipal water treatment plant and water quality reporting from the well is no longer required by Maricopa County. Therefore, water quality data for COM Well No. 14 was not collected until October 2012. Appendix A presents the COM Application for New Source Approval for Mesa Well No. 14 that includes the analytical results for the water sample collected on October 25, 2013. As shown in Appendix A, PCE was not detected above the minimum reporting limit of 0.0005 milligrams per liter (mg/L), which is the same as 0.5 µg/L. Therefore, the MAU in the area of COM Well No. 14 is currently not impacted by PCE in excess of drinking water quality standards.

3.2.4 Natural Attenuation

As part of the RI, natural attenuation was evaluated as a strategy to remediate dissolved VOCs in the subsurface. The evaluation identified that there is insufficient naturally occurring organic carbon in the subsurface soil and groundwater to promote extensive natural biologic reductive dechlorination of the released PCE. However, the presence of TCE and c-1,2-DCE in soil vapor and groundwater samples indicates that reductive dechlorination has occurred on a limited basis, primarily in the area of the septic tank and associated leach field where organic carbon is available and biologic activity likely occurred. Other natural attenuation mechanisms such as dilution, volatilization, and dispersion have contributed more significantly to the observed regional decreases in PCE concentrations.

3.2.5 Human Health Risk Screening

3.2.5.1 Soil and Soil Vapor

The risks to human health are an important consideration in selecting and evaluating potential remedial alternatives for a site and proposing the preferred remedy. The Human Health Screening presented in the RI Report evaluated human exposure to soil, soil vapor, indoor air, and groundwater impacted by the releases of PCE at the SMWRS (AMEC, 2013b). The only compounds that were found to exceed risk-based cleanup levels were PCE and TCE. PCE and TCE were not detected in soil samples collected at the former AMI facility above risk-based soil cleanup levels. Therefore, the direct contact with soil exposure pathway was evaluated as incomplete. However, vapor phase PCE and TCE were detected in the soil, which represented a source of PCE and TCE to groundwater, a source of PCE and TCE to indoor air, and a potential inhalation exposure pathway to site workers that may dig excavations at the former AMI facility. An ERA involving SVE was performed at the former AMI facility from 1995 to 1998, over which approximately 1,107 lbs of VOCs were extracted from the subsurface (see Section 4.2). The SVE system was shut down in 1998 due to low and asymptotic VOC extraction rates and it was concluded that vadose zone remediation at the former AMI facility was completed.

As part of source characterization, a soil vapor assessment was performed. The first phase, involving collection of passive soil gas samples, identified an area of elevated soil gas at the southwest corner of the former AMI facility and at an area next to the septic tank. The second phase involved the collection of depth-specific soil and soil vapor samples during installation of nested monitoring wells. PCE and TCE were not detected in the soil samples; however, elevated PCE and TCE concentrations were detected in the soil vapor samples. Indoor air

quality samples were then subsequently collected to evaluate the potential risk for intrusion of PCE and TCE vapors into the building. The indoor air quality sampling indicated that PCE and TCE vapors were migrating into the building and represented a potential health risk to workers. ADEQ subsequently requested SVE in this area to mitigate the vapor intrusion and remove a potential source of groundwater impact (see Section 4.4). The SVE system operated from 2004 to 2007 and removed more than 168 lbs of PCE from the subsurface. Post-SVE indoor air quality samples confirmed that PCE and TCE vapors in the building had been decreased below risk-based levels. A second indoor quality sampling event was conducted on April 11, 2012 and confirmed that PCE and TCE levels remained below risk-based levels (AMEC, 2013b). Therefore, the vapor intrusion exposure pathway is incomplete.

3.2.5.2 Groundwater

The groundwater in the UAU below the SMWRS is not used as a drinking water supply and has only been used for irrigation purposes by SRP. In 1991, SRP performed a risk assessment and calculated a risk-based PCE action level of 33 µg/L for their water uses (Malcolm-Pirnie, 1991). At that time, PCE exceeded this level in water samples collected from the discharge from SRP Well 28E-0N. A wellhead treatment system was subsequently installed in 1993 and the well was pumped from 1994 to 1997. The wellhead treatment system was removed in 1996 when PCE concentrations in the pump discharge were consistently below 33 µg/L (see Section 4.1). In 1997, SRP no longer needed the well and discontinued pumping operations. During the time that the well was pumped, an estimated 650 pounds of PCE were removed from the groundwater (see Section 4.1). Since 1997, SRP has not consistently pumped wells 28E-0N and 28.5E-1N and, until recently as mentioned above, has only pumped these wells on a periodic basis to collect groundwater samples. SRP well 28.5E-1N has been recently pumped for irrigation purposes totaling approximately 349.33 af in June and July 2012 and 0.34 af in November and December 2012. As shown in Table 2, since 1992 PCE concentrations in the discharges from these wells have not exceeded 33 µg/L. Analytical data for groundwater samples collected from SRP well 28E-0N since 2003 have been less than the AWQSs for all of the analytes tested. Additionally, PCE has not been detected in excess of 33 µg/L in groundwater samples collected from the SMWRS UAU monitoring wells since 2002 and only slightly greater than the AWQS of 5.0 µg/L with the highest concentration at 18 µg/L. The maximum PCE concentration detected in the December 2012 samples collected from the SMWRS monitoring wells is 17 µg/L (MW11-200). Therefore, the data indicate that the risk-based PCE action level for the UAU and the SRP water use has been achieved at the SMWRS for current SRP groundwater use. However, the data indicate that PCE concentrations in the UAU still exceed the AWQS in groundwater monitor wells at the former AMI facility. SRP has indicated that they may start pumping their wells in the area, which have not been pumped consistently since 1997. Considering that the groundwater samples collected from the SMWRS wells since 1997 have been collected under static conditions, pumping of the wells may result in changes in the PCE concentrations in monitoring well samples and the discharges from the SRP wells. This represents a data gap and additional data are required to evaluate changes in groundwater concentrations under the SRP pumping conditions.

COM Well No. 14 is the only drinking water well currently present within the boundaries of the SMWRS and is screened entirely in the MAU. As indicated in Section 3.2.3.2, a groundwater sample collected from COM Well No. 14 on October 25, 2012 was not detected with PCE above

the reporting limit of 0.05 µg/L. COM Well No. 14 is in compliance with drinking water well standards and has been issued a New Drinking Water Source Approval by Maricopa County Environmental Services Department.

3.3 Remedial Objectives Summary

The Final Remedial Objectives Report dated February 15, 2013 and prepared by ADEQ presents the ROs for the Site (ADEQ, 2013). The ROs are based on the current and reasonably foreseeable uses of land and the current and reasonably foreseeable beneficial uses of waters of the state identified in the SMWRS Land and Water Use Report, dated June 5, 2007 (MACTEC, 2007). ROs were not established for every use identified in the Land and Water Use Report. The determination as to whether a use was addressed was based on information gathered during the public involvement process, limitations of WQARF, and whether the use is reasonably foreseeable.

A public meeting was held on July 20, 2011 to discuss the Draft RI Report and the proposed ROs. Reponses from the public regarding the proposed ROs were received by ADEQ. ADEQ made the Proposed RO Report available for public comment on February 12, 2013 during a meeting of the Community Advisory Board. No comments were received from the public and the Final RO Report dated February 15, 2013 is included as Appendix B to the Final RI Report (AMEC, 2013b).

3.3.1 Remedial Objectives for Land Use

The SMWRS is located in the COM and Town of Gilbert (TOG) and is bounded approximately by Broadway Road to the north, Cooper/Stapley Drive to the east, and the railroad south of Baseline Road to the south and west. Generally, the SMWRS is located in a mixed urban, commercial and residential area. Based on the current zoning maps provided by the COM and the TOG, the area of the SMWRS is zoned as R-3 and C-2, which represent transitional and multi-family residential and general commercial zoning, respectively.

The boundary between the TOG and the COM is Baseline Road. The PCE groundwater plume extends into a portion of the COM that is zoned commercial. The plume area is bounded by Mesa Drive on the west, US highway 60 on the north, Stapely Drive on the east, and Baseline Road on the south and is predominantly zoned residential by the COM. Based on future land use plans provided by the COM, there are no immediate plans to change the land use or zoning for the areas of the COM overlying the PCE groundwater plume.

The former AMI site is located in the TOG. According to Mr. Mark Gunning, the current owner of the former AMI facility (1545 North McQueen Road), the future use of the former AMI site is expected to remain general commercial (C-2). Based on future land use plans provided by the TOG, there are no immediate plans to change the land use or zoning for this area.

The development of the properties for commercial/retail uses is proceeding and is reasonably feasible. The ROs for land use at the former AMI facility area are:

1. Protecting against the loss or impairment of each use;
2. Restoring, replacing, or otherwise providing for each use;

3. Determining when action is needed; and,
4. How long action is needed to protect or provide for the use.

3.3.2 Remedial Objectives for Groundwater Use

The Water Use portion of the Land and Water Use Study Report is an inclusive summary of information gathered from discussions with SMWRS water providers, municipalities, well owners, and persons holding water rights. The water providers within the SMWRS are the COM, TOG, and the SRP.

The Study Report involved a review of the following information that was obtained from the ADWR: a list of persons holding groundwater withdrawal rights within the SMWRS area and a list of registered production wells within the SMWRS area. After the water providers, well owners, and persons holding water rights were identified, a survey was conducted to obtain information regarding current and future uses of groundwater within the SMWRS area. The Chemicals of Concern (COC) at the site are PCE and TCE. The following groundwater uses within the SMWRS have been identified: and are discussed in the following sections: 1) municipal use [drinking water]; 2) SRP use; 3) agricultural use [irrigation]; and, 4) private use [including domestic, commercial, livestock and industrial].

3.3.2.1 Municipal Groundwater Use

Portions of the COM and portions of the TOG are located in the Phoenix Active Management Area, an area where groundwater use is controlled and regulated. Parties have either a Type I or a Type II water right which allows them to pump and use groundwater.

3.3.2.1.1 City of Mesa (COM)

In 2010, the COM was re-designated as having a 100-year assured water supply that could meet all of the COM's current, committed, and future projected water demands. Part of the re-designation process recognized a groundwater allowance within the COM's water portfolio which was a water supply that could be used On- and Off-Project lands.

The COM has 79 active deep wells and currently operates one production well, identified as COM Well No. 14, located within the boundaries of the SMWRS. If the groundwater contaminant plume extends to the north in the future, COM Well No. 14 may become contaminated.

Two production wells, identified as COM Well No. 10 and COM Well No. 13, are located at the north end of the SMWRS. Currently, the COM only pumps these wells during dry-up of SRP canals, in times of peak demand, or during surface water shortage. The COM plans to continue this operating schedule. The COM indicated that they have no plans for installation of new wells within the boundaries of the SMWRS area.

3.3.2.1.2 Town of Gilbert (TOG)

The TOG currently owns 13 production wells in the TOG area and the SRP owns 6 deep wells operated by the TOG to provide water to the TOG. SRP Well 29E-1N, located at Stapely Drive

and Southern Avenue, is within the SMWRS boundaries and is connected to the TOG water supply system. A second TOG well is located within ½-mile of the former AMI facility and cross-gradient to the contaminant plume. The well does not appear to be contaminated at this time.

In August 2010, the TOG was designated as having an adequate water supply through the ADWR's Assured Water Supply program to meet the service area's water demands through 2025. ADWR determined that the TOG had adequate supplies to meet customer's demands through 2025. A portion of those supplies is Long Term Storage Credits (LTSC), which will be extinguished to offset future groundwater pumping.

3.3.2.1.3 ROs for Municipal Groundwater Use

The ROs for municipal groundwater use in the SMWRS area are 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. Determining when action is needed; and,
4. How long action is needed to protect or provide for the use.

3.3.2.2 Salt River Project Groundwater Use

SRP currently owns five wells within the SMWRS boundaries. The five SRP wells are:

1. SRP 28E-0N,
2. SRP 28.5E-1N,
3. SRP 29E-1N,
4. SRP 27.5E-1N, and
5. SRP Unnumbered (abandoned)

In the past, PCE was consistently detected above the AWQS of 5.0 µg/L in SRP well 28E-0N. The well was taken off-line in 1983. SRP prepared a Remedial Action Plan (RAP) and installed a well head treatment system on the well and operated it as an ERA. In 1996, influent groundwater PCE concentrations were routinely below the risk-based cleanup level of 33 µg/L and SRP removed the wellhead treatment system. SRP continued pumping the well for irrigation purposes until 1997.

As of the writing of this report, the SRP wells are not being used, with the exception of the well that is connected to the TOG water system (SRP 29E-1N). The remaining wells are not pumped on a regular basis. However, according to SRP, the wells may be pumped in the future to provide makeup water for lack of snowpack runoff from the SRP watershed area. Changes in the pumping schedule may influence the current distribution of the dissolved COCs at the SMWRS.

While currently the wells provide water for irrigation, SRP anticipates that the wells will transition to drinking water supply in the reasonably foreseeable future, either by directly connecting the wells to municipal water distribution systems or piping to municipal water treatment plants located on the SRP canal system as a drought supply.

The ROs for SRP groundwater use in the SMWRS area are 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. Determining when action is needed; and
4. How long action is needed to protect or provide for the use.

3.3.2.3 Private Groundwater Use

Private property owners within the SMWRS may install an exempt domestic well (less than 35 gallons per minute) on their property for personal use provided that the well is registered with ADWR. As of February 2012, there were no private wells listed on ADWR's database for the area. Based on this information, no ROs are needed at this time for private groundwater use.

3.3.2.4 Agricultural Groundwater Use

The valley population continues to increase rapidly, and agricultural lands have been converted into commercial, residential (housing), and recreational (parks, golf courses, etc) uses. As of February 2012, no agricultural or irrigation wells were identified in the COM or the TOG SMWRS areas. Based on this information, no ROs are needed for agricultural groundwater use.

3.3.3 Remedial Objectives for Canal/Surface Water Use

The lateral canals, which receive discharge from the SRP wells located in the SMWRS, are the only canals in the SMWRS. Based on a review of Salt River Valley Water Users' Association (SRV) Zanjero Area Maps for 2013 (SRV, 2013) water is directed to the south and west from the points of entry into the lateral canals by a series of turn-out gates. These laterals are piped or covered. Eventually water from these canals may enter Lateral Canal 9.5 (or Western Canal), an open canal oriented east-west approximately one mile south of the SMWRS. Water discharged from the canals is used for irrigation inside and outside the SMWRS. Currently, groundwater quality data indicate that PCE concentrations are less than risk-based cleanup level of 33 µg/L (AMEC, 2013a).

The Kokopelli Golf Club ponds are surface water bodies located adjacent to the southeast corner of the SMWRS. The Kokopelli Golf Club shallow ponds do not receive groundwater pumped within the SMWRS and are therefore not considered a surface water use for the SMWRS.

Based on the above information, no ROs are needed for surface water use.

3.3.4 RO Summary

In summary, the ROs for groundwater use are limited to SRP water uses and municipal use of the groundwater supplies in the MAU. There are also ROs for land use at the former AMI facility area.

4.0 EARLY RESPONSE ACTION SUMMARY

There have been three remedial measures performed at the SMWRS that have been defined by ADEQ as ERAs and an interim remedial measure that was in effect an ERA. These actions have resulted in a decrease in the subsurface PCE mass and a decrease in the nature and extent of the dissolved PCE plume. These actions have also contributed to achievement of the ROs and are summarized in the following subsections.

4.1 Early Response Action at SRP Well 28E-0N, 1991-1997

As discussed in previous sections, SRP Well 28E-0N was taken off-line in 1983 due to elevated concentrations of PCE in extracted groundwater. To bring the well back into service, SRP prepared a RAP in 1991 for the operation of a wellhead treatment system at Well 28E-0N. The RAP proposed the use of a packed column air stripper to treat PCE in the groundwater. The water pumped from SRP Well 28E-0N was used for irrigation purposes only. A risk assessment, performed by Brown and Caldwell for SRP, indicated a risk-based PCE cleanup level of 33 µg/L (Malcolm Pirnie, 1991). The wellhead treatment system was designed to treat an influent PCE concentration of 500 µg/L to an effluent PCE concentration of less than 33 µg/L.

The wellhead treatment system was installed in 1993 and SRP Well 28E-0N was placed back into service in July 1994. The plan was to pump 6,000 acre-feet (af) of water from the well (SRP 1996). By 1996, influent PCE concentrations to the wellhead treatment system were consistently below the risk-based cleanup level of 33 µg/L and SRP removed the wellhead treatment system and continued pumping SRP Well 28E-0N. In 1997, SRP determined that water from SRP Well 28E-0N was no longer needed. The well was taken off-line and as of November 2001 has only been operated periodically for sample collection or maintenance.

Between July 1994 and July 1997, approximately 7,035.55 af or 2.29 billion gallons of water were pumped from SRP Well 28E-0N. Assuming an average PCE concentration of 34 µg/L, an estimated 650 pounds of PCE were removed from the groundwater (approximately 48 gallons of PCE) and treated during the period the remediation system was in place.

4.2 Early Response Action Soil Vapor Extraction System Operation, 1995-1998

In 1995, Earth Tech installed an SVE system at the former AMI facility in the vicinity of the drywell (Figure 2). System operation began on June 30, 1995. Initial PCE concentrations in the extracted vapors were reported as follows: 490 µg/L from VW-1; 1,000 µg/L from VW-3; and, 15,000 µg/L from VW-4. VW-1 was screened from approximately 40 feet bgs to approximately 60 feet bgs, VW-3 was screened from approximately 10 feet bgs to approximately 60 feet bgs, and VW-4 was screened from approximately 65 feet bgs to approximately 110 feet bgs. The highest PCE concentrations were reported in the vapors extracted from VW-4, indicating that the greatest contaminant mass was likely located below 65 feet bgs. No soil samples had been previously collected below 61 feet bgs at the former AMI facility.

Based on operation and maintenance (O&M) reports prepared by Earth Tech, system O&M was performed by Earth Tech and Environmental Response, Inc. from June 30, 1995 to at least June 12, 1997. The SVE system initially removed approximately 66 pounds of VOCs from the soil per day (lbs/day). However, by July 26, 1995, the VOC extraction rate had decreased to approximately 9.7 lbs/day. Between June 30 and July 26, 1995, Earth Tech estimated that approximately 608 lbs of VOCs had been removed from the vadose zone soils. By March 11,

1996, approximately 996 lbs of VOCs had been extracted. Operation of the SVE system continued from March 11, 1996 until June 10, 1996, over which time an additional 60 lbs of VOCs were extracted (Earth Tech, 1995-1997).

The system was shutdown on June 10, 1996 to allow for installation and integration of vapor extraction wells VW-5 and VW-6 (Figure 2). VW-5 was a nested system, consisting of a shallow well, screened from approximately 15 to 55 feet bgs, and a deep well screened from approximately 65 to 105 feet bgs. VW-6 was screened from approximately 65 to approximately 105 feet bgs (EMCON, 1996). The system was restarted on February 13, 1997 with extraction from all vapor extraction wells, including VW-5 and VW-6. Initially, the total VOC concentrations in the extracted vapors from VW-5 (deep) and VW-6 were 17 µg/L and 37 µg/L, respectively. The system was operated from February 13, 1997 through June 12, 1997, over which time an additional 54 lbs of VOCs were extracted (EMCON, 1996). The highest total VOC concentrations were still being reported in VW-4, at approximately 85 µg/L. Between June 30, 1995 and June 12, 1997, Earth Tech estimated that approximately 1,107 lbs of VOCs had been extracted from the subsurface. By June 12, 1997, Earth Tech estimated that approximately 0.51 lbs of VOCs were being removed per day.

After June 12, 1997, the ADEQ documentation did not indicate the operating status of the SVE system. A Memorandum from ADEQ dated September 17, 1997 indicated that the SVE system was shutdown on June 12, 1997. However, there was information in the ADEQ files that indicated the SVE system was operating during March 1998 and vapor samples were collected from VW-1 and VW-4 on April 22, 1998. There are no data in the ADEQ files indicating when the SVE system was finally shutdown by Earth Tech.

4.3 Modification of SRP Well 28.5E-1N

SRP modified SRP Well 28.5E-1N in April 1997 (Hay, 2002). The modifications, which involved abandonment of the bottom approximate 150 feet of the well, were performed to remove the well as a potential vertical contaminant migration pathway to the MAU and to protect downgradient drinking water wells screened in the MAU. The revised well construction details are summarized in Table 1. SRP Well 28.5E-1N was originally 700 feet deep and was screened from 190 feet bgs to approximately 688 feet bgs, with a casing reduction at approximately 495 feet bgs. Based on information provided by SRP, the well is currently screened from approximately 190 feet bgs to approximately 549 feet bgs. The contact between the UAU and the MAU in the area occurs at approximately 250 feet bgs. Therefore, the well is currently screened across the UAU/MAU contact.

4.4 Early Response Action Soil Vapor Extraction, 2004-2007

In January 2004, ADEQ requested that SVE be implemented as an ERA to remove subsurface VOCs and to address intrusion of PCE and TCE vapors into the AMI building at concentrations above calculated risk-based levels (see Table 3). On June 26 through 27, 2004, VW-7 was drilled and installed at the former AMI facility. The approximate location is shown on Figure 2. VW-7 was drilled as a single boring with three nested VWs identified as VW-7A, VW-7B, and VW-7C. VW-7A was screened from 25 to 40 feet bgs, VW-7B was screened from 45 to 60 feet bgs, and VW-7C was screened from 68 to 98 feet bgs. Vapor wells VW-5 and VW-7 were

connected by piping to the existing SVE system on the east side of the building at the former AMI facility.

SVE was performed first on the Zone A VWs and then progressed downward to Zones B and C until PCE concentrations in the extracted vapor decreased and became consistent over multiple sampling events. PCE concentrations in the vapors extracted from VW-7B had become asymptotic, ranging from 120 parts per billion volume (ppbv) to 340 ppbv between May 2005 and March 2007. It was concluded at that time that short-circuiting between Zones A and B in VW-7B was possibly causing the asymptotic conditions. In April 2007, SVE was re-started on VW-7A. In August 2007, the SVE was moved from Zones A and B to Zone C. The SVE system operated on Zone C until October 12, 2007. Between September 2004 and October 2007, more than 168 pounds of PCE were removed from subsurface soils by the SVE system.

Following shut down of the SVE system, an indoor air quality sample was collected from the Suite 1 office at the former AMI facility. As shown in Table 3, the results indicated that the indoor air PCE and TCE concentrations were below the calculated risk-based levels. Based on the results of the SVE system monitoring, the SVE system was decommissioned and removed from the site in May 2008. All vapor wells were closed and abandoned in accordance with the Arizona Department of Water Resources (ADWR) well abandonment guidelines.

As part of the FS process, an additional confirmation indoor air quality sample was collected from the Suite 1 office at the former AMI facility on April 11, 2012. As shown in Table 3, this sample confirmed that the PCE and TCE concentrations in indoor air, which were non-detectable, were below the calculated risk-based levels.

5.0 INITIAL REMEDIAL STRATEGY SCREENING AND SELECTION OF REFERENCE AND ALTERNATIVE REMEDIES

Remedial strategies considered in the development of remedial alternatives per ACC R18-16-407F are as follows:

1. Plume remediation (PR): a strategy to achieve water quality standards for contaminants of concern in waters of the state throughout the site
2. Physical containment (PC): a strategy to contain contaminants within definite boundaries
3. Controlled migration (CM): a strategy to control the direction or rate of migration but not necessarily to contain migration of contaminants
4. Source control (SC): a strategy to eliminate or mitigate a continuing source of contamination
5. Monitoring (MON): a strategy to observe and evaluate the contamination at the site through the collection of data
6. No action (NA): a strategy that consists of no action at a site

In general, multiple remedial strategies are combined into appropriate remedies to address ROs and evaluated using the FS process. Due to the history of proactive interim remediation at the SMWRS, the following sections discuss remedial strategies in terms of how implemented actions have addressed the ROs for land and groundwater use to date. For ROs that have not

yet been achieved, remedial strategies are developed into a reference remedy and two alternative remedies for evaluation in Section 6.0.

5.1 Land Use

Based on human health risk screening, the exposure pathways that influence land use ROs at the SMWRS are direct contact with impacted soil and intrusion of PCE vapors into the on-site building at the former AMI facility (AMEC, 2013b). As discussed in Sections 4.2 and 4.4, ERAs using SVE have been conducted at the former AMI facility which were in effect SC and addressed both the concentrations of contaminants in soil and soil vapor to the extent that exposure pathways have been mitigated. On this basis, the ROs for land use have been achieved and NA is currently warranted for land use. No further development of remedies for land use ROs is necessary.

5.2 Groundwater Use

The groundwater ROs at the SMWRS protect the municipal use of water in the MAU as a drinking water supply and SRP's use of water for irrigation extracted from wells screened across both the UAU and the MAU. Multiple remedial actions and ERAs have been implemented to date to address groundwater ROs and are summarized by remedial strategy as follows:

Remedial Strategy							
Implemented Remedial Action	**PR**	**PC**	**CM**	**SC**	**MON**	**NA**	**Comments**
Pumping of SRP Well 28E-0N	X		X	X			Removed dissolved PCE mass from groundwater plume.
Pumping of SRP Well 28.5E-1N	X		X				Removed dissolved PCE mass from groundwater plume and controlled further migration to the northeast.
AMI SVE System Operation, 1995-1998	X		X	X			Removed VOC vapors from the vadose zone that were possibly contributing to groundwater impact.
Modification of SRP Well 28.5E-1N			X				Minimized vertical migration of PCE from UAU to the MAU.
AMI SVE System Operation, 2004-2008			X	X			Removed PCE and TCE vapor mass from the vadose zone.
Natural Attenuation	X		X				Contributed to decreases in PCE concentrations in monitoring well samples with time due to biologic, chemical, and physical processes.

Remedial Strategy							
Implemented Remedial Action	**PR**	**PC**	**CM**	**SC**	**MON**	**NA**	**Comments**
Monitoring					X		Facilitated documentation of the effects of implemented remedial actions.

These implemented remedial actions have significantly reduced contaminant concentrations in groundwater at the SMWRS, effectively addressed source control at the former AMI facility, and by default are incorporated into all remedial alternatives evaluated in this FS. However, they have not achieved ROs protecting groundwater use. Since contamination is currently confined to the UAU and this aquifer does not serve as a source of drinking water to the COM and TOG (the municipal wells in the vicinity of the current SMWRS groundwater plume are screened in the MAU), the current primary use that must be considered to achieve ROs at this time is SRP's right to extract and use groundwater from wells 28E-0N and 28.5-1N for irrigation purposes.

The objective is to delist the SMWRS; however, leaving PCE in the groundwater above the AWQS of 5.0 µg/L requires that the aquifer be designated a non-drinking water aquifer. Though not currently utilized as a drinking water supply, the UAU at the SMWRS is designated as a potential drinking water supply. Therefore, ADEQ cannot delist the SMWRS until PCE groundwater concentrations in the groundwater are below the AWQS of 5.0 µg/L. However, water use criteria can be used to select the final remedy. Since SRP's water quality criterion for this use is their risk-based action level (i.e., 33 µg/L of PCE), this concentration is the current water quality criterion for remedial action at the SMWRS. This remedial action criterion will be changed to 5.0 µg/L if/when SRP changes groundwater use for their wells to drinking water. As shown in Table 2, PCE has not been detected above the SRP risk-based action level in groundwater samples collected from UAU wells since June 2004 (a total of 12 sampling events). Although this suggests that use of the UAU by SRP is currently protected, the effect of pumping SRP wells on the nature and extent of the groundwater plume is unknown and must be addressed to achieve groundwater ROs. Remedy development for the site is based on addressing this issue and protecting both municipal and SRP groundwater use.

As previously indicated, the ERAs, which included operation of the SRP wells, removed a majority of the contaminant mass. The continued decrease in PCE concentrations in monitoring wells, most notably MW-5D, MW-7D, and MW-AM-8S, is likely due to changes in groundwater flow direction and natural attenuation by physical processes such as dilution and dispersion. Based on the results of the December 2012 groundwater sampling event, the maximum reported PCE concentration was 17 µg/L in the sample collected from Zone UAU3 well MW-11-200.

SRP wells 28E-0N and 28.5-1N have been inactive for several years. However, SRP has indicated that they intend to resume full-time or periodic pumping of wells 28E-0N and 28.5E-1N and use the water for irrigation. The previous pumping of the SRP wells has shown that they are capable of removing dissolved PCE mass. Therefore, operation of these wells may facilitate removing the remaining PCE mass to a level where PCE concentrations are below the AWQS of 5.0 µg/L without initiating additional remedial approaches. Therefore, the reference remedy

for the SMWRS includes monitoring groundwater and monitoring operation of SRP Wells 28E-0N and 28.5E-1N. As long as PCE concentrations remain below SRP acceptable levels, which will not require implementation of wellhead treatment, this is a feasible and cost effective approach to achieve the ROs and closure of the SMWRS. Monitoring will be used to ensure that PCE concentrations do not exceed concentrations that restrict SRP water use. This will also monitor for migration of the plume to the northeast if SRP Well 28.5E-1N is also pumped. Since there are no monitoring wells screened entirely in the MAU in the area, monitoring of groundwater extracted from appropriate COM and TOG municipal wells would be conducted to evaluate the potential future impact of the SMWRS plume on these MAU water supplies. If PCE is detected at SRP wells at concentrations that would restrict water use, then ADEQ will institute contingencies such as wellhead treatment to allow unrestricted water use by SRP.

The primary question for the reference remedy is how long will be required for the AWQS of 5.0 µg/L for PCE to be achieved under different pumping scenarios? The EPA has issued guidance on evaluating the effectiveness of pump-and-treat systems to achieve aquifer cleanup goals, specifically the time required. The EPA has determined that it is difficult to evaluate this time due to the following:

- Data is limited due to number of wells and spacing;
- Total contaminant mass, which is a combination of dissolved and sorbed mass, is difficult to estimate;
- The influence on the impacted volume is difficult to predict; and,
- The number of flushes of the pore water volume required to achieve the cleanup goal is difficult to calculate.

Groundwater modeling can be utilized to estimate the time to achieve cleanup levels; however, considering the current conditions and assumptions this may not be cost effective. The dissolved mass can be estimated making several assumptions. This is done by estimating the impacted volume of saturated soil and multiplying that by an estimated porosity to calculate the estimated volume of impacted water. An average PCE concentration can then be applied to estimate the dissolved mass. The dissolved PCE mass was estimated based on the following:

- The majority of the contaminant mass is present in Zones UAU1-UAU3;
- The contaminated saturated thickness is 200 feet, which extends from the water table at approximately 96 feet bgs to Zone UAU 3 at 200 feet bgs;
- The area of the PCE plume to 5.0 µg/L is approximately 1,620,00 square feet;
- The estimate porosity is 30%; and,
- The average PCE concentration is 13 µg/L.

Applying these estimates, one pore volume of water is approximately 378,500,000 gallons and the dissolved PCE weight is approximately 40 pounds. The EPA estimates that the sorbed mass

may be as high as six times the dissolved mass depending on soil type and organic carbon percentage; however, this is difficult to quantify. Considering the saturated soil at the SMWRS is predominantly coarse-grained with a low percentage of low plasticity clay and little to no organic carbon, the sorbed mass is likely less than three times the dissolved mass. Dissolved mass is removed by removing groundwater, referred to as pore water volume. However, the dissolved concentrations will not significantly decrease until the sorbed mass is also removed. This may require several flushes of the impacted pore water volume. Due to the kinetics and influence of pumping wells on the impacted saturated soil volume, as indicated previously this is difficult to calculate.

SRP well 28E-0N is located northeast and generally downgradient of the former AMI facility in relation groundwater flow direction. Therefore, the volume of water extracted from the impacted area must be estimated. SRP Well 28E-0N is screened from 120-373 feet bgs, with approximately the lower 123 feet screened in the MAU. The MAU has lower yield than the UAU at this location. Therefore, a majority of the water pumped by SRP Well 28E-0N originates from the UAU, possibly as much as 80 percent. Should groundwater continue to flow in a northeasterly direction, as much as 40 percent of the water extracted may originate from the contaminated area. Assuming the well pumps 2,000 gallons per minute (gpm), approximately 40 percent or 800 gpm may originate from the contaminated zone. Based on this, approximately one pore volume of water would be removed every 328 days of operation or 0.003 pore volumes per day of operation. If the extent of the plume is within the capture zone of SRP well 28E-0N and four pore water volumes are required to adequately flush dissolved and sorbed PCE mass to achieve the AWQS, then a minimum of four years of full-time operation will be required to reduce concentrations in the dissolved plume to less than 5.0 µg/L. If SRP only pumps SRP well 28E-0N for half the year, up to eight years may be required to achieve the same effect. SRP may pump both wells 28E-0N and 28.5E-1N; however, the plume is located nearest SRP Well 28E-0N. Therefore, as in the past, pumping of SRP Well 28E-0N will facilitate a majority of the dissolved mass removal. If SRP intends to pump well 28.5E-1N, in order to minimize migration of the PCE plume to the northeast as had occurred in the past, SRP should pump both 28E-0N and 28.5E-1N with a majority of the water pumped from 28E-0N.

Based on the current concentrations and dilution effects of pumping the well, it is unlikely that PCE will exceed the AWQS of 5.0 µg/L at the wellhead for SRP Well 28E-0N. Additionally, due to the current position of the plume and PCE concentrations, it is unlikely that PCE would exceed 5.0 µg/L at the wellhead for SRP Well 28.5E-1N, even if SRP Well 28E-0N is not pumped. However, pumping SRP Well 28E-0N is the optimal choice to facilitate mass removal. In the event PCE concentrations exceed SRP action levels at the wellheads, then wellhead treatment may be installed as a contingency.

In the event that the SRP Wells are not pumped in the immediate future, a flat groundwater gradient is expected with periodic fluctuations of groundwater flow direction from northeasterly to southwesterly. Therefore, the PCE plume would be expected to remain in the vicinity of the former AMI facility and several years will be required for the PCE concentrations to decrease below the AWQS of 5.0 µg/L.

A more aggressive alternative to the reference remedy would include all the remedial strategies of the reference remedy (i.e., PR and MON) plus in-situ chemical oxidation (ISCO) treatment of

the impacted groundwater at the former AMI facility. This is identified as a more aggressive alternative due to the requirement to install deep injection points and an injection system. ISCO, if properly delivered to the impacted media, has been proven to be a successful groundwater remedy. The EN Rx reagent, which is a catalyzed hydrogen peroxide based reagent, has been selected for the treatment. Based on the concentrations and extent of PCE at the former AMI facility, a limited EN Rx injection is expected to achieve the AWQS of 5.0 µg/L for PCE in the groundwater below the former AMI facility in one year. However, the five year monitoring program proposed for the reference remedy would still be included to evaluate any changes in PCE concentrations outside the former AMI facility or at the SRP wells. Wellhead treatment may still be implemented at SRP well 28E-0N as a contingency.

A less aggressive alternative to the reference remedy would include obtaining an alternative source of water to replace water lost from the SRP wells for as long as SRP cannot use the groundwater or abandonment and replacement of the SRP wells at the well sites if an alternate source can not be obtained or maintained. This alternative is considered less aggressive because of the reduction in proposed remedial activities. However, this alternative may be cost restrictive if an alternate source cannot be obtained or becomes unavailable with time and replacement wells are needed at the well sites.

Further description of remedial elements associated with these remedies and a discussion of how ROs will be addressed by each remedy is as follows:

Remedial Alternative	Description	Strategy Type	How ROs are Achieved
Reference Remedy Monitoring pumping of SRP Wells 28E-0N and 28.5-1N as needed depending on SRP pumpage, wellhead treatment included as a contingency.	A minimum five year monitoring program of selected existing monitoring wells, the SRP wells, and COM Well No.14. With the exception of COM Well No. 14, which will be sampled only once a year when operated, the monitor wells will be monitored bi-annually and SRP wells quarterly contingent on operation schedules. Water levels will be monitored quarterly. PCE concentrations in samples collected from monitoring wells and SRP wells must remain below 5.0 µg/L. In the event PCE concentrations in samples collected from the SRP wells exceed SRP risk-based levels during the above 5 year program or if water use designation is changed to drinking water, wellhead treatment may be installed as a contingency to achieve ROs.	PR CM MON	Removes dissolved PCE mass from the UAU and controls migration to the MAU. Therefore, both SRP and municipal uses are protected.

Remedial Alternative	Description	Strategy Type	How ROs are Achieved
More Aggressive Alternative Limited ISCO treatment at former AMI facility, monitoring pumping of SRP Wells 28E-0N and 28.5-1N, wellhead treatment included as a contingency.	In addition to the components of the reference remedy, a limited ISCO treatment will be performed at the former AMI facility.	SC PR CM MON	Same as the reference remedy plus removal of contaminant mass at the former AMI facility.
Less Aggressive Alternative Alternate source or modification of SRP Wells 28E-0N and 28.5E-1N	Includes obtaining an alternative source of water to replace water lost from the SRP wells for as long as SRP cannot use the groundwater or abandonment and replacement of the SRP wells if an alternate source cannot be obtained. The alternate source must meet the quantity lost and meet quality standards.	PC	Without pumping of SRP wells that are screened in the UAU, the plume will continue to attenuate with minimal to no migration. Groundwater monitoring would still be required because AWQS will not be achieved.

If the SRP wells are pumped, it will result in the removal of additional residual dissolved PCE mass from the UAU, which is considered beneficial and should further decrease PCE concentrations in the UAU. Therefore, no additional remedial alternatives for the UAU are being considered or are considered necessary. Alternative 2 above is considered the More Aggressive Alternative. Alternative 3 is a Less Aggressive Alternative. However, based on the current PCE concentrations at the monitoring wells and historic data, it is unlikely that PCE concentrations at the wellheads for the SRP wells will exceed 5.0 µg/L during the minimum five year groundwater monitoring program. However, if/when SRP changes their water use designation to drinking water and PCE concentrations exceed 5.0 µg/L, then either alternative may become the required remedial action.

6.0 REMEDY COMPARISON

In accordance with A.A.C. R18-16-407 (H) (2-3), each remedial alternative is compared using the following:

1. An evaluation of consistency with the water management plans of affected water providers and the general land use plans of local governments with land use jurisdiction.
2. An evaluation of comparison criteria, including:

- Practicability of the alternative, including its feasibility, short and long term effectiveness, and reliability;

- Risk, including fate and transport of contaminants, assessment of current and future land and resource use, exposure pathways and duration of exposure, protection of health and biota during and after implementation of remedial action, and residual risk in aquifer at end of remediation;

- Cost of remedial alternative, including capital, operating, maintenance, life cycle, and transactional costs;

- Benefit or value of remediation, including lowered risk, reduction in concentration or volume, decreased liability, acceptance by public, aesthetics, enhancement of future uses, and improvement to local economics; and,

- Discussion of comparison criteria in relation to each other.

The proposed remedy must meet the requirements provided in A.R.S §49-282.06 (A) as listed below:

- Assure the protection of public health and welfare and the environment;

- To the extent practicable, provide for the control, management, or cleanup of the hazardous substances so as to allow for the maximum beneficial use of the waters of the state; and,

- Be reasonable, necessary, cost effective, and technically feasible.

The alternatives being evaluated are:

1. Reference Remedy - five year monitoring program during possible pumping of SRP wells for PR with MNA or closure after five years depending on PCE concentrations in groundwater, including wellhead treatment, if necessary, as a contingency.
2. More Aggressive Alternative - the reference remedy plus limited ISCO treatment at the former AMI facility as PR including wellhead treatment at SRP wells, if necessary, as a contingency.
3. Less Aggressive Alternative - obtain an alternative source of water to replace water lost from the SRP wells for as long as SRP cannot use the groundwater or abandonment and replacement of the SRP wells with MON and PR via MNA until PCE concentrations are consistently less than the AWQS of 5.0 µg/L. Water replacement must be the quantity lost and meet SRP quality requirements.

The alternatives are listed and evaluated in Table 4 and are discussed in the following subsections.

6.1 Reference Remedy

The reference remedy requires monitoring of monitoring wells and the SRP wells if/when pumped during a five year groundwater monitoring period. This approach is intended to monitor PCE migration and attenuation while possibly removing additional dissolved contaminant mass from the UAU and will protect the SRP water use in the area. Over this five year period, groundwater sampling will be performed twice annually, in January and July of each year at monitoring wells and quarterly at SRP wells each year when the wells are pumped. This will capture water quality data during winter and summer pumping schedules. Water levels will also be measured quarterly to evaluate seasonal changes in groundwater flow direction. This should be a sufficient time period to evaluate changes in groundwater concentrations in the UAU if/when the SRP wells are pumping. Groundwater samples will be collected from SRP wells during pumping pending access agreements and scheduling with SRP. In the event COM Well No. 14 is pumped, water samples should be collected and analyzed for VOCs. ADEQ will request these data from the COM. During this five year monitoring period, if PCE concentrations in the samples from the SRP wells do not exceed the risk-based PCE concentration of 33 µg/L for irrigation use (or 5.0 µg/L if SRP changes the water use designation to drinking water) and the samples collected from COM Well No. 14 do not exceed the drinking water standard of 5.0 µg/L, then groundwater monitoring will be continued until PCE concentrations in all groundwater monitor wells stabilize at a concentration less than the AWQS of 5.0 µg/L. This alternative protects water uses in the area, achieves the ROs, and meets the above listed requirements.

For cost estimation purposes, the monitoring program will consist of the following:

- Depth to water in wells MW-1S, MW-1D, MW-2D, MW-3S, MW-4S, MW-5S, MW-5D, MW-6D, MW-7D, MW-AM-8S, MW9-130, MW9-175, MW9-205, MW9-235, MW10-130, MW10-170, MW10-235, MW11-170, MW11-200, MW11-240, MW12-140, MW12-180, MW12-210, MW12-240, MW-14-130, MW-14-170, MW14-200, MW14-230, SRP 28E-0N, and 28.5E-1N will be measured quarterly each year (July, October, January and April in accordance with ADEQ fiscal year) pending access by SRP.

- Groundwater samples will be collected in July and January of each ADEQ fiscal year from conventional monitoring wells MW-1S/MW-1D, MW-2S, MW-2D, MW-3S, MW-4S, MW-5S, MW-5D, MW-7D and MW-AM-8S and from BARCAD wells MW9-130, MW9-175, MW9-205, MW9-235, MW10-130, MW10-170, MW10-235, MW11-170, MW11-200, MW11-240, MW14-130, MW14-170, MW14-200, and MW14-230. Groundwater samples will be collected quarterly by ADEQ or SRP from SRP wells 28E-0N and 28.5E-1N. A total of 38 samples, including duplicate samples, will be collected. The groundwater samples will be analyzed for VOCs using EPA Method 8260B.

After the April groundwater monitoring event is completed, an annual groundwater monitoring report will be prepared. The report prepared for the fifth year will represent a Periodic Review Report. If PCE concentrations have been below the AWQS of 5.0 µg/L in the samples collected from all wells for at least two consecutive sampling events, including the final sampling event, then the Periodic Review Report will recommend closure of the site. The estimated cost for the first year monitoring program is $27,300. Applying a three percent annual escalation, the

second year will cost $28,200, the third year $28,960, the fourth year $29,830, and the fifth year $30,700. The total estimated cost is $144,990.

As a contingency to this remedy, in the event PCE concentrations in water samples collected from the SRP wells exceeds the risk-based PCE concentration of 33 µg/L for irrigation use or 5.0 µg/L if SRP changes the water use designation to drinking water, a wellhead treatment program will be implemented. Groundwater monitoring will continue while wellhead treatment is implemented at the SRP wells using a series of granular activated carbon (GAC) vessels to treat SRP well effluent. AMEC contacted Siemens for a budgetary cost estimate to install and service a GAC wellhead treatment system. Siemens quoted four HP1220SYS-S model treatment vessels, each containing 20,000 pounds of GAC. The cost for installation and initial fill of GAC is $620,000, including installation of concrete support pads. Therefore, the total cost to install wellhead treatment systems on both SRP wells is $1,240,000 including concrete pads. GAC in two vessels will be replaced during each servicing event at a cost of $34,000. The wellhead treatment system will be operated until PCE concentrations in samples collected from the pump discharge are below 33 µg/L or 5.0 µg/L for four consecutive sampling events. Estimating one GAC vessel change-out per year per SRP well for a five year time frame plus time and materials for profiling and oversight would result in an additional cost of approximately $357,500 over the five year period.

6.2 More Aggressive Remedy

The more aggressive remedy is the reference remedy plus limited ISCO at the former AMI facility as PR including wellhead treatment at SRP wells, if necessary, as a contingency. This is considered more aggressive due to the requirement for installation of injection wells and construction of the remediation system. For cost estimation purposes, the EN Rx Feedback Optimized Continuous Injection System (FOCIS) is proposed to deliver the EN Rx reagent, which is a sodium catalyzed hydrogen peroxide reagent. This reagent provides the high oxidation potential to safely breakdown chlorinated solvents into inert compounds without generation of more hazardous daughter products. Unlike other chemical oxidants used for chlorinated solvents, such as permanganate, EN Rx is relative safe to mix and deliver. EN Rx has proposed the SmartFOCIS, which provides the following benefits:

- Slower injection offers more control, less forcing of reagents.
- More oxidant can be loaded and more contact can be achieved without the limitation of time and building up pressures.
- A longer injection time allows more matrix diffusion thus limiting rebound.
- Less initial time onsite and less manpower over the course of the pilot project with better operational monitoring.
- Injection may be programmed and adjusted to enhance dispersion.
- More control of injection. Runtime and cycles can be adjusted remotely.

- Feedback can be logged and tracked remotely. The SmartFOCIS also monitors tank levels and power, and other peripheral qualities.

- Adaptation is possible. The SmartFOCIS allows more wells, and more expandability for future use.

- Ability to retain the system and extend treatment time and the number of treatment wells as desired without an additional demobilization/mobilization.

A supply of water will be required to operate the system. Electrical power to operate the controls can be provided by a solar panel and battery. For the limited treatment at the former AMI facility, EN Rx has provided a cost estimate of $100,000 for the equipment and chemicals. The injection will be conducted over a period of six months; however, the chemicals remain active in the subsurface for up to three months after the injection is completed. A total of four nested (4 interval) injector wells will be installed using the sonic drilling method, with the deepest interval being installed to 230 feet bgs. Due to this depth, a total of five days is anticipated for installation of each well. Due to the limited space and size of the drilling platform, this will cause disruptions for the businesses that currently occupy the property. Total estimated cost for installation of the injection wells is $148,000. The construction cost for subsurface piping to route oxidant tubing to the wellheads is $8,000 and the cost estimate for operation and maintenance over the six month injection period is $5,000 (labor, water, and equipment). Therefore, the total estimated cost to install and operate the ISCO system is $261,000.

The more aggressive remedy also assumes the SRP wells will be pumped and includes monitoring operation of the SRP wells over the five year period presented by the reference remedy. including wellhead treatment at SRP wells, if necessary, as a contingency. Therefore, the total estimated cost for the more aggressive remedy is $399,990, without the contingency wellhead treatment. The contingency could add up to an additional $1.6 million.

This remedy is considered reasonable and cost effective. However, due to disruptions to businesses and site access during construction, it is difficult to implement.

6.3 Less Aggressive Remedy

The less aggressive remedy is intended to minimize exposure to impacted groundwater within the UAU due to pumping of SRP wells. An alternative source of water may be available to replace groundwater lost because of the contamination in the groundwater. Wells 28.5E-1N and 28E-0N will be abandoned in a manner that seals the portions of the wells that screen across the UAU/MAU contact. If an alternate source of water is not available, the wells will be replaced at the same location as the abandoned wells and screened entirely within the MAU. This contingency is considered because of the lack of water available via the Central Arizona Project (CAP) and the uncertainty of other potential sources. For cost estimation purposes, ADEQ has based water needs for SRP well 28E-0N on the volume pumped during the ERA and for SRP well 28.5E-1N using the volume reported during June and July 2012. The estimated volume of water needed was then multiplied by fees presented on the CAP website for an estimate of $48.9 million for both wells for a period of ten years (CAP fees are used to calculate costs to understand the possible expense even though CAP water will not be available). Note that another source of water at a reduced rate may be available and will be pursued.

Alternatively, for cost estimation purposes, the replacement wells will be installed to a depth of 880 feet bgs. The well casing will be a minimum of 20 inches in diameter and will be screened from approximately 400-880 feet bgs, which is similar to the construction of the replacement well for COM-14. The estimated cost to abandon and replace the SRP wells is $1,500,000 each. The UAU in the area is designated as a potential drinking water supply; therefore, PCE must be remediated below the AWQS of 5.0 µg/L for closure to be considered. Currently, PCE exceeds the AWQS of 5.0 µg/L only in wells located at the former AMI facility. Several years of monitoring may still be required to determine that the remedial goals have been achieved and the SMWRS is eligible for closure.

6.4 Summary

The three alternatives evaluated will meet the RO's, with the least aggressive alternative meeting the RO's in the greatest amount of time and the most aggressive alternative meeting the RO's in the least amount of time. The remedial alternatives have been evaluated in relation to each other in this section and in Table 4. The evaluation per assessment factor is summarized below:

- **Practicability.** The reference remedy and more aggressive alternative are considered feasible and will provide both short-term and long-term effectiveness. Implementation of the more aggressive remedy is more difficult due to access limitations. The less aggressive alternative is considered the least practicable of the three alternatives due to logistics and unknown costs associated with obtaining an alternative water source or replacing the SRP wells.

- **Risk.** All three alternatives provide overall protection of human health and the environment. However, the reference remedy and most aggressive remedy remove dissolved PCE from the UAU.

- **Cost.** The reference remedy is the least costly of the three alternatives. The less aggressive alternative is possibly the most costly alternative.

- **Benefit.** Both the reference and more aggressive remedies provide the greatest benefit of the three in that they actively remove contamination from the aquifer while controlling migration. The most aggressive remedy has the added benefit of removing the contamination more efficiently and quickly; however, the reference remedy is more cost effective and easier to implement.

All three alternatives will meet the water use plans of SRP, COM, and TOG, which were used to establish the RO's.

7.0 REMEDY SELECTION

Based on the results of this FS, the reference remedy is recommended as the final remedy. If PCE concentrations do not exceed 5.0 µg/L during the five year monitoring period, then a recommendation will be made for closure of the SMWRS. If PCE concentrations in the pump discharge for SRP well 28E-0N and/or SRP well 28.5E-1N exceed 33 µg/L or 5.0 µg/L if the use

designation changes to drinking water during the five year monitoring period, then wellhead treatment may be installed on the wells as a contingency.

This FS has demonstrated that the reference remedy will achieve the ROs and describes how the comparison criteria were considered. The reference remedy also meets the requirements of A.R.S §49-282.06 as follows:

Requirement	Does remedy meet this requirement and how?
Assures the protection of public health and welfare of the environment.	Yes. The only user of the UAU in the area is SRP and the water is currently not used for drinking water purposes. PCE concentrations are currently below the risk-based level of 33 µg/L established by SRP for the intended use of the water. COM Well No. 14 is not impacted with PCE above drinking water standards.
Provides for the control, management, or cleanup of the hazardous substances in order to allow the maximum beneficial use of the waters of the state.	Yes. PCE concentrations are currently below the risk-based level of 33 µg/L established by SRP for the intended use of the water. The recommended five year monitoring program is intended to confirm that this does not change.
Be reasonable, necessary, cost effective, and technically feasible.	Yes. The reference remedy is considered both reasonable and necessary and is considered the least costly of the three evaluated remedial alternatives. The reference remedy is technically feasible because existing wells will be used for the monitoring program.
Must be fully integrated with the results of the RI and shall include an alternative screening step to select a reasonable number of alternatives in a manner consistent with the rules and procedures adopted pursuant to A.R.S §49-282.06	Yes. The Conceptual Site Model is based on the results of the RI. There is also data presented in the FS that was collected after the RI was completed.

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TABLES

Table 1. South Mesa WQARF Registry Site Monitoring Well Information										
Well I.D	Well Type	Casing Size and Material	Measuring Point	Measuring Point Elevation (ft. AMSL)	Well Depth (ft.)	Screened Interval Depth (ft.)	Screened Interval Elevation (ft. AMSL)	Sampling Depth from Measuring Point (ft.)	Sampling Pump Elevation (ft. AMSL)	Zone
MW-1S	Monitor	4.5" PVC	Top of well cap	1,212.67	175	120-170	1092–1042	160	1,053	UAU2
MW-1D	Monitor	4.5" PVC	Top of well cap	1,212.81	260	235-255	977-957	245	968	UAU4
MW-2D	Monitor	4.5" PVC	Top of well cap	1,226.36	260	165-255	1061-971	195	1,031	UAU3
MW-3S	Monitor	4.5" PVC	Top of well cap	1,221.92	232	177-227	1045-995	202	1,020	UAU3
MW-4S	Monitor	4.5" PVC	Top of well cap	1,221.55	194	129-189	1093-1033	160	1,062	UAU2
MW-5S	Monitor	4.5" PVC	Top of well cap	1,216.27	180	125-175	1091-1041	160	1,056	UAU2
MW-5D	Monitor	4.5" PVC	Top of well cap	1,216.25	239	204-234	1012-982	208	1,008	UAU3
MW-6D	Monitor	4.5" PVC	Top of well cap	1,210.91	300	265-295	946-916	272	939	MAU
MW-7D[1]	Monitor	4.5" PVC	Top of well casing	Not measured	225	190-220	1025-995	192	1,023	UAU3
MW-AM-8S	Monitor	4.5" Steel	Top of well cap	1,211.16	172	127-167	1086-1046	157	1,053	UAU2
MW-9-130	BARCAD	1" PVC	Top of well casing	1,211.05	133	130-133	1081-1078	130	1081	UAU1
MW-9-175	BARCAD	1" PVC	Top of well casing	1,211.09	176	173-176	1038-1035	175	1036	UAU2
MW-9-205	BARCAD	1" PVC	Top of well casing	1,211.12	208	205-208	1006-1003	205	1006	UAU3
MW-9-235	BARCAD	1" PVC	Top of well casing	1,211.11	236	233-236	978-975	235	976	UAU4
MW-10-130	BARCAD	1" PVC	Top of well casing	1,211.31	131	128-131	1083-1080	130	1081	UAU1

Table 1. South Mesa WQARF Registry Site Monitoring Well Information										
Well I.D	Well Type	Casing Size and Material	Measuring Point	Measuring Point Elevation (ft. AMSL)	Well Depth (ft.)	Screened Interval Depth (ft.)	Screened Interval Elevation (ft. AMSL)	Sampling Depth from Measuring Point (ft.)	Sampling Pump Elevation (ft. AMSL)	Zone
MW-10-170	BARCAD	1" PVC	Top of well casing	1,211.27	171	168-171	1043-1040	170	1041	UAU2
MW-10-235	BARCAD	1" PVC	Top of well casing	1,211.3	238	235-238	976-973	235	976	UAU4
MW-11-170	BARCAD	1" PVC	Top of well casing	1,211.32	168	165-168	1049-1046	168	1043	UAU2
MW-11-200	BARCAD	1" PVC	Top of well casing	1,211.24	200	197-200	1014-1011	200	1011	UAU3
MW-11-240	BARCAD	1" PVC	Top of well casing	1,211.4	240	237-240	974-971	240	971	UAU4
MW-12-159	BARCAD	1" PVC	Top of well casing	1,225.46	159	156-159	1069-1066	159	1066	UAU1
MW-12-183	BARCAD	1" PVC	Top of well casing	1,225.66	183	180-183	1046-1043	183	1048	UAU2
MW-12-217	BARCAD	1" PVC	Top of well casing	1,225.64	217	214-217	1012-1009	217	1009	UAU3
MW-12-237	BARCAD	1" PVC	Top of well casing	1,225.68	237	234-237	992-995	237	995	UAU4
MW-14-130	BARCAD	1" PVC	Top of well casing	1,213.02	130	127-130	1086-1083	130	1083	UAU1
MW-14-163	BARCAD	1" PVC	Top of well casing	1,213.13	163	160-163	1053-1050	163	1050	UAU2
MW-14-186	BARCAD	1" PVC	Top of well casing	1,212.72	186	183-186	1030-1027	186	1027	UAU3
MW-14-215	BARCAD	1" PVC	Top of well casing	1,212.94	215	212-215	1001 – 998	215	998	UAU4
MW-LW (Lewis)	Monitor	8" Steel	Top of well cap	1,212.34	186	157-186	1055-1026	NA	NA	UAU2
SRP Well 28E-0N	Production	10" Steel	Not measured	NA	394	120-373	NA	NA	NA	MAU

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-1S	UAU2	5/22/1991	0.3	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		10/30/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	<0.020	<0.010	NA
		2/20/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.04	<0.010	NA
		5/22/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.04	<0.010	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/27/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/12/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	0.8	<0.50	NR	NA	NA	NA	NA	NA
		1/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/11/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/6/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/21/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		9/26/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/13/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/27/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	0.015	<0.50	<0.050	<0.050
		7/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.005	0.067	0.92	0.025	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0037	0.024	0.13	<0.020	<0.050
		12/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.0030	0.0098	0.36	<0.020	<0.050
		3/6/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0037	0.012	0.15	<0.020	<0.050
		9/5/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/18/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	0.56	<0.50	<0.50	<0.50	TCFME - 3.1	NS	NS	NS	NS	NS
MW-1S-130 DBS	UAU1	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-1S-170 DBS	UAU2	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-1D	UAU4	5/22/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		10/30/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.022	<0.010	NA
		2/20/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.043	<0.010	NA
		5/22/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.036	<0.010	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/12/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/12/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/11/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/6/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-1D	UAU4	10/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/21/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/26/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/27/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	1.7	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/27/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	<0.010	0.81	<0.050	<0.050
		7/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0053	0.013	2.2	0.044	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0035	0.063	0.91	<0.020	<0.050
		12/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0033	0.0097	0.45	<0.020	<0.050
		3/6/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0031	0.0089	<0.10	<0.020	<0.050
		9/5/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/18/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	0.59	<0.50	<0.50	<0.50	TCFME - 15	NS	NS	NS	NS	NS
MW-2D	UAU3	5/22/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/30/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.05	<0.010	NA
		2/20/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.057	<0.010	NA
		5/22/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.062	<0.010	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/27/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	17	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/14/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/11/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/6/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/21/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/24/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/27/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/27/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	<0.010	1.0	<0.050	<0.050
		7/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0033	0.0081	0.18	<0.020	<0.050
		9/20/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0035	**0.10**	0.68	<0.020	<0.050
		12/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0041	0.051	0.47	<0.020	<0.050
		3/7/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0033	0.035	<0.10	<0.020	<0.050
		9/5/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.050	<0.010	<0.20	<0.020	<0.050
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-2D	UAU3	7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/17/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-2D-180 DBS	UAU2	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-2D-210 DBS	UAU3	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-2D-240 DBS	UAU4	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-3S	UAU3	5/22/1991	1.2	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		10/30/1991	1.3	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.043	<0.010	NA
		2/20/1992	1.5	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.059	<0.010	NA
		5/22/1992	1.9	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.024	<0.010	NA
		8/14/1992	1	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		2/18/1993	1.2	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	0.7	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/27/1994	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/14/1994	0.8	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50/1.7D	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/11/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/6/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/21/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/24/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/13/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/14/1997	0.7	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/28/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	<0.010	1.2	<0.050	<0.050
		7/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0036	0.04	0.47	0.022	<0.050
		9/20/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0033	0.031	0.19	<0.020	<0.050
		12/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0041	0.093	0.42	<0.020	<0.050
		3/7/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0039	0.019	0.35	<0.020	<0.050
		9/5/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.050	<0.010	<0.20	<0.020	<0.050
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/17/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-3S	UAU3	9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3S-225 DBS	UAU4	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-4S	UAU2	5/22/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	0.5/0.5D	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		10/30/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.064	<0.010	NA
		2/20/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.063	<0.010	NA
		5/22/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.064	<0.010	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/11/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/12/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/11/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/6/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/21/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/24/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/28/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0051	0.098	2.3	0.11	<0.050
		9/20/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0043	0.048	0.77	0.022	<0.050
		3/6/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0032	0.015	0.57	<0.020	<0.050
		9/5/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/17/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	0.63	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	NR	NS	NS	NS	NS	NS
MW-4S-135 DBS	UAU1	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-4S-175 DBS	UAU2	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-5S	UAU2	5/22/1991	0.7	<0.20	0.6	<0.20	7.5	<0.20	NA	NA	**33**	3.6	<0.20	1.5	NR	NA	NA	NA	NA	NA
		10/30/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	**27**	<0.50	<0.20	1	NR	NA	NA	0.118	<0.010	NA
		2/20/1992	0.5	<0.20	0.6	0.2	5.9	<0.20	NA	NA	**25**	<0.50	<0.20	1.3	NR	NA	NA	0.033	<0.010	NA
		5/22/1992	0.7	<0.20	0.5	<0.20	4.8	<0.20	NA	NA	**20.3**	<0.50	<0.20	0.9	NR	NA	NA	0.052	0.176	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	1.9	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	0.7	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		2/18/1993	0.4	<0.20	<0.20	<0.20	0.4	<0.20	NA	NA	2.9	<0.50	0.3	0.2	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-5S	UAU2	5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	1.5	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/11/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	**7.8**	1.4	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/14/1994	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		1/5/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	**7.8**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/12/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	2.2	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/7/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	4.1	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/5/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	1.0	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/22/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	3.9	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/24/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	0.6	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/13/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	0.97	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/30/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	13	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/15/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	0.57	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	0.65	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	0.78	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/28/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	0.013	1.6	<0.050	<0.050
		7/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.004	0.0072	0.16	<0.020	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0035	0.028	0.18	<0.020	<0.050
		12/5/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.003	0.044	0.39	<0.020	<0.050
		3/7/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0037	0.011	0.2	<0.020	<0.050
		9/5/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/17/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	0.79	<0.50	<0.50	<0.50	NR	NS	NS	NS	NS	NS
MW-5S-130 DBS	UAU1	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.3	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-5S-170 DBS	UAU2	1/9/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
MW-5D	UAU3	5/22/1991	<0.20	<0.20	0.6	1.5	9.9	<0.20	NA	NA	**64**	17	0.5	2.9	NR	NA	NA	NA	NA	NA
		10/30/1991	<0.20	<0.20	0.2	0.8	<0.2	<0.20	NA	NA	**53**	5.5	<0.20	1.8	NR	NA	NA	0.116	<0.010	NA
		2/20/1992	0.4	<0.20	0.6	1.0	6.6	<0.20	NA	NA	**46**	7.9	<0.20	1.9	NR	NA	NA	0.061	<0.010	NA
		5/22/1992	<0.20	<0.20	0.5	0.7	6.7	<0.20	NA	NA	**35.9**	1.4	<0.20	1.3	NR	NA	NA	<0.020	<0.010	NA
		8/14/1992	<0.20	0.3	<0.20	<0.20	3.3	<0.20	NA	NA	**23.6**	<0.50	<0.20	0.8	NR	NA	NA	NA	NA	NA
		11/19/1992	0.4	<0.20	0.3	0.4	2.9	<0.20	NA	NA	**14.1**	<0.50	<0.20	0.9	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	0.5	0.7	6.2	<0.20	NA	NA	**41**	<0.50	<0.20	1.5	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	0.4/0.3D	3.9/3.6D	<0.20	NA	NA	**44/39D**	<0.50	<0.20	1.0/1.1D	NR	NA	NA	NA	NA	NA
		1/11/1994	<2.5	<2.5	<2.5	<2.5	8.2	<2.5	NA	NA	**48**	<2.5	<2.5	<2.5	NR	NA	NA	NA	NA	NA
		9/14/1994	<0.50	<0.50	0.8	1	4.3	<0.50	NA	NA	**40**	<0.50	<0.50	1.6	NR	NA	NA	NA	NA	NA
		1/5/1995	<0.50	<0.50	<0.50	0.8	<0.50	<0.50	NA	NA	**46**	<0.50	<0.50	1.2	NR	NA	NA	NA	NA	NA
		4/12/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/7/1995	<0.50	<0.50	<0.50	0.6	4.2	<0.50	NA	NA	**34**	5.3	<0.50	1.3	NR	NA	NA	NA	NA	NA
		10/5/1995	<0.50	<0.50	<0.50	0.6	4.6	<0.50	NA	NA	**36**	61	<0.50	1.3	NR	NA	NA	NA	NA	NA
		2/22/1996	<0.50	<0.50	<0.50	0.7	3.3	<0.50	NA	NA	**23**	2.8	<0.50	1.7	NR	<0.10	<0.05	<0.05	<0.05	<0.05
		9/24/1996	<0.50	<0.50	<0.50	0.6	4.6	<0.50	NA	NA	**36**	61	<0.50	1.6	NR	<1.0	<0.10	<1.0	<0.10	<0.10
		1/13/1997	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	NA	NA	**13**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/15/1997	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	NA	NA	**12**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/15/1997	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	NA	NA	**13**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	1.0/1.1D	<0.50	NA	NA	**10/10D**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-5D	UAU3	4/20/1998	<0.50	<0.50	<0.50	<0.50	0.87/0.84D	<0.50	NA	NA	**7.5/7.1D**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/28/1998	<0.50	<0.50	<0.50	<0.50	0.53	<0.50	NA	NA	**6.7**	<0.50	<0.50	<0.50	NR	<0.050	<0.010	<0.50	<0.050	<0.050
		7/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**7.4/7.3D**	<2.0	<2.0	<2.0	NR	0.0062	0.032	1.1	<0.020	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**6.6**	<2.0	<2.0	<2.0	NR	<0.0030	0.019	0.3	<0.020	<0.050
		12/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**8.4**	<2.0	<2.0	<2.0	NR	0.0049	0.039	1.7	0.059	<0.050
		3/6/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**6.4**	<2.0	<2.0	<2.0	NR	0.0044	0.014	0.55	<0.020	<0.050
		9/5/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**9.2**	<2.0	<2.0	<2.0	NR	<0.050	<0.010	<0.20	<0.020	<0.050
		12/20/2001	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.4**	<2.0	<1.0	<1.0	NR	<0.050	<0.010	<0.20	<0.020	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.7**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.6	<2.0	<1.0	1.4	NR	NA	NA	NA	NA	NA
		12/13/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/1/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/13/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**7.8/8.7D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/31/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**7.9**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/1/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**11**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/17/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**6.6**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/3/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/5/2008	<2.0	<2.0	<2.0	<2.0	0.53	<2.0	<10	<5.0	3.5	<2.0	<2.0	1.4	NR	NA	NA	NA	NA	NA
		9/8/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.8**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/3/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.0	2.7	<1.0	<1.0	XYL - 3.1 TCFME - 4.9	NA	NA	NA	NA	NA
		12/18/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/19/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	2.9	<0.50	<0.50	<0.50	TCFME - 1.5	NA	NA	NA	NA	NA
MW-6D	MAU	5/22/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/30/1991	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	<0.020	<0.010	NA
		2/20/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.023	<0.010	NA
		5/22/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.021	<0.010	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	0.3	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/11/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/14/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/5/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/12/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/7/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/5/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/22/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.10	<0.05	0.12	<0.05	<0.05
		9/24/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<1.0	<0.10	<1.0	<0.10	<0.10
		1/13/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/15/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/15/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/21/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/28/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	<0.010	<0.50	<0.050	<0.050
		7/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.0030	0.0074	0.14	<0.020	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.0030	0.021	0.25	<0.020	<0.050
		12/5/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.0030	0.0091	0.15	<0.020	<0.050
		3/6/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0031	<0.0040	0.12	<0.020	<0.050
		9/5/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-6D	MAU	5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/17/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7D	UAU3	12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/22/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/30/1991	<0.20/0.4D	<0.20	<0.2/0.2D	<0.2/0.3D	<0.2/7.4D	<0.20	NA	NA	**32/34D**	6.3/4.8D	<0.20	1.4/1.5D	NR	NA	NA	<0.020	0.021	NA
		2/20/1992	<0.20	<0.20	0.3	0.4	8.4	<0.20	NA	NA	**32**	<0.5	<0.20	1.6	NR	NA	NA	0.054	0.014	NA
		5/22/1992	<0.20	<0.20	0.3	0.3	8.5	<0.20	NA	NA	**37.6**	1.1	<0.20	1.6	NR	NA	NA	0.055	<0.010	NA
		8/14/1992	<0.20	<0.20	0.3	0.3	7.5	<0.20	NA	NA	**38.4**	<0.50	<0.20	1.6	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	0.6	0.8	8.6	<0.20	NA	NA	**48.1**	<0.50	<0.20	2.2	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	0.4	0.7	6.6	<0.20	NA	NA	**43**	<0.50	<0.20	1.8	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	0.4	<0.20	NA	NA	**44**	<0.50	<0.20	1.1	NR	NA	NA	NA	NA	NA
		1/11/1994	<0.50	<0.50	<0.50	1.2	3.8	<0.50	NA	NA	**35**	<0.50	<0.50	2.1	NR	NA	NA	NA	NA	NA
		9/14/1994	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	NA	NA	**22**	<0.50	<0.50	1.0	NR	NA	NA	NA	NA	NA
		1/5/1995	<0.50	<0.50	<0.50	0.6	3.1	<0.50	NA	NA	**32**	<0.50	<0.50	1.0	NR	NA	NA	NA	NA	NA
		4/12/1995	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	NA	NA	**29**	<0.50	<0.50	1.3	NR	NA	NA	NA	NA	NA
		7/7/1995	<0.50	<0.50	<0.50	<0.50	2.6	<0.50	NA	NA	**26**	<0.50	<0.50	1.0	NR	NA	NA	NA	NA	NA
		10/5/1995	<0.50	<0.50	<0.50	0.6	2.5	<0.50	NA	NA	**23**	<0.50	<0.50	1.7	NR	NA	NA	NA	NA	NA
		2/21/1996	<0.50	<0.50	<0.50	0.8	1.9	<0.50	NA	NA	**21**	<0.50	<0.50	1.6	NR	<0.10	<0.05	<0.05	<0.05	<0.05
		9/25/1996	<0.50	<0.50	<0.50	<0.50	0.84/<0.5D	<0.50	NA	NA	**11/12D**	<0.50	<0.50	<0.50	NR	<1.0	<0.10	<1.0	<0.10	<0.10
		1/13/1997	<0.50	<0.50	<0.50	<0.50	1.5/1.4D	<0.50	NA	NA	**16/15D**	<0.50	<0.50	0.51/<0.5D	NR	NA	NA	NA	NA	NA
		4/15/1997	<0.50	<0.50	<0.50	<0.50	1.8	<0.50	NA	NA	**22**	<0.50	<0.50	0.73	NR	NA	NA	NA	NA	NA
		7/14/1997	<1.3	<1.3	<1.3	<1.3	2.3/2.3D	<1.3	NA	NA	**28/27D**	<0.50	<0.50	<1.3	NR	NA	NA	NA	NA	NA
		1/21/1998	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	NA	NA	**36**	<1.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		4/21/1998	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	NA	NA	**35**	<2.5	<2.5	<2.5	NR	NA	NA	NA	NA	NA
		10/28/1998	<0.50	<0.50	<0.50	0.63	1.4	<0.50	NA	NA	**30**	<0.50	<0.50	<0.50	NR	<0.050	<0.010	<0.50	<0.050	<0.050
		7/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**30**	<2.0	<2.0	<2.0	NR	0.0034	0.0068	1.4	0.036	<0.050
		9/20/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**29/29D**	<2.0	<2.0	<2.0	NR	<0.0030	0.013	0.4	0.021	<0.050
		12/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**41/42D**	<2.0	<2.0	<2.0	NR	<0.0030	0.017	0.98	0.027	**0.11**
		3/7/2001	<2.0	<2.0	<2.0	<2.0	2.0/2.3D	<2.0	<10	<5.0	**34/35D**	<2.0	<2.0	<2.0	NR	0.003	0.0093	0.19	<0.020	<0.050
		9/5/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**40**	<2.0	<2.0	<2.0	NR	<0.050	<0.010	0.22	<0.020	<0.050
		12/20/2001	<1.0	<1.0	<1.0	<2.0	2.0/1.8D	<1.0	<10	<5.0	**31/32D**	<2.0	<1.0	<1.0	NR	<0.050	<0.010	0.72	<0.020	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	1.9/1.9D	<1.0	<10	<5.0	**30/31D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	<1.0	<1.0	<1.0	<2.0	1.2	<1.0	<10	<5.0	**12**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/13/2004	<1.0	<1.0	<1.0	<2.0	1.2	<1.0	<10	<5.0	**9.4**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/1/2005	<1.0/<1.0D	<1.0/<1.0D	<1.0/<1.0D	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	<10/<10D	<5.0/<5.0D	**9.2/12D**	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	NR	NA	NA	NA	NA	NA
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		5/31/2006	<1.0	<1.0	<1.0	<2.0	1.3	<1.0	<10	<5.0	**15**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/1/2006	<1.0	<1.0	<1.0	<2.0	1.1	<1.0	<10	<5.0	**18**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/17/2007	<1.0	<1.0	<1.0	<2.0	1.0	<1.0	<10	<5.0	**13**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/3/2007	<1.0	<1.0	<1.0	<2.0	1.0	<1.0	<10	<5.0	**6.9**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/5/2008	<2.0	<2.0	<2.0	<2.0	0.7	<2.0	<10	<5.0	**6.8**	<2.0	<2.0	1.4	NR	NA	NA	NA	NA	NA
		9/8/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/3/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.3	3.4	<1.0	<1.0	XYL - 3.3 TCFME - 9.2	NA	NA	NA	NA	NA
		12/18/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.2	<2.0	<1.0	<1.0	TCFME - 12	NA	NA	NA	NA	NA
		9/19/2013	0.59	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	3.2	<0.50	<0.50	<0.50	TCFME - 6.7	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-AM-8S	UAU2	5/22/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS	NS	NS	NS	NS
		10/30/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		NS	NS	NS	NS	NS
		2/20/1992	0.4/0.6D	<0.20	<0.20	0.8/0.7D	5.2/11D	0.8/0.8D	NA	NA	**87/120D**	0.7/<0.50D	0.3/0.2D	2.4/3.0D	NR	NA	NA	204	3.84	NA
		5/22/1992	<0.40	<0.40	<0.40	0.4/0.5D	2.6/20.8D	0.9/0.9D	NA	NA	**180/97D**	<0.50	<0.20	**6.7/5.6D**	NR	NA	NA	5.83	0.176	NA
		8/14/1992	0.8/0.8D	<0.20	<0.20	<0.20/0.2D	16.9/16.3D	0.7/0.6D	NA	NA	**98/120D**	<0.50	<0.20	**5.1**/4.8D	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.2	<1.0/1.0D	32/32D	1.6/2.1D	NA	NA	**110/120D**	<0.50	<1.0/0.4D	**9/11D**	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	1	48	2.2	NA	NA	**230**	<0.50	0.5	**17**	NR	NA	NA	NA	NA	NA
		5/13/1993	0.6	<0.20	<0.20	0.3	16	<0.20	NA	NA	**160**	<0.50	<0.20	**5.8**	NR	NA	NA	NA	NA	NA
		1/11/1994	<5.0	<5.0	<5.0	**23**/<5.0D	16/22D	<5.0	NA	NA	**300/290D**	<5.0	<5.0	<5.0/**16D**	NR	NA	NA	NA	NA	NA
		9/14/1994	0.7/0.7D	<0.50	<0.50	0.8/0.9D	19/18D	1.3/1.3D	NA	NA	**160/160D**	<0.50	<0.50	**7.1/6.7D**	NR	NA	NA	NA	NA	NA
		1/5/1995	<0.50	<0.50	<0.50	0.7/0.7D	10/9.9D	1.3/1.3D	NA	NA	**140/150D**	<0.50	<0.50	3.8/4.2D	NR	NA	NA	NA	NA	NA
		4/12/1995	0.6/0.7D	<0.50	<0.50	<0.50	15/15D	0.9/1.1D	NA	NA	**100/110D**	<0.50	<0.50	4.3/**5.0D**	NR	NA	NA	NA	NA	NA
		7/7/1995	<0.50	<0.50	<0.50	<0.50	13/13D	<0.50	NA	NA	**87/79D**	<0.50	<0.50	3.0/3.1D	NR	NA	NA	NA	NA	NA
		10/5/1995	<0.50	<0.50	<0.50	<0.50	8.0/7.8D	<0.50	NA	NA	**50/50D**	<0.50	<0.50	2.6/2.5D	NR	NA	NA	NA	NA	NA
		2/22/1996	<0.50	<0.50	<0.50	<0.50	5.5/6.0D	<0.50	NA	NA	**38/42D**	<0.50	<0.50	2.2/2.2D	NR	<0.10	0.07	1.3	<0.05	<0.05
		9/25/1996	<0.50	<0.50	<0.50	<0.50	2.4/2.3D	<0.50	NA	NA	**17/17D**	<0.50	<0.50	<0.50/0.6D	NR	<1.0	**0.2**	1.7	<0.10	<0.10
		1/14/1997	<0.50	<0.50	<0.50	<0.50	2.7/2.6D	<0.50	NA	NA	**19/19D**	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/15/1997	<0.50	<0.50	<0.50	<0.50	1.7/1.9D	<0.50	NA	NA	**11/12D**	<0.50	<0.50	0.52/0.57D	NR	NA	NA	NA	NA	NA
		7/15/1997	<0.50	<0.50	<0.50	<0.50	1.9/2.0D	<0.50	NA	NA	**16/16D**	<0.50	<0.50	0.66/0.69D	NR	<1.0	**0.55**	16	0.59	**0.22**
		1/21/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		4/20/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/27/1998	<0.50	<0.50	<0.50	<0.50	1.7/1.8D	<0.50	NA	NA	**16/20D**	<0.50	<0.50	<0.50	NR	<0.050	0.013	0.7	<0.050	<0.050
		7/5/2000	<2.0	4.9/4.8D	<2.0	<2.0	2.9/2.9D	<2.0	<10	<5.0	**33/31D**	<2.0	<2.0	<2.0	NR	0.014	0.077	2.9	0.21	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	3.3/3.7D	<2.0	<10	<5.0	**24/24D**	<2.0	<2.0	<2.0	NR	0.023	**0.31**	4.9	0.13	<0.050
		12/6/2000	<2.0	<2.0	<2.0	<2.0	6.2/6.5D	<2.0	<10	<5.0	**64/63D**	<2.0	<2.0	2.9/2.7D	NR	**0.12**	**2.3**	20	0.59	**0.12**
		3/6/2001	<2.0	<2.0	<2.0	<2.0	14	<2.0	<10	<5.0	**110**	<2.0	<2.0	**5.8**	NR	0.03	**0.42**	10	0.5	0.087
		9/5/2001	<2.0	<2.0	<2.0	<2.0	9.5	<2.0	<10	<5.0	**79**	<2.0	<2.0	3.4	NR	<0.050	**0.22**	3.9	0.43	0.057
		12/20/2001	<1.0	<1.0	<1.0	<2.0	4.5	<1.0	<10	<5.0	**40**	<2.0	<1.0	1.5	NR	<0.050	**0.46**	4	0.41	0.052
		7/2/2002	<1.0	<1.0	<1.0	<2.0	7.4	<1.0	<10	<5.0	**50**	<2.0	<1.0	2.9	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/11/2004	<1.0	<1.0	<1.0	<2.0	1.5	<1.0	<10	<5.0	**11**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/10/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**10/9.8D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/31/2005	<1.0	<1.0	<1.0	<2.0	1.2	<1.0	<10	<5.0	**8.3**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/13/2005	<1.0	<1.0	<1.0	<2.0	1.3	<1.0	<10	<5.0	**18**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/31/2006	<1.0	<1.0	<1.0	<2.0	2.2/2.0(D)	<1.0	<10	<5.0	**16/15(D)**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/1/2006	<1.0	<1.0	<1.0	<2.0	1.5/1.0(D)	<1.0	<10	<5.0	**14/13(D)**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	1.1/1.2(D)	<1.0	<10	<5.0	**17/17(D)**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/3/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/5/2008	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**5.6/6.7D**	<2.0	<2.0	1.1/0.96D	NR	NA	NA	NA	NA	NA
		9/8/2008	<1.0	<1.0	<1.0	<2.0	2.0/2.0(D)	<1.0	<10	<5.0	**11/10(D)**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/3/2012	<1.0/<1.0D	<1.0/<1.0D	<1.0/<1.0D	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	<10/<10D	<5.0/<5.0D	3.4/3.7(D)	2.5/2.3D	<1.0/<1.0D	<1.0/<1.0D	XYL - 3.1/<3.0D	NA	NA	NA	NA	NA
		12/18/2012	<1.0/<1.0D	<1.0/<1.0D	<1.0/<1.0D	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	<10/<10D	<5.0/<5.0D	1.4/1.2(D)	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	NR	NA	NA	NA	NA	NA
		9/19/2013	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	<5/<5D	<0.5/<0.5D	0.92/1.1(D)	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	NR	NA	NA	NA	NA	NA
MW-LW	UAU2	5/22/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/30/1991	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		2/20/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	16.1	0.233	NA
		5/22/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	0.58	0.013	NA
		8/14/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	2.1	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		11/19/1992	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	0.3	NR	NA	NA	NA	NA	NA
		2/18/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		5/13/1993	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	NA	<0.20	<0.50	<0.20	<0.20	NR	NA	NA	NA	NA	NA
		1/12/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		9/12/1994	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/5/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/11/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/6/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		10/4/1995	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		2/21/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-LW	UAU2	9/26/1996	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/27/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	1.7	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		7/14/1997	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		1/22/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
		4/20/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		10/28/1998	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50	<0.50	NR	<0.050	<0.010	<0.50	<0.050	<0.050
		7/7/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0036	0.026	6.5	0.099	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0041	0.12	1.1	<0.020	<0.050
		12/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	0.0039	0.074	3.9	0.061	<0.050
		3/6/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/5/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		7/2/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/13/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/31/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/17/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/3/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/5/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/8/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/3/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/18/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/19/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9-130	UAU1	9/26/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	38	<5.0	<2.0	<2.0	<2.0	<2.0	NS	<0.050	<0.010	0.35	0.7	0.079
		12/21/2001	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	2.9	3.9	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	3.1	<1.0	<10	<5.0	1.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/15/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/2/2005	1.2	<1.0	<1.0	<2.0	1.9	<1.0	<10	<5.0	**14**	<2.0	<1.0	1.1	NR	NA	NA	NA	NA	NA
		12/15/2005	2/<1.0D	<1.0	<1.0	<2.0	4.5/<1.0D	<1.0	<10	<5.0	**15/15D**	<2.0/2.7D	<1.0	1.4<1.0D	NR	NA	NA	NA	NA	NA
		6/2/2006	1.4	<1.0	<1.0	<2.0	5.9	<1.0	<10	<5.0	**13**	<2.0	<1.0	1.2	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	4.9	<1.0	<10	<5.0	**12**	<2.0	<1.0	1.1	NR	NA	NA	NA	NA	NA
		5/23/2007	<10	<10	<10	<20	<10	<10	<100	<50	**12**	<20	<10	<10	NR	NA	NA	NA	NA	NA
		12/6/2007	<1.0	<1.0	<1.0	<2.0	3.1	<1.0	<10	<5.0	**9.4**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	2.7	<2.0	<2.0	<5.0	**9.3**	<2.0	<2.0	0.68	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	2.7	<1.0	<10	<5.0	**12**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**9.8**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**9.5**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-9-175	UAU2	9/26/2001	17	<2.0	<2.0	<2.0	<2.0	<2.0	560	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.050	0.042	2.2	1.4	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	2.9	<1.0	<10	<5.0	1.5	<2.0	<1.0	<1.0	NR	<0.050	<0.010	6.8	4.8	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**8.7**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	1.1	<1.0	<10	<5.0	**5.6**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	5.8	<1.0	<10	<5.0	**5**	3.8	<1.0	2.1	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	8.8	<1.0	<10	<5.0	**6.9**	<2.0	<1.0	4.5	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	9.8	<1.0	<10	<5.0	**6.0**	<2.0	<1.0	4.8	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	3.3	<1.0	<10	<5.0	**5.2**	<2.0	<1.0	3.3	NR	NA	NA	NA	NA	NA
		12/5/2007	<1.0	<1.0	<1.0	<2.0	3.7	<1.0	<10	<5.0	**9.2**	<2.0	<1.0	2.5	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	3.4	<2.0	560	<5.0	**8.4**	<2.0	<2.0	2.3	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	8.2	<1.0	<10	<5.0	**10.0**	<2.0	<1.0	**5.7**	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	3.7	<1.0	<10	<5.0	**10.0**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	6.8	<1.0	<10	<5.0	**13**	<2.0	<1.0	4.6	NR	NA	NA	NA	NA	NA
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9-205	UAU3	9/26/2001	2.4	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.050	<0.010	2.4	3.3	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	5.3	**7.6**	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	22	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.3**	52	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	0.99	<2.0	<2.0	<2.0	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	1.6	<1.0	<10	<5.0	1.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.5	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9-235	UAU4	9/26/2001	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	<2.0	<2.0	<2.0	<2.0	NR	<0.050	<0.010	1.4	2.5	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	<0.20	0.031	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	22	<5.0	**7.3**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**15**	2.5	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**18/15D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**7.1/13D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.6**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.1/3.0D	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**8.0/5.4D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**9.8/5.4D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.6/5.2D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**11/14D**	<2.0	<2.0	<2.0	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**7.6/6.0D**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0/<1.0D	<1.0/<1.0D	<1.0/<1.0D	<2.0/<2.0D	9.3/8.5D	<1.0/<1.0D	<10/<10D	<5.0/<5.0D	**6.8/11D**	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0/<1.0D	<1.0/<1.0D	<1.0/<1.0D	<2.0/<2.0D	<1.0/1.1D	<1.0/<1.0D	<10/<10D	<5.0/<5.0D	**9.2/9.0D**	<2.0/<2.0D	<1.0/<1.0D	<1.0/<1.0D	NR	NA	NA	NA	NA	NA
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-10-130	UAU1	9/20/2001	<1000	<1000	<1000	<2500	<1000	<1000	<5000	<2500	<1000	<1000	<1000	<1000	NR	<0.050	0.039	5.6	4.5	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	1.1	<1.0	54	<5.0	<1.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	3.7	**5.5**	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	1.8	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/16/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/2/2005	<1.0	<1.0	<1.0	<2.0	1.5	<1.0	<10	<5.0	3	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	34	<1.0	<10	<5.0	**9.6**	<2.0	<1.0	2.4	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	35	<1.0	<10	<5.0	**8.9**	<2.0	<1.0	3.2	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	25	<1.0	<10	<5.0	**8.6**	<2.0	<1.0	3.7	NR	NA	NA	NA	NA	NA
		5/23/2007	<10	<10	<10	<20	26	<100	<10	<50	<10	<20	<10	<10	NR	NA	NA	NA	NA	NA
		12/6/2007	<1.0	<1.0	<1.0	<2.0	19/20D	<1.0	<10	<5.0	**5.3/5.3D**	<2.0	<1.0	3.0/3.0D	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	19	<2.0	<10	<5.0	**6.6**	<2.0	<2.0	4.7	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	15	<1.0	<10	<5.0	**6.4**	<2.0	<1.0	4.7	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	3.4	<1.0	<10	<5.0	**6.1**	<2.0	<1.0	3.8	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	3.6	<1.0	<10	<5.0	**5.8**	<2.0	<1.0	4.1	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.50	<0.50	<0.50	<0.50	3.4	<0.50	<10	<0.50	**5.1**	<0.50	<0.50	4.3	NR	NA	NA	NA	NA	NA
MW-10-170	UAU2	9/20/2001	<1000	<1000	<1000	<2500	<1000	<1000	<5000	<2500	<1000	<1000	<1000	<1000	NR	<0.050	<0.010	2.2	4.6	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	4.2	<1.0	19	<5.0	3.4	<2.0	<1.0	<1.0	NR	<0.050	<0.010	3.7	**5.6**	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	39	<1.0	290	<5.0	1.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/16/2004	<1.0	<1.0	<1.0	<2.0	24	<1.0	<10	<5.0	**6.7**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	53	<1.0	<10	<5.0	3.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	44	<1.0	<10	<5.0	2.9	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	36	<1.0	<10	<5.0	**8.3**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	42	<1.0	<10	<5.0	2.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	33	<1.0	<10	<5.0	4.5	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<10	<10	<10	<20	36	<10	<100	<50	<10	<20	<10	<10	NR	NA	NA	NA	NA	NA
		12/6/2007	<1.0	<1.0	<1.0	<2.0	43	<1.0	<10	<5.0	1.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	21	<2.0	<10	<5.0	3.0	<2.0	<2.0	0.66	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	2.9	<1.0	<10	<5.0	3.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	13	<1.0	<10	<5.0	4.5	<2.0	<1.0	3.9	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	39	<1.0	<10	<5.0	**6.6**	<2.0	<1.0	4.1	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	<0.5/<0.5D	61/**71**D	<0.5/<0.5D	<5/<5D	<0.5/<0.5D	**6.8/6.1(D)**	<0.5/<0.5D	<0.5/<0.5D	2.2/2.6D	NR	NA	NA	NA	NA	NA
MW-10-235	UAU4	9/20/2001	<1000	<1000	<1000	<2500	<1000	<1000	<5000	<2500	<1000	<1000	<1000	<1000	NR	<0.050	<0.010	1.3	2.5	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	<0.20	2.8	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.3	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/6/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	1.2	<2.0	<2.0	<2.0	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.3	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	1.0	<1.0	<10	<5.0	4.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<10	<0.50	3.9	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-11-170	UAU2	9/20/2001	<1000	<1000	<1000	<2500	<1000	<1000	<5000	<2500	<1000	<1000	<1000	<1000	NR	<0.050	<0.010	<0.20	2.3	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	1.6	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	4.2	**5**	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	5.1	<1.0	<10	<5.0	1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/15/2004	<1.0	<1.0	<1.0	<2.0	1.1	<1.0	<10	<5.0	2	2.4	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.9	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	1.8	<1.0	<10	<5.0	3.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	1.6	<1.0	<10	<5.0	3.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	2.4	<2.0	<10	<5.0	4.3	<2.0	<2.0	0.54	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	2.9	<1.0	<10	<5.0	4.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	5.0	<1.0	<10	<5.0	**5.4**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11-200	UAU3	9/20/2001	<1000	<1000	<1000	<2500	<1000	<1000	<5000	<2500	<1000	<1000	<1000	<1000	NR	<0.050	<0.010	0.7	1.8	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	2.9	<1.0	<10	<5.0	2.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	7	**6.7**	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	1.1	<1.0	<10	19	1.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NR	NS	NS	NS	NS	NS
		6/15/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.2	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	7.5	<1.0	<10	<5.0	1.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	5.9	<1.0	<10	<5.0	2.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	6.8	<1.0	<10	<5.0	3.1	<2.0	<1.0	2.4	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	3.8	<1.0	<10	<5.0	4.3	<2.0	<1.0	2.1	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	1.2	<1.0	<10	<5.0	3.1	2.5	<1.0	1.1	NR	NA	NA	NA	NA	NA
		12/5/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.9	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	5.3	<2.0	<10	<5.0	**6.2**	<2.0	<2.0	1.9	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	3.4	<1.0	<10	<5.0	**6.1**	<2.0	<1.0	1.7	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	3.6	<1.0	<10	<5.0	**5.4**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	2.4	<1.0	<10	<5.0	**17**	<2.0	<1.0	1.3	NR	NA	NA	NA	NA	NA
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11-240	UAU4	9/20/2001	<400	<400	<400	<1000	<400	<400	<2000	<1000	<400	<400	<400	<400	NR	<0.050	<0.010	0.22	2.7	<0.050
		12/21/2001	<1.0	<1.0	<1.0	<2.0	3.0	<1.0	<10	<5.0	2.0	<2.0	<1.0	<1.0	NR	<0.050	<0.010	3.4	**8.9**	<0.050
		7/2/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/15/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.3	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	2.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.9	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/23/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.4	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/7/2008	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	1.4	<2.0	<2.0	<2.0	NR	NA	NA	NA	NA	NA
		9/10/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	3.8	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.5**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	<5.0	<0.50	4.4	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-12-159	UAU1	7/2/2002	5.0	<1.0	<1.0	<2.0	<1.0	<1.0	25	9.2	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		8/13/2002	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		6/3/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	9.6	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/23/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/5/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/7/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/10/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/4/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12-183	UAU2	7/2/2002	11.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	1.9	NR	NA	NA	NA	NA	NA
		8/13/2002	5.8	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/3/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	5.3	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/23/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/5/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/7/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/10/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/4/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12-217	UAU3	7/2/2002	3.1	<1.0	<1.0	<2.0	<1.0	<1.0	620	**130**	<1.0	<2.0	<1.0	2.6	NR	NA	NA	NA	NA	NA
		8/13/2002	6.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	**42**	<1.0	<2.0	<1.0	1.1	NR	NA	NA	NA	NA	NA
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/3/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.5	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/23/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/5/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/7/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/10/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/4/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12-238	UAU4	7/2/2002	20.0	<1.0	<1.0	<2.0	<1.0	<1.0	150	<5.0	<1.0	<2.0	<1.0	2.9		NA	NA	NA	NA	NA
		8/13/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<1.0	2.6	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/16/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/14/2004[4]	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/3/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	1.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		6/2/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/5/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/23/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/5/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/7/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		9/10/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		5/4/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
		12/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]												Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
MW-14-130	UAU1	11/15/2008	3.4	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	0.60	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
MW-14-163	UAU2	11/15/2008	11	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
MW-14-186	UAU3	11/15/2008	7.1	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
MW-14-215	UAU4	11/15/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		5/4/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		12/20/2012	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	<1.0	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
		9/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	NR	NA	NA	NA	NA	NA
SRP 28E-0N	UAU-MAU	8/24/1983	NR	NR	NR	NR	NR	NR	NR	NR	1.8	NR	NR	**10.8**	NR	NR	NR	NR	NR	NR
		5/11/1984	NR	NR	NR	NR	NR	NR	NR	NR	**160**	NR	NR	3.7	NR	NR	NR	NR	NR	NR
		7/9/1984	NR	NR	NR	NR	NR	NR	NR	NR	**57.7**	NR	NR	4.3	NR	NR	NR	NR	NR	NR
		8/6/1984	NR	NR	NR	NR	NR	NR	NR	NR	**160**	NR	NR	**11.6**	NR	NR	NR	NR	NR	NR
		9/23/1985	NR	NR	NR	NR	NR	NR	NR	NR	**745.8**	NR	NR	**34.7**	NR	NR	NR	NR	NR	NR
		8/18/1987	NR	NR	NR	NR	NR	NR	NR	NR	**280.58**	NR	NR	**13.75**	NR	NR	NR	NR	NR	NR
		9/14/1987	NR	NR	NR	NR	NR	NR	NR	NR	**100**	NR	NR	**6.3**	NR	NR	NR	NR	NR	NR
		9/14/1987	NR	NR	NR	NR	NR	NR	NR	NR	**187**	NR	NR	**8.3**	NR	NR	NR	NR	NR	NR
		9/15/1987	NR	NR	NR	NR	NR	NR	NR	NR	**161**	NR	NR	**7.2**	NR	NR	NR	NR	NR	NR
		9/16/1987	NR	NR	NR	NR	NR	NR	NR	NR	**86**	NR	NR	**6.7**	NR	NR	NR	NR	NR	NR
		9/16/1987	NR	NR	NR	NR	NR	NR	NR	NR	**142**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/16/1987	NR	NR	NR	NR	NR	NR	NR	NR	**89**	NR	NR	**5**	NR	NR	NR	NR	NR	NR
		9/18/1987	NR	NR	NR	NR	NR	NR	NR	NR	**54**	NR	NR	4.6	NR	NR	NR	NR	NR	NR
		9/18/1987	NR	NR	NR	NR	NR	NR	NR	NR	**129**	NR	NR	**6.2**	NR	NR	NR	NR	NR	NR
		6/21/1988	NR	NR	NR	**9.6**	NR	NR	NR	NR	**260**	NR	NR	**13.1**	NR	NR	NR	NR	NR	NR
		1/29/1990	NR	NR	**6.6**	**10.1**	NR	NR	NR	NR	**280**	NR	NR	**9.3**	NR	NR	NR	NR	NR	NR
		1/29/1990	NR	NR	**7**	**8**	NR	NR	NR	NR	**250**	NR	NR	**8**	NR	NR	NR	NR	NR	NR
		5/21/1992	NR	NR	<0.20	0.6	NR	NR	NR	NR	**32**	NR	NR	1.4	NR	NR	NR	NR	NR	NR
		8/17/1992	NR	NR	<0.20	0.5	NR	NR	NR	NR	**32.9**	NR	NR	1.3	NR	NR	NR	NR	NR	NR
		11/18/1992	NR	NR	<0.20	0.4	NR	NR	NR	NR	**37.9**	NR	NR	1.4	NR	NR	NR	NR	NR	NR
		7/6/1995	NR	NR	NR	NR	NR	NR	NR	NR	**34**	NR	NR	0.9	NR	NR	NR	NR	NR	NR
		10/5/1995	NR	NR	NR	NR	NR	NR	NR	NR	**28**	NR	NR	0.7	NR	NR	NR	NR	NR	NR
		7/6/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**6.5**	<2.0	<2.0	<2.0	NR	0.004	<0.0040	<0.10	<0.020	<0.050
		9/19/2000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<5.0	**7**	<2.0	<2.0	<2.0	NR	0.0064	<0.0040	1.4	<0.020	<0.050
		11/27/2001	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	**5**	BRL	BRL	BRL	NR	NR	NR	NR	NR	NR
		8/28/2003	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<5.0	2.5	<0.5	<0.5	<0.5	NR	<0.005	<0.010	0.044	<0.010	<0.010
		9/28/2004	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<5.0	0.5	<0.5	<0.5	<0.5	NR	<0.005	<0.010	0.073	<0.010	<0.010
		10/26/2005	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	1.2	<0.5	<0.5	<0.5	NR	<0.005	<0.010	0.105	0.026	<0.010
		6/18/2009	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	3.6	<0.5	<0.5	<0.5	NR	0.003	<0.010	0.231	0.011	<0.001
SRP 28E-0N-132	UAU1	January 1990	<0.5	<0.5	3	**7**	<0.5	<0.5	NR	NR	**110**	<0.5	9	**9**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-140	UAU1	January 1990	1.3	<0.5	**9.1**	**15.3**	<0.5	0.7	NR	NR	**645**	0.5	14.5	**10.7**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-195	UAU3	January 1990	0.9	<0.5	**5.1**	**8.5**	<0.5	1	NR	NR	**220**	<0.5	7.4	**7.4**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-225	UAU4	January 1990	0.5	<0.5	4.6	**9.7**	<0.5	0.8	NR	NR	**270**	<0.5	7.1	**6.5**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-280	MAU	January 1990	<0.5	<0.5	**5.1**	**9.7**	<0.5	0.9	NR	NR	**500**	<0.5	7.4	**6.6**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-310	MAU	January 1990	<0.5	<0.5	**5.8**	**11.1**	<0.5	1.1	NR	NR	**430**	<0.5	7.7	**7.8**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-345	MAU	January 1990	<0.5	<0.5	**7**	**9**	<0.5	<0.5	NR	NR	**250**	<0.5	13	**8**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-360	MAU	January 1990	<0.5	<0.5	**7**	**13**	<0.5	<0.5	NR	NR	**390**	<0.5	14	**11**	NR	NA	NA	NA	NA	NA
SRP 28E-0N-1 130	UAU1	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**8.3**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-2 170	UAU2	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.7	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-3 200	UAU3	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.2**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-4 240	UAU4	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.6**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA

TABLE 2. SUMMARY OF ANALYTICAL RESULTS, SOUTH MESA WQARF REGISTRY SITE WELLS[1]

Well Name	Zone Sampled	Sample Date	VOCs (ug/L)[2]													Metals (mg/L)[3]				
			Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	1,2-DCP	MEK	MTBE	PCE	Toluene	1,1,1-TCA	TCE	Others	As	Cr	Fe	Mn	Ni
SRP 28E-0N-5 270	MAU	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.6	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-6 290	MAU	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.4**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-7 310	MAU	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.9**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-8 330	MAU	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5.4**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-9 350	MAU	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	**5**	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28E-0N-10 370	MAU	7/10/2002	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<10	<5.0	4.1	<2.0	<1.0	<1.0	NR	NA	NA	NA	NA	NA
SRP 28.5E-1N	UAU-MAU	1/18/1983	NR	NR	NR	NR	NR	NR	NR	NR	0.8	NR	NR	0.3	NR	NR	NR	NR	NR	NR
		9/7/1983	NR	NR	NR	NR	NR	NR	NR	NR	BRL	NR	NR	BRL	NR	NR	NR	NR	NR	NR
		7/9/1984	NR	NR	NR	NR	NR	NR	NR	NR	**9.2**	NR	NR	1.5	NR	NR	NR	NR	NR	NR
		6/27/1985	NR	NR	NR	NR	NR	NR	NR	NR	**27.2**	NR	NR	2.7	NR	NR	NR	NR	NR	NR
		7/23/1986	NR	NR	NR	NR	NR	NR	NR	NR	BRL	NR	NR	BRL	NR	NR	NR	NR	NR	NR
		9/14/1987	NR	NR	NR	NR	NR	NR	NR	NR	**24**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/14/1987	NR	NR	NR	NR	NR	NR	NR	NR	**28.7**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/15/1987	NR	NR	NR	NR	NR	NR	NR	NR	**26.6**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/15/1987	NR	NR	NR	NR	NR	NR	NR	NR	**22.3**	NR	NR	2.89	NR	NR	NR	NR	NR	NR
		9/16/1987	NR	NR	NR	NR	NR	NR	NR	NR	**22**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/16/1987	NR	NR	NR	NR	NR	NR	NR	NR	**33.1**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/18/1987	NR	NR	NR	NR	NR	NR	NR	NR	**22**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		9/18/1987	NR	NR	NR	NR	NR	NR	NR	NR	**31.7**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		7/1/1988	NR	NR	NR	NR	NR	NR	NR	NR	**23**	NR	NR	NR	NR	NR	NR	NR	NR	NR
		5/21/1992	NR	NR	NR	NR	NR	NR	NR	NR	**32**	NR	NR	1.4	NR	NR	NR	NR	NR	NR
		8/27/1992	NR	NR	NR	NR	NR	NR	NR	NR	**32.9**	NR	NR	1.3	NR	NR	NR	NR	NR	NR
		11/18/1992	NR	NR	NR	NR	NR	NR	NR	NR	**37.9**	NR	NR	1.4	NR	NR	NR	NR	NR	NR
		11/19/1999	BRL	BRL	BRL	BRL	1.5	BRL	BRL	BRL	**13**	BRL	BRL	BRL	NR	NR	NR	NR	NR	NR
		9/24/2002	BRL	BRL	BRL	BRL	0.8	BRL	BRL	BRL	**9.9**	BRL	BRL	BRL	NR	NR	NR	NR	NR	NR
		11/13/2003	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	NR	<5.0	**6.1**	<0.5	<0.5	<0.5	NR	<0.005	<0.010	0.29	<0.010	<0.010
		10/26/2005	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	NR	NR	**9.8**	<0.5	<0.5	<0.5	NR	0.008	0.011	1.78	0.033	0.01
		6/18/2009	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	3.3	<0.5	<0.5	<0.5	NR	0.003	<0.010	0.238	<0.010	<0.001
		6/13/2012	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	3.5	<0.5	<0.5	<0.5	NR	0.006	<0.010	0.031	<0.010	<0.001
Aquifer Water Quality Standard or Tier 1 Level			100	NE	5.0	7.0	70	5.0	NE	20	5.0	1000	200	5.0		0.05	0.10	NE	4.9	0.10

Notes:

1. Summary of VOC and metals analytical results. NA - not analyzed, NS - not sampled, NR - not reported, BRL - below reporting limit, "<" - less than reporting limit. **Bold** indicates compound exceeded the AWQS.1991 samples collected by Kleinfelder, 1992-1993 samples collected by Malcolm Pirnie, 1994-1998 samples collected by ADEQ, 2000-present samples collected by AMEC (LAW and MACTEC). With the exception of 7/6/2000 and 9/19/2000 samples from SRP Well 28E-0N and the 7/10/2002 diffusive bag samples collected from SRP Well 28E-0N, which were collected by MACTEC, SRP collected samples from wells 28E-0N and 28.5E-1N.
2. VOC concentrations reported in micrograms per liter (ug/L). DCA - dichloroethane, DCE - dichloroethene, DCP - dichloropropane, MEK -methyl-ethyl-ketone, MTBE - methyl-tertiary-butyl-ether, PCE - tetrachloroethene or perchloroethene, TCA - 1,1,1- trichloroethane, TCE - trichloroethene, TCFME - trichlorofluoromethane, XYL - xylene.
3. Metals reported in milligrams per liter (mg/L). As - Arsenic, Cr - Total Chromium, Fe - Total Iron, Mn - Manganese, Ni - Nickel.

Table 3. Indoor Air Quality PCE and TCE Analytical Results									
Sample Number	Location	Date	PCE[a]			TCE[b]			Combined CILCR[d]
			ppbv	μg/m³	CILCR[c]	ppbv	μg/m³	CILCR[c]	
1	Suite 1 – Floor	6/27/02	20	135.6	9E-07	0.97	5.21	1E-06	2E-06
		12/17/02	13	88.14	6E-07	1.2	6.44	2E-06	3E-06
2	Suite 1 – Office	6/27/02	57	386	3E-06	0.94	5.05	1E-06	4E-06
		12/17/02	180	1220.4	9E-06	4.0	21.48	6E-06	2E-05
IAQ-1		11/21/07	0.85	5.9	4E-08	<0.5	<2.8	NA	4E-08[e]
IAQ-1		4/11/12	<0.50	<3.4	NA	<0.50	<2.7	NA	NA
3	Suite 1 – Mezzanine	6/27/02	16	108.48	8E-07	0.81	4.35	1E-06	2E-06
		12/17/02	17	115.26	8E-07	0.78	4.19	1E-06	2E-06
4	Suite 4 – Floor	6/27/02	<0.50	<3.39	NA	<0.50	<2.69	NA	NA
		12/17/02	NS	NS	NS	NS	NS	NS	NS
5	Suite 5 – Floor	6/27/02	2.0	13.56	9E-08	<0.50	<2.69	NA	9E-08
		12/17/02	NS	NS	NS	NS	NS	NS	NS
6	Suite 3 – Floor	6/27/02	5.5	37.29	3E-07	0.76	4.08	1E-06	1E-06
		12/17/02	7.0	47.46	3E-07	0.61	3.28	9E-07	1E-06
7	Outside	6/27/02	<0.50	<3.39	NA	<0.50	<2.69	NA	NA
		12/17/02	<0.50	<3.39	NA	0.67	3.60	1E-06	1E-06
EPA Region 9 PRG[f]			0.099	0.32	NA	0.003	0.017	NA	NA
Commercial PRG			21.09	143	NA	0.667	3.58	NA	NA
EPA Region 9 Industrial RSL[g]				47			3.0		
ILCR Acceptable Exposure Standard[h]			NA	NA	1E-04	NA	NA	1E-04	1E-04
ILCR *de minimus* Exposure Standard			NA	NA	1E-06	NA	NA	1E-06	1E-06

a. PCE results reported in parts per billion of vapor volume (ppbv) and micrograms per cubic meter (μg/m³). Results in μg/m³ are calculated by multiplying concentration in ppbv by a conversion factor of 6.78 μg/m³/ppbv. NS – not sampled.

b. TCE results reported in parts per billion of vapor volume (ppbv) and micrograms per cubic meter (μg/m³). Results in μg/m³ are calculated by multiplying concentration in ppbv by a conversion factor of 5.37 μg/m³/ppbv. NS – not sampled.

c. CILCR – Commercial Incidental Lifetime Cancer Risk. NA indicates not applicable due to laboratory non-detect concentrations.

d. Combined CILCR = PCE CILCR + TCE CILCR.

e. The combined CILCR for sample IAQ-1 collected on 11/21/07 does not exceed 1E-06. Therefore, according to the National Contingency Plan (NCP) no further action is required.

f. Environmental Protection Agency (EPA) Region 9 Preliminary Remediation Goal (PRG) for ambient air (EPA 2004).

g. EPA Region 9 Industrial Air Regional Screening Level – April 2012

h. Incremental Lifetime Cancer Risk (ILCR) acceptable exposure standard per the NCP.

TABLE 4. SUMMARY OF DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES
South Mesa WQARF Site
Mesa and Gilbert, Arizona

Assessment Factor	Reference Remedy	More Aggressive Remedy	Less Aggressive Remedy
Major Components	Do not restrict or alter pumpage of SRP wells 28E-0N and 28.5E-1N and water usage in SRP operations; continue SMWRS monitoring program for five years; and, "Closure" recommended if plume concentrations do not exceed 5 µg/L. Wellhead treatment may be installed as a contingency on SRP wells in the event PCE concentrations exceed SRP water use levels.	Reference remedy plus limited ISCO treatment at former AMI facility as SC. Wellhead treatment may be installed as a contingency on SRP wells in the event PCE concentrations exceed SRP water use levels.	Abandon SRP Wells 28E-0N and 28.5E-1N and provide an alternate supply of water for the wells. If an alternate supply of water is not available, replace wells at same location with wells screened entirely in MAU. The water quantity must be the volume lost be SRP and must meet SRP water quality standards. Monitoring will be required until PCE concentrations are below AWQS.
Practicability: • **Feasibility** • **Short-term effectiveness** • **Long-term effectiveness** • **Reliability**	• Readily implemented, will make use of existing wells. • Pumping of the SRP wells effectively removed PCE during operation as an ERA. • Five year monitoring program is intended to evaluate long-term effectiveness. • GAC is effective in removing PCE to acceptable risk-based concentrations as a contingency.	Same as reference remedy with the following: • ISCO is a proven technology for in-situ SC remediation of PCE to inert compounds. • Installation depths for injection wells requires large drilling systems that will result in access issues for existing businesses for approximately one month; though feasible, there are issues regarding implementation. • Installation of remediation equipment, including wells and pipe trenching, will disrupt on-site businesses.	• Alternate water supplies are costly and uncertain. • PCE mass is not removed; therefore, groundwater monitoring will be required. • Due to available space, installing a new well at the location of SRP Well 28.5E-1N will be difficult to implement. • Meets the RO's.
Risk: • **Overall protection of human health and environment**	• Will control migration of contaminants to the MAU. • Will be protective of human health and environment by decreasing PCE concentrations. • Will meet RO's.	• Will control migration of contaminants to the MAU. • Will be protective of human health and environment by decreasing PCE concentrations. • Will meet RO's.	• Eliminates potential migration pathway of contaminants from the UAU to MAU.
Cost: • **Capital costs** • **O&M** • **Life cycle costs**	• Total estimated cost for the five year monitoring program without contingency wellhead treatment is $144,990. Worst-case scenario for contingency wellhead treatment at both SRP wells could increase cost by $1,597,500.	• Estimated installation and O&M cost is $255,000. • Total estimated cost for the five year monitoring program without contingency wellhead treatment is $144,990. Worst-case scenario for contingency wellhead treatment at both SRP wells could increase cost by $1,597,500.	• Will be the most expensive alternative. The estimated cost to abandon and replace both wells is $3,000,000. This does not include a long-term monitoring program of unknown duration.
Benefit: • **Lowered risk to human health and environment** • **Reduction in COC concentration and/or volume Decreased liability** • **Public acceptance** • **Aesthetics** • **Preservation of existing uses** • **Enhancement of future uses** • **Improvement to local economy**	• Will successfully lower risk to human health and environment by remediating impacted groundwater. • Will meet RO's. • Lowest cost alternative. • Should receive public acceptance.	• Will successfully lower risk to human health and environment by remediating impacted groundwater. • Will meet RO's. • Should receive public acceptance	• Eliminates potential migration pathway of contaminants from the UAU to MAU, thus protecting municipal uses.

FIGURES

Job No.	1420122022
PM:	JNC
Date:	2/13/2013
Scale:	1" = 1500'

N

South Mesa WQARF Registry Site
Mesa and Gilbert, Arizona

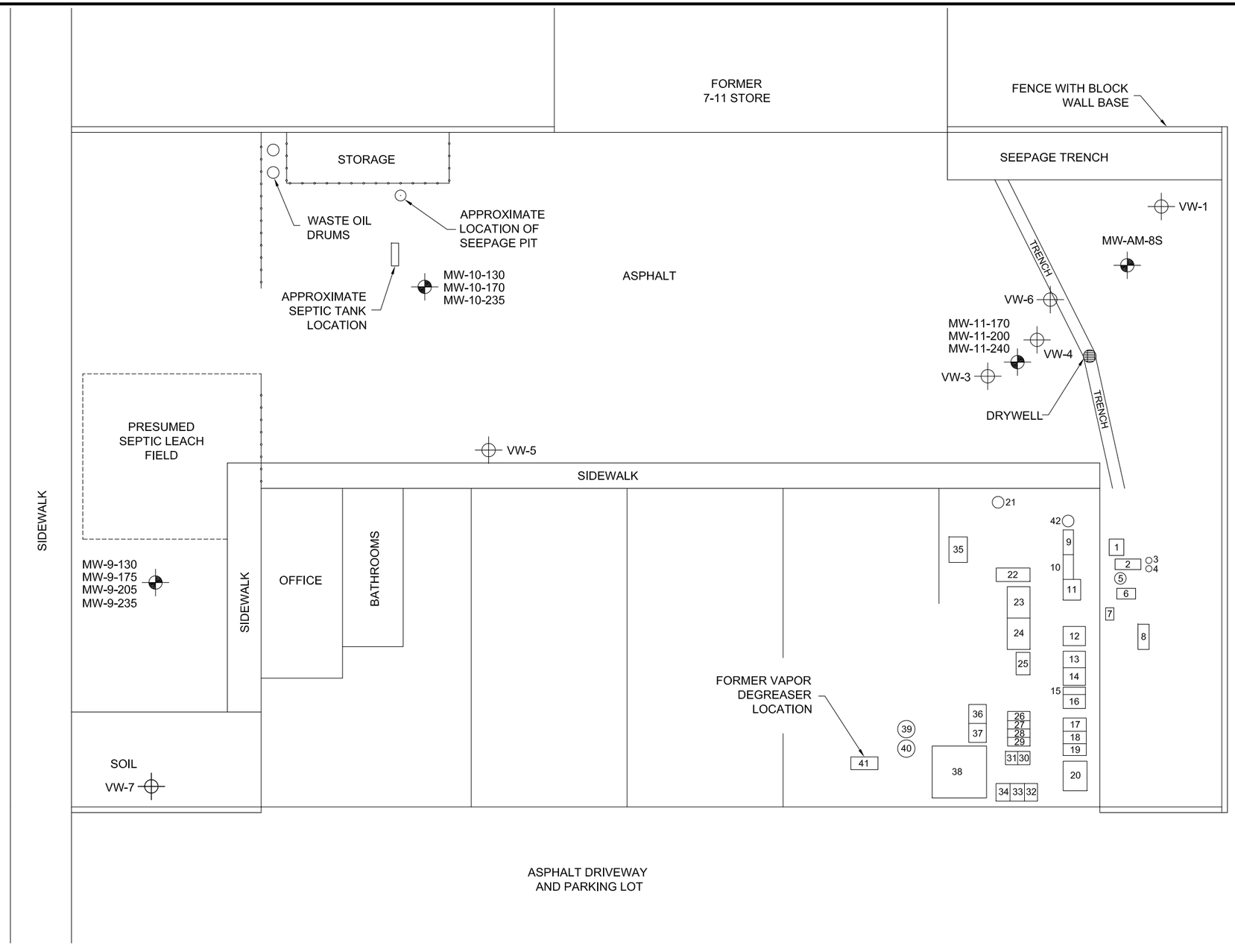
The map shown here has been created with all due and reasonable care and is strictly for use with AMEC Project Number 1420122022. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. AMEC assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Site and Vicinity Plan

FIGURE
1

amec

Path: X:\Projects\2012 Projects\1420122022 South Mesa WQARF 2013\MXD\Figure1_SiteMap.mxd



TANK IDENTIFICATION

1. TIN STRIP TANK - USED TO STRIP TIN AND CLEAN PARTS
2. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 1, 3 AND 4.
3. HYDROCHLORIC ACID (50%) TANK - USED TO CLEAN STEEL PARTS.
4. SAME AS TANK 3
5. BRIGHT DIP TANK - MIXTURE OF NITRIC ACID AND PHOSPHORIC ACID, USED TO CLEAN COPPER OR BRASS PARTS.
6. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 5, 7 AND 8.
7. NICKEL STRIP TANK - PROPANE HEATED SOLUTION USED TO STRIP NICKEL.
8. NITRIC ACID TANK - USED TO CLEAN OR STRIP PARTS.
9. TIN/LEAD TANK - USED TO PLATE PARTS (TIN).
10. TIN PLATE TANK - USED TO PLATE PARTS (TIN).
11. TIN PLATE TANK - USED TO PLATE PARTS (TIN).
12. COPPER/CYANIDE TANK - USED TO PLATE PARTS (COPPER).
13. COPPER/CYANIDE DRAGOUT TANK - USED TO PRE-RINSE PARTS PRIOR TO FINAL RINSE.
14. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 12, 13, 15 AND 16.
15. SULFURIC ACID (50%) TANK - USED TO CLEAN PARTS.
16. SULFURIC ACID TANK - USED TO MAKE-UP AND HOLD RAW SULFURIC ACID SOLUTION.
17. HYDROCHLORIC (MURIATIC) ACID TANK - USED TO CLEAN STEEL PARTS.
18. HYDROCHLORIC (MURIATIC) ACID TANK - USED TO CLEAN COPPER AND BRASS PARTS.
19. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 17, 18 AND 20.
20. OAKITE 90 TANK - USED TO CLEAN PARTS.
21. CENTRIFUGE - USED TO SPIN DRY PARTS.
22. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 9, 10, 11 AND 23.
23. FLUOROBORIC TIN TANK - USED TO PLATE PARTS (TIN).
24. BRIGHT TIN TANK - USED TO PLATE PARTS (BRIGHT TIN).
25. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 24 AND 35.
26. DEIONIZED WATER TANK - USED TO PRE-RINSE PARTS PRIOR TO TANK 35.
27. DEIONIZED WATER TANK - USED TO PRE-RINSE PARTS PRIOR TO TANK 35.
28. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 26, 27 AND 29.
29. ACETIC ACID TANK - USED TO PRE-CLEAN PRIOR TO TANK 35.
30. NITRIC ACID TANK - USED TO CLEAN ALUMINUM.
31. ZINCATE TANK - USED TO PRE-CONDITION ALUMINUM.
32. IRIDITE TANK - USED TO PUT CHROMATE FINISH ON ALUMINUM.
33. IRIDITE DRAGOUT TANK - USED TO PRE-RINSE PARTS PRIOR TO FINAL RINSE.
34. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 32 AND 33.
35. SULFURIC ACID/TIN TANK - USED TO PLATE PARTS (TIN).
36. OVERFLOW RINSE TANK - ASSOCIATED WITH PROCESS TANKS 37 AND 38.
37. ELECTROLESS NICKEL DRAGOUT TANK - USED TO PRE-RINSE PARTS PRIOR TO FINAL RINSE.
38. ELECTROLESS NICKEL TANK - USED TO PLATE PARTS (NICKEL).
39. ELECTROLESS NICKEL HOLDING TANK.
40. ELECTROLESS NICKEL HOLDING TANK.
41. TETRACHLOROETHYLENE VAPOR DEGREASER - USED TO DEGREASE PARTS TO BE PLATED.
42. SAME AS TANK 21.

REFERENCE
- APPLIED METALLICS, INC. "TANK LOCATION DIAGRAM, FIGURE 2" WESTERN TECHNOLOGIES, INC., 1989

N

LEGEND
- DRYWELL
- VAPOR EXTRACTION WELL
- GROUNDWATER MONITORING WELL

JOB NO.	14-2012-2020.06.24
DESIGN:	JC
DRAWN:	GWH
DATE:	4/2012
SCALE:	NTS

FORMER APPLIED METALLICS
SITE PLAN & LOCATION MAP

SOUTH MESA WQARF

FIGURE 2

amec
Environment & Infrastructure
4600 East Washington Street, Suite 600
Phoenix, Arizona

X:\Projects\2012 Projects\497211\2050 South Mesa WQARF\CAD\82050.3.19 FIG 2.dwg

SCALE = 1" = 500'-0"

SCALE = 1" = 100'-0"

MW-6D
MW-AM-8S
SRP WELL 28E-0N
MW-5D
MW-7D
MW-7X
SRP WELL 28.5E-1N
A
A'

UAU1
UAU2
UAU3
UAU4
MAU

1200 1175 1150 1125 1100 1075 1050 1025 1000 975 950 925 900 875 850 825 800 775 750 725 700 675 650 625 600 575 550 525 500 475 450 425 400

0 100 200 300 400 500 600 700

0 25 50 75 100 125 150

(Ohm/m)

- CLAY
- SILT AND CLAY
- SAND
- GRAVEL AND SAND

CROSS SECTION A - A'
SOUTH MESA WQARF SITE

FIGURE 3

MACTEC PROJECT NAME: SOUTH MESA WQARF
MACTEC PROJECT NO: 70211-2-0064.2.2.6.2
DATE: 12/18/02
E-FILE: 20064.2.2.6 FIG 10
DRAWN BY: DAK
CHECKED BY:

amec

Figure 4. Well Hydrographs for MW-1S, MW-3S, MW-4S, MW-5S, MW-AM-8S, and MW-LW

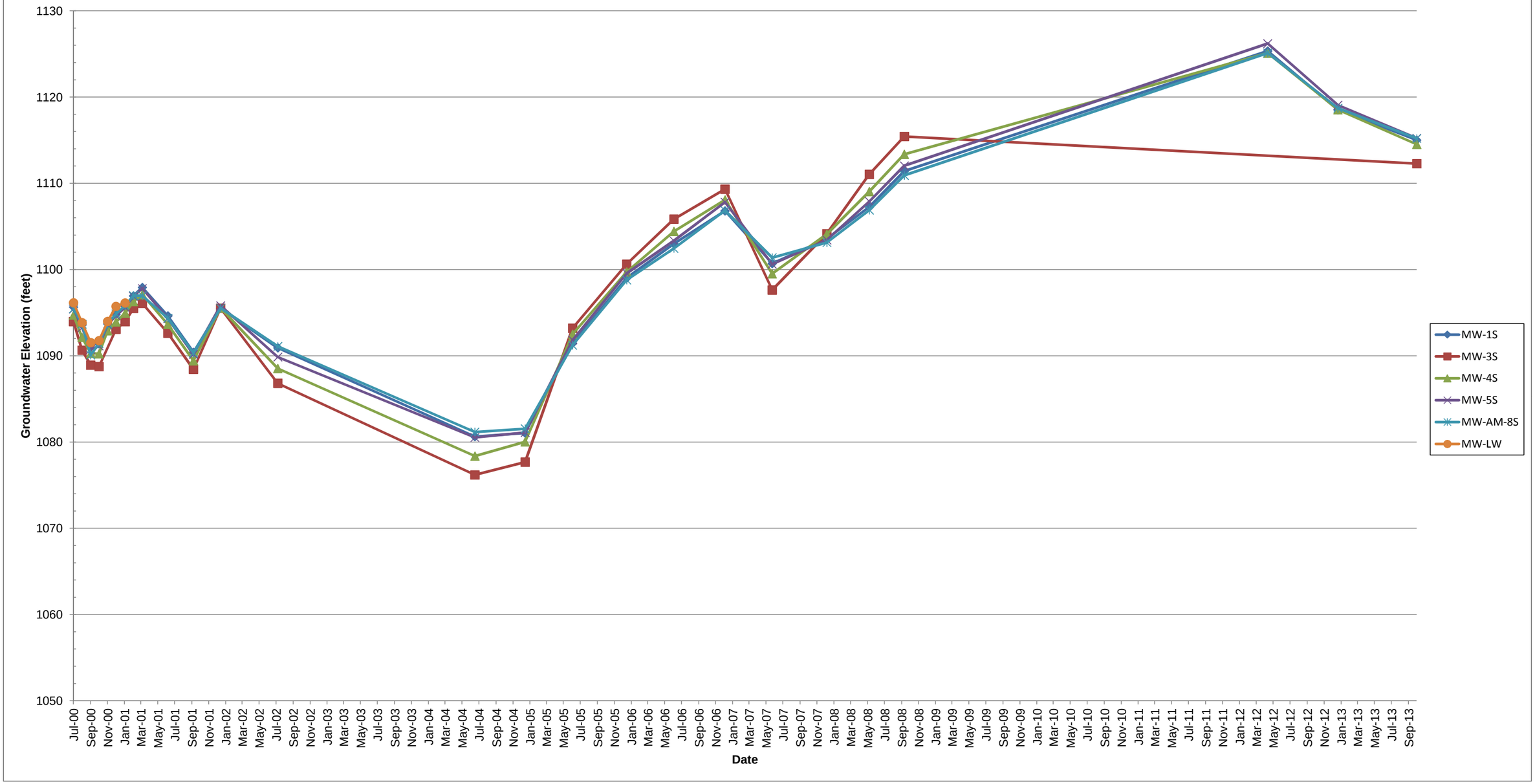


Figure 5. Well Hydrographs for MW-1D, MW-2D, MW-5D, MW-6D, and MW-7D

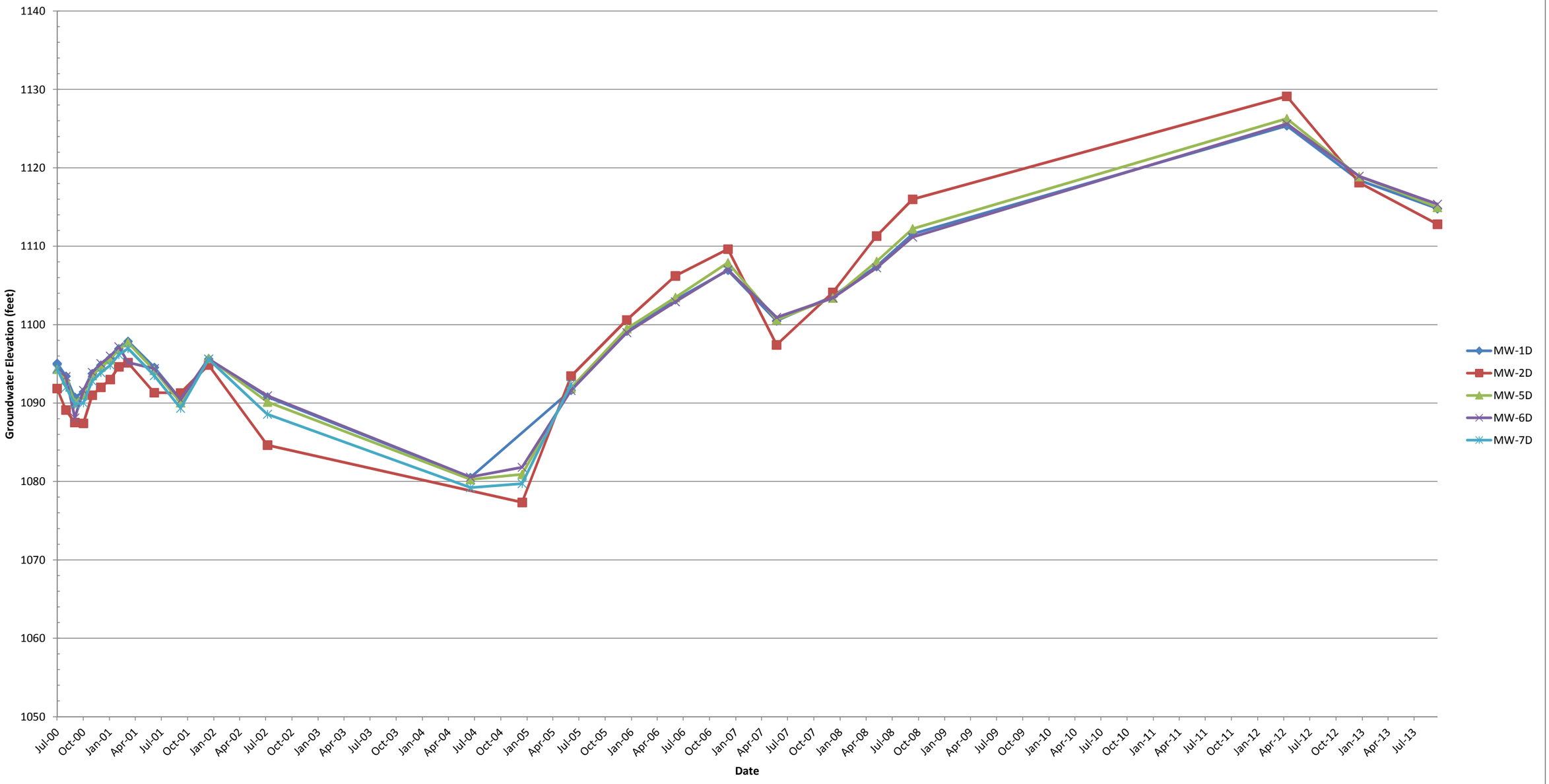


Figure 6. Well Hydrographs for Zone UAU1 BARCAD Wells

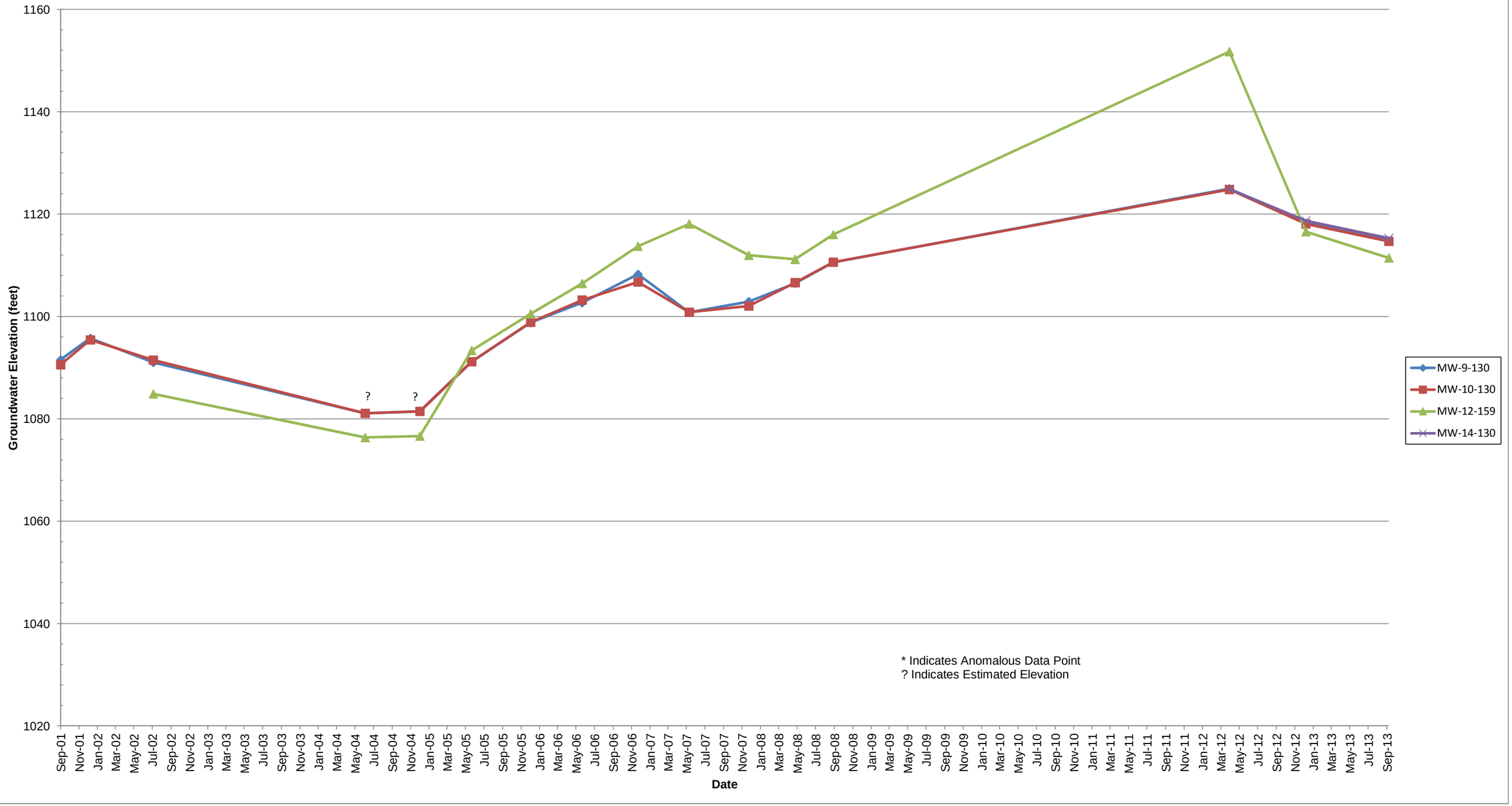


Figure 7. Well Hydrographs for Zone UAU2 BARCAD Wells

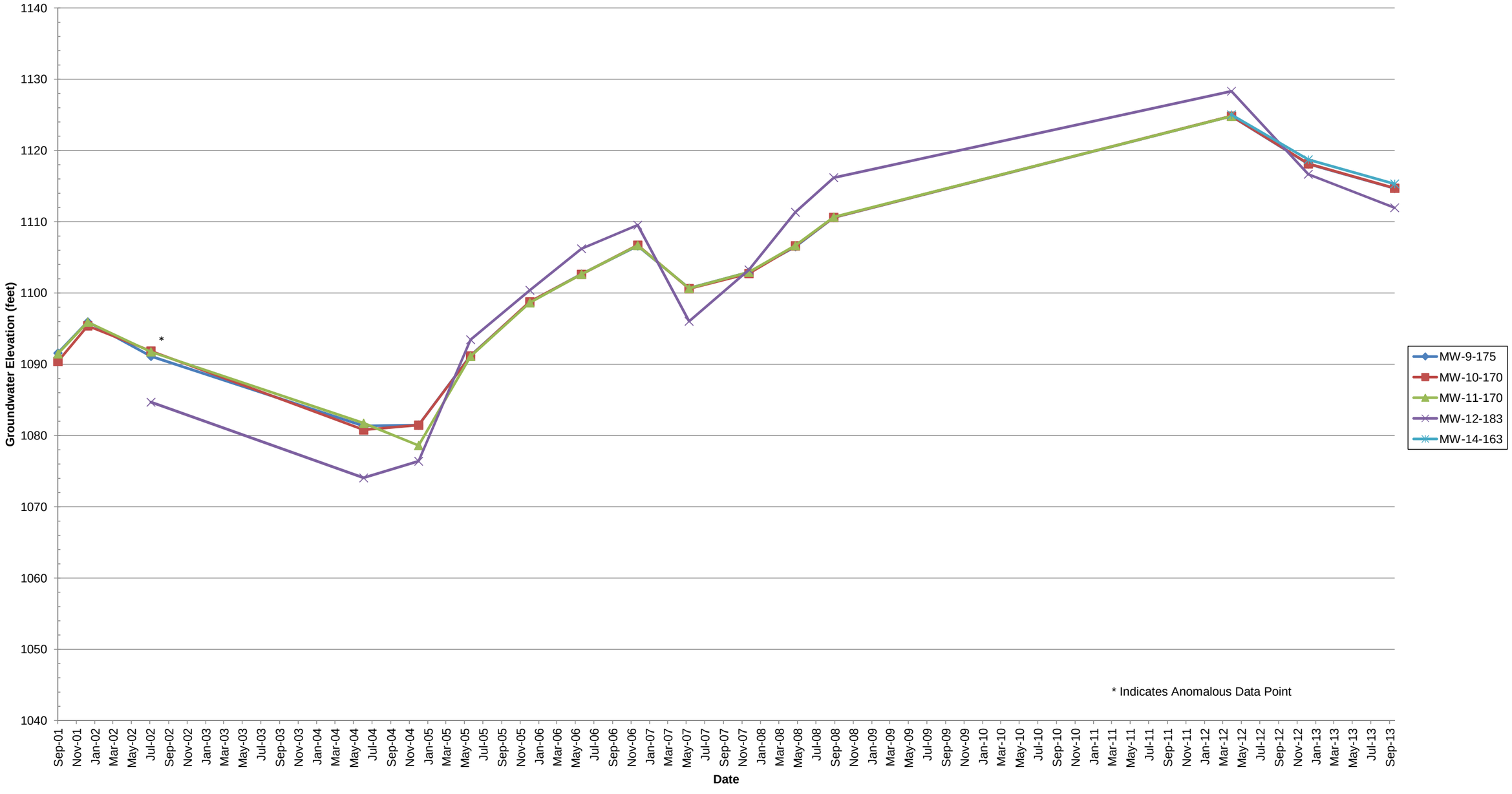


Figure 8. Well Hydrographs for Zone UAU3 BARCAD Wells

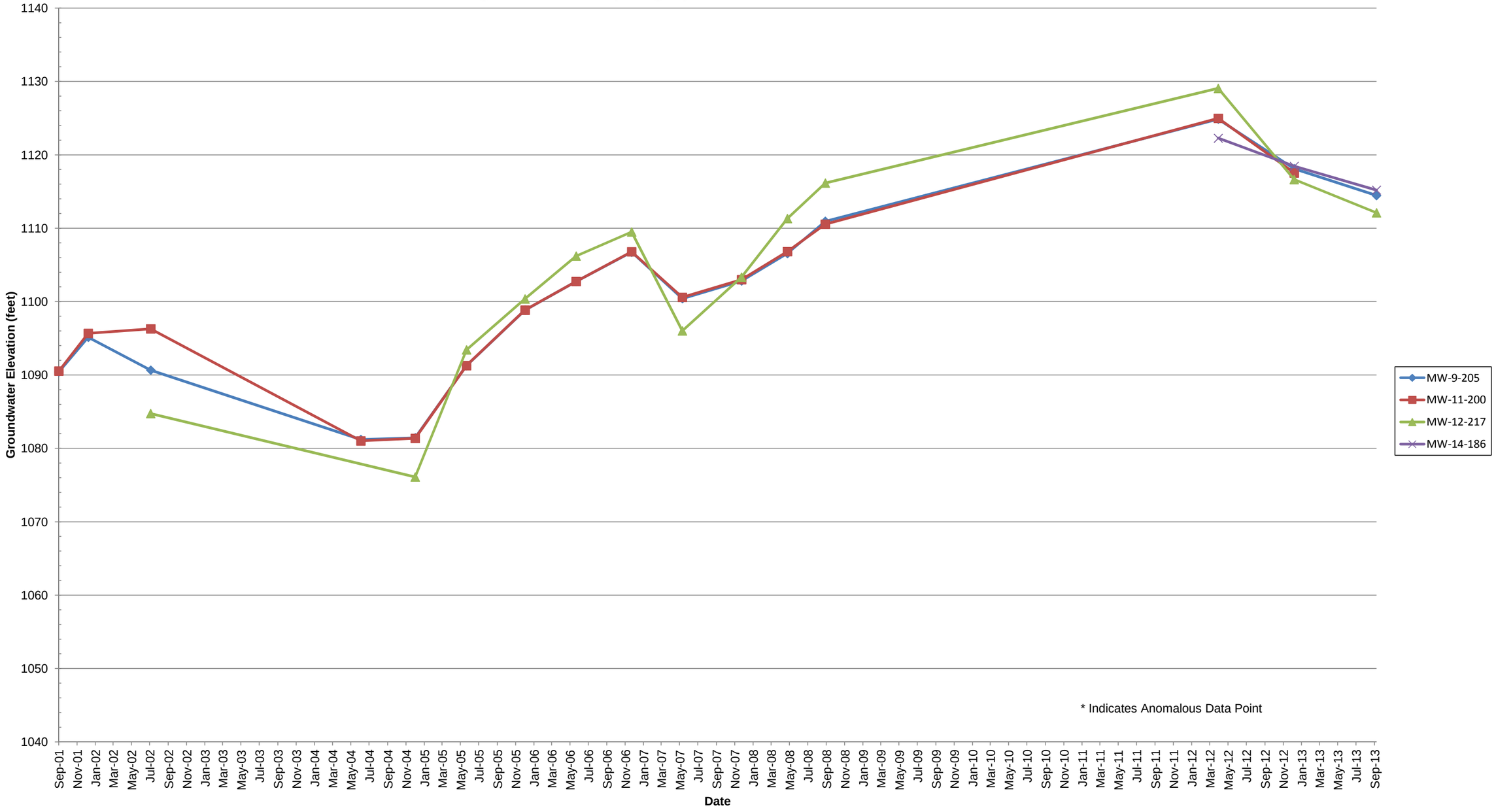
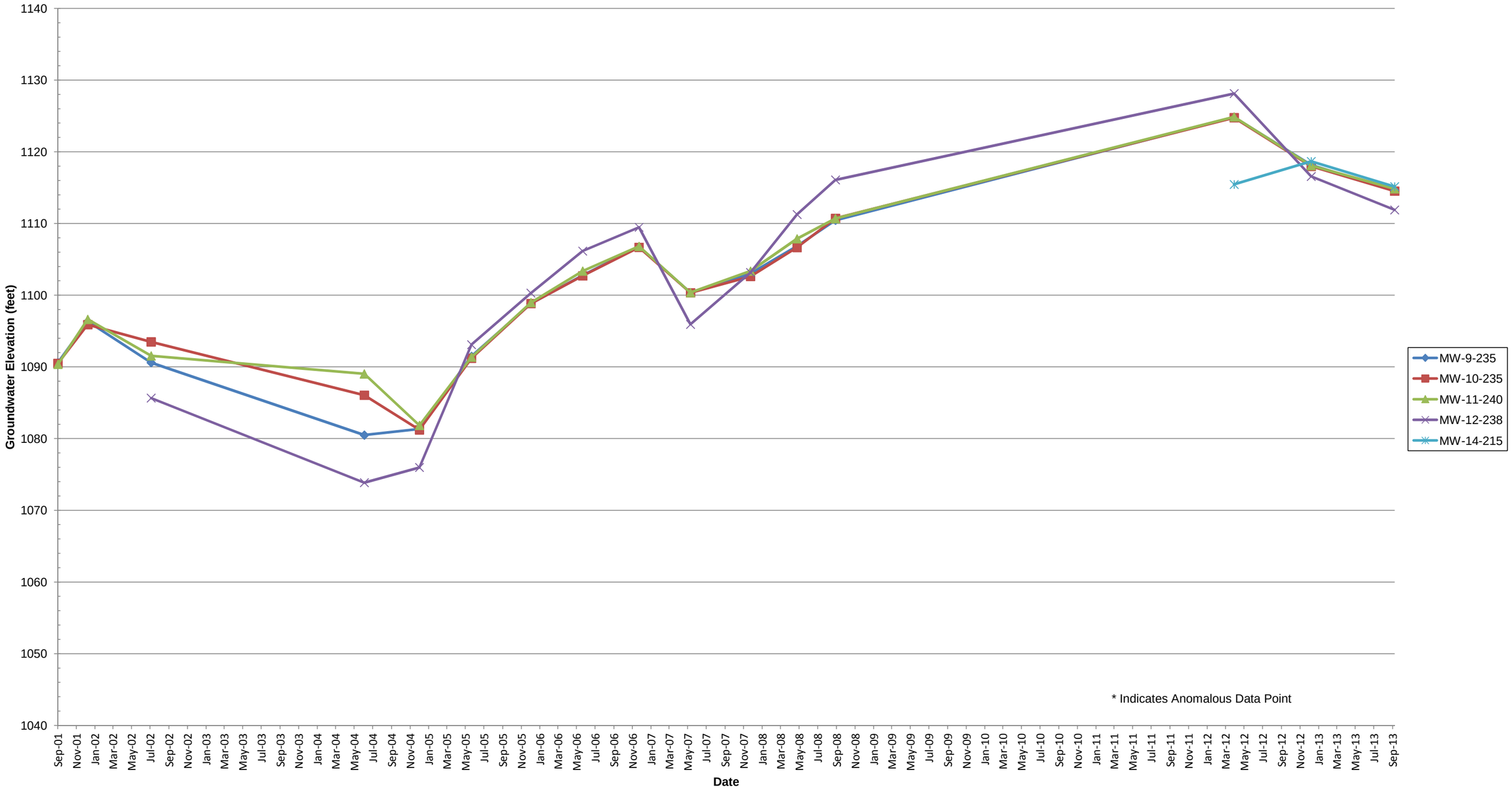
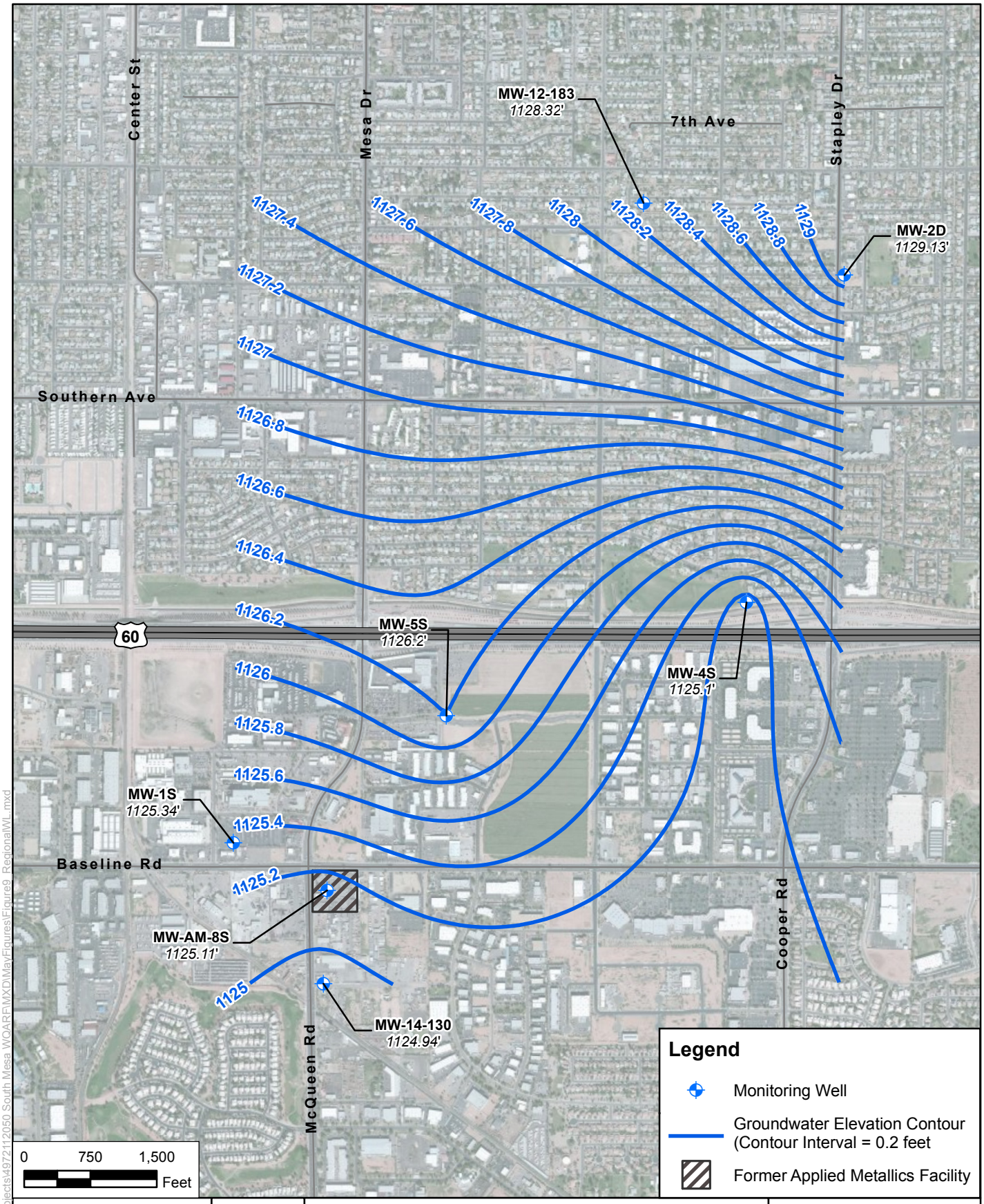


Figure 9. Well Hydrographs for Zone UAU4 BARCAD Wells





Job No.	4972112050
PM:	JNC
Date:	5/30/2012
Scale:	1" = 1500'

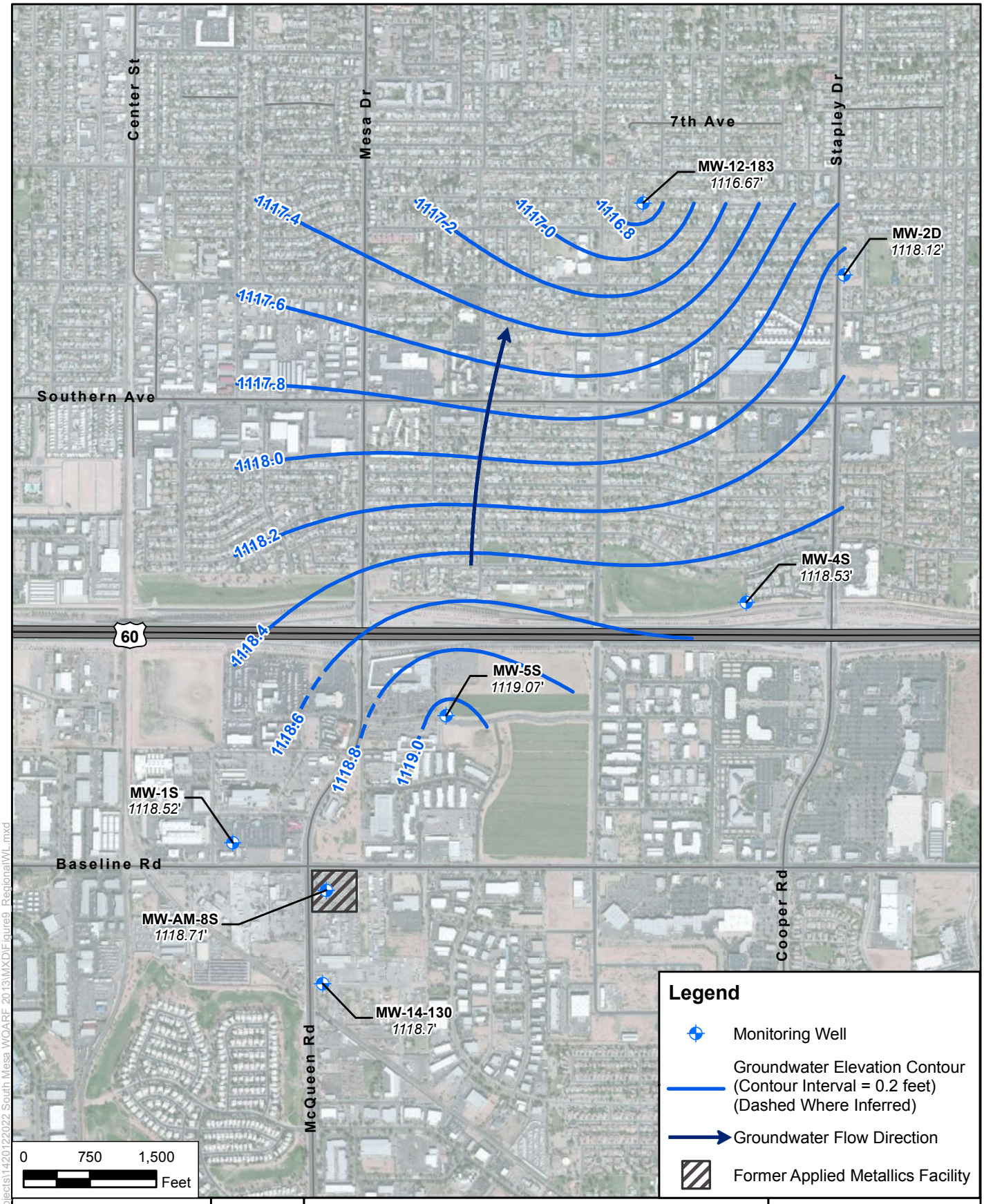
N

South Mesa WQARF Registry Site
Mesa and Gilbert, Arizona

April 11, 2012
Regional Groundwater Elevations

FIGURE
10

amec



Job No.	1420122022
PM:	JNC
Date:	3/12/2013
Scale:	1" = 1500'

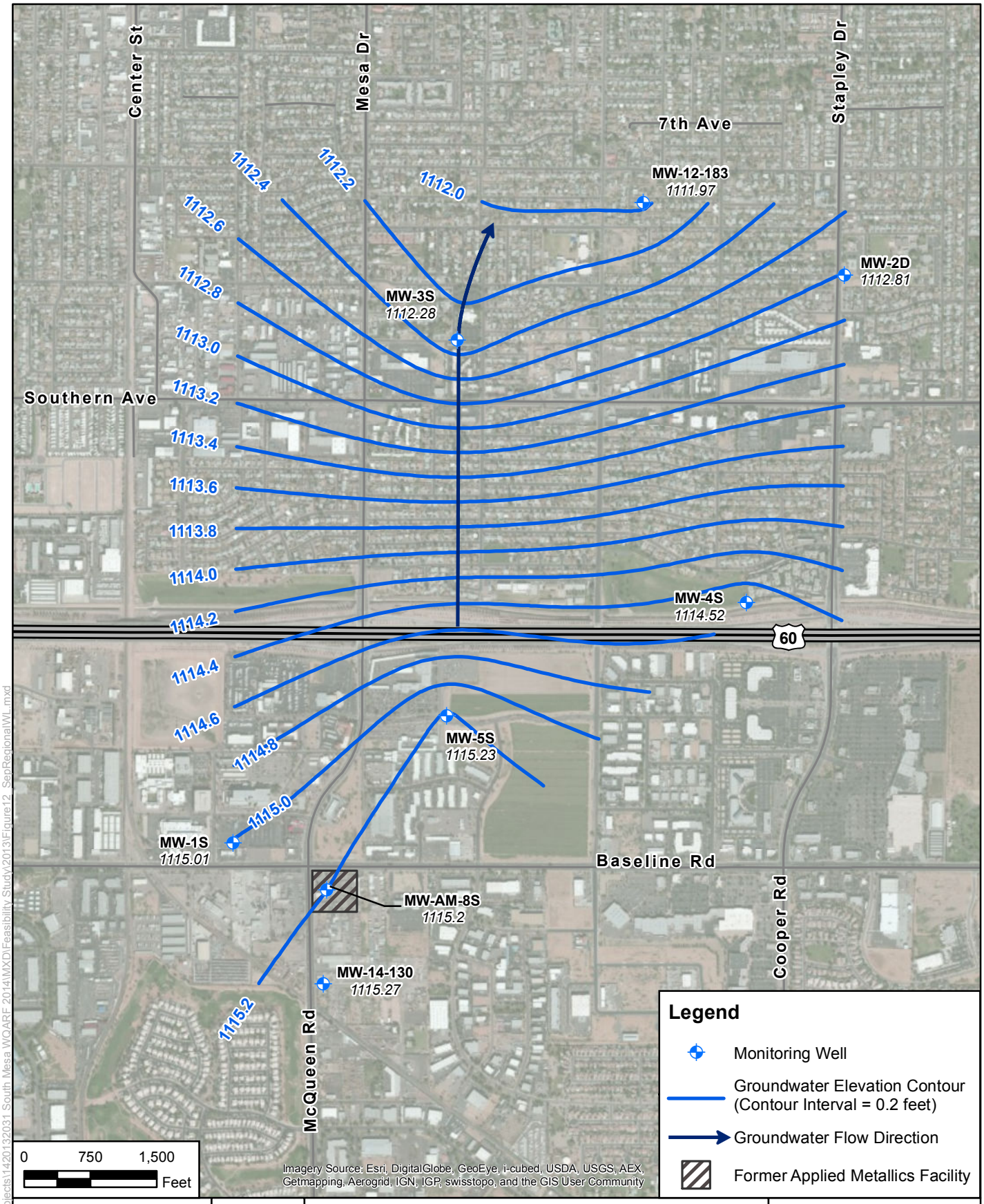
N

South Mesa WQARF Registry Site
Mesa and Gilbert, Arizona

December 20, 2012
Regional Groundwater Elevations

FIGURE
11

amec



Job No.	1420132031
PM:	JNC
Date:	4/1/2014
Scale:	1" = 1500'

N

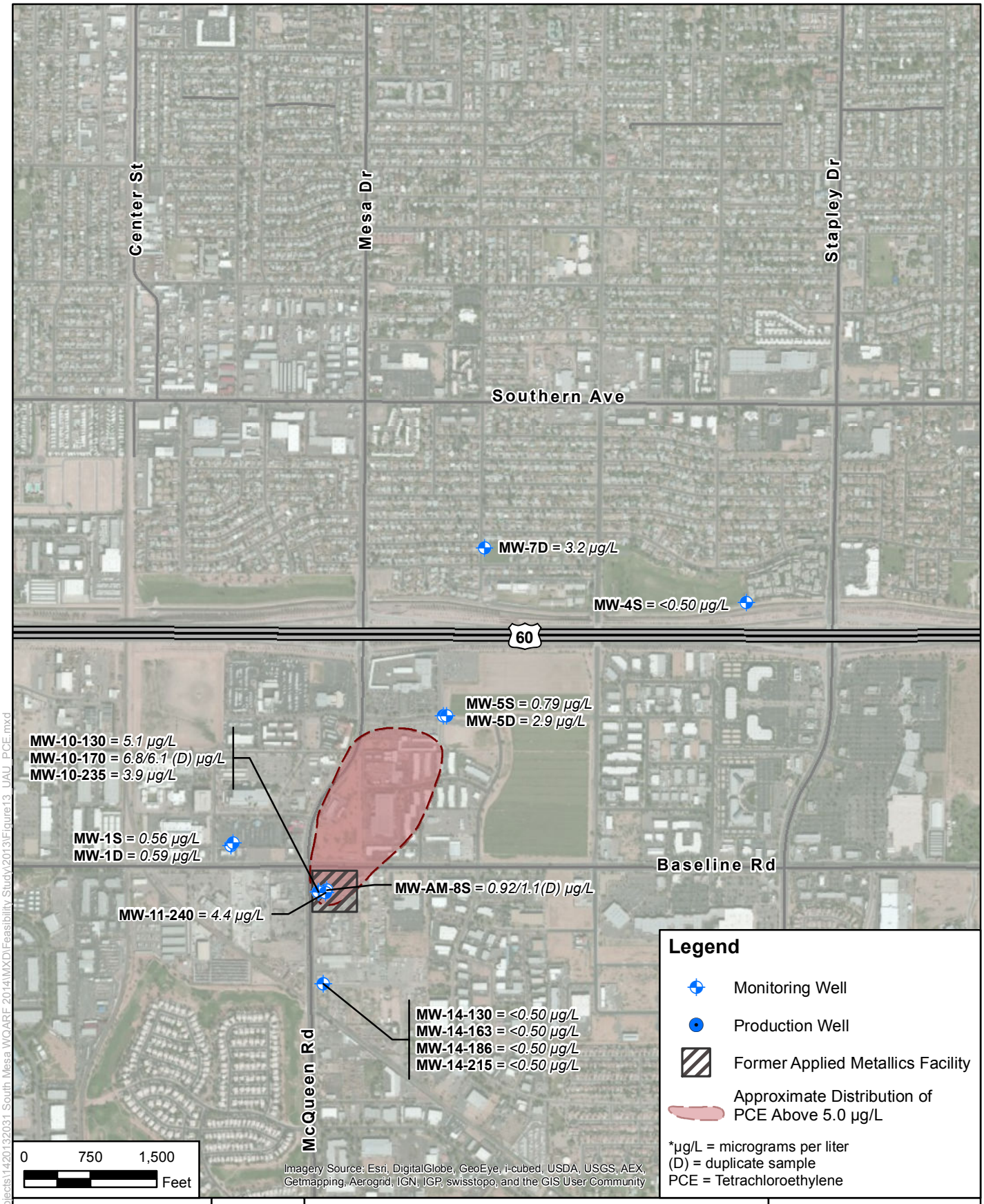
South Mesa WQARF Registry Site
Mesa and Gilbert, Arizona

September 20, 2013
Regional Groundwater Elevations

FIGURE
12

amec

Path: X:\Projects\1420132031 South Mesa WQARF 2014\MXD\Feasibility Study\2013\Figure12_SepRegionalWL.mxd



Job No.	1420132031
PM:	JNC
Date:	4/1/2014
Scale:	1" = 1500'

N

South Mesa WQARF Registry Site
Mesa and Gilbert, Arizona

September 2013
Upper Alluvial Unit PCE Distribution

FIGURE
13

amec

Path: X:\Projects\1420132031 South Mesa WQARF 2014\MXD\Feasibility Study\2013\Figure13_UAU_PCE.mxd

APPENDIX A

COM WELL NO. 14 ANALYTICAL RESULTS

APPLICATION FOR NEW DRINKING WATER SOURCE APPROVAL

All fields are required to be completed. Incomplete applications will not be accepted.

Please Note: This application must be completed by the PWS Permit Owner or authorized representative of the PWS and submitted with applicable water quality analyses results, ADWR Registration Record, Well Driller's Log, and the applicable review fee.

Fee Enclosed (Please Check One): ☒ Standard Scheduled Fee - $425 ☐ Expedited Fee - $850 (Double Scheduled Fee)

Proposed Public Water System (PWS) Information

PWS Name : City of Mesa					PWS 07 -095
PWS Address: P.O. Box 1466, Mesa, AZ 85211					
Type of Public Water System:	☒ Community	☐ Non-transient Non-community		☐ Transient Non-community	
Est. Population served: 452,000	Est. # Service Connections: 135,600			Approx. Start Date: 9/1/2014	
DWR Registration #: 55-221425	Water Source Type:	☒ Well	☐ CAP	☐ SRP	Other:
Water Source Name: City Well #14		☐ Existing EPDS			☒ New EPDS
Water Source Address: 652 S Horne, Mesa, AZ		Water Source Designated EPDS: 134			

PWS Permit Owner/Holder (PO) Information

PO Name: City of Mesa			PO Contact Name: Susan S. Miller
Address: P.O. Box 1466, Mesa, AZ 85211			
Phone #: 480-644-4109	Fax #: 480-644-2768	Cell #: 480-263-0395	Email: susan.s.miller@mesaaz.gov

PWS Permit Billing (PB) Information

Billing Contact Name: Fred Rustam			Title: Deputy City Engineer
Billing Address: P.O. Box 1466, Mesa, AZ 85211			
Phone #: 480-644-4688	Fax #: 480-644-3392	Cell #: 480-282-1624	Email: fred.rustam@mesaaz.gov

PWS Primary Certified Operator (CO) Information

Primary Certified Operator: Jake West			License Number: 08297
CO Business Name: City of Mesa			
Address: P.O. Box 1466, Mesa, AZ 85211			
Phone #: 480-644-3371	Fax #: 480-644-2768	Cell #: 480-861-5422	Email: Jake.West@mesaaz.gov

Professional Engineer (PE) Information

PE Name: Stephen D. Ganstrom, P.E.			License Number: 44695
PE Business Name: City of Mesa			
Address: P.O. Box 1466, Mesa, AZ 85211			
Phone #: 480-644-5207	Fax #: 480-644-4229	Cell #: 480-316-0235	Email: Stephen.Ganstrom@mesaaz.gov

Mail approval to: ☐ Water System owner ☐ PWS Certified Operator ☒ Project Engineer

Pursuant to A.R.S. § 41-1009, the Department may enter your establishment to conduct inspections. You have the right to receive a copy of the Department's inspection report at the time of the inspection, within thirty (30) days after the inspection, or as otherwise provided by federal law. By initialing below, I agree that the Department may send me a copy of its inspection report by e-mail to the following email address: susan.s.miller@mesaaz.gov

or by facsimile transmission to the following fax number: 480-644-2768 (Permit Owner/Holder initials) SSM

It is the responsibility of the permit holder to update the Department if there is a change in contact information.

PWS Permit Owner/ Holder*: (Person with Fiduciary Responsibility)	Susan S. Miller Name (Print)	Susan S. Miller Signature	4.3.2013 Date

(*Attached Letter of Authorization required if application is not signed by Permit Owner/Holder)

For Internal Use Only			
CAP ID	DWR-13-00169	Staff Assigned	

Arizona Department Of Environmental Quality

Drinking Water Source Approval

Samples To Be Taken At Source Only

07-095 System ID#	CITY OF MESA System Name
10/25/2012 Sample Date	08:00 (24 Hr clock) Sample Time
 ADEQ Project Number	55-221425 Well ID Number
New System YES ☐ NO ☑ New POE YES ☑ NO ☐	Surface Water Intake ID Number
Alan Martindale Owner/Contact Person Name	480-644-3481 Owner/Contact Person Phone Number
Sample Type ☑ Compliance Monitoring	Sample Collection Point/ID ☑ Point of Entry# 134

This form is to be filled out completely, and all pages are to be submitted together. If more than one laboratory participated in the analyses, please attach a copy of the original laboratory report, signed by the performing laboratory, to the back of this form.

All Results Shall Be Reported In Milligrams Per Liter (mg/L) Unless Otherwise Specified.

Please Note:

The Arsenic MCL is currently .05 mg/L. However, on Jan. 23, 2006, the Arsenic MCL will be .01 mg/L.

Please Mail This Completed Form To:

Arizona Department Of Environmental Quality
Technical Review Unit
Drinking Water Section (5415B-2)
1110 W Washington St,
Phoenix, AZ 85007

Inorganic Chemical Analysis

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL	Exceeds Reporting Limit
EPA 200.8	0.05	0.05	Arsenic	1005				
EPA 200.8	2	2	Barium	1010	10/29/12	0.030		
EPA 200.8	0.005	0.005	Cadmium	1015	10/29/12	< 0.001		
EPA 200.8	0.1	0.1	Chromium	1020	10/29/12	0.005		
EPA 200.8	1.3*	0.050	Copper	1022				
EPA 300.0	4.0	2.0	Fluoride	1025				
EPA 200.8	0.015*	0.0025	Lead	1030	10/29/12	0.002		
EPA245.1	0.002	0.002	Mercury	1035				
EPA 300.0	10	5	Nitrate (as N)	1040				
EPA 300.0	1	0.5	Nitrite	1041				
EPA 200.8	0.05	0.05	Selenium	1045	10/29/12	< 0.001		
EPA 200.8	0.006	0.006	Antimony	1074	10/29/12	< 0.001		
EPA 200.8	0.004	0.004	Beryllium	1075	10/29/12	< 0.001		
	0.2	0.2	Cyanide (as free id)	1024	10/25/12	<0.20		
EPA 200.8	0.1	0.1	Nickel	1036	10/29/12	0.002		
EPA 200.8	0.002	0.002	Thallium	1085	10/29/12	< 0.001		

*Action Level

Laboratory Information

Specimen Number: 12100555
Lab ID Number: AZ0410 Name: City of Mesa Compliance Laboratory
Comments:
Authorized Signature:_____

Physical Analysis

Analysis Method	Contaminant Name	Cont. Code	Analysis Run Date	Result
EPA 300.0	Sulfate	1055		
	Sodium	1052	10/30/12	139
	PH	1925	10/25/12	7.12
SM2320B	Alkalinity	1927	10/29/12	158
	Hardness/Calcium	1918	10/29/12	326
Calculation	Langelier Index	1997	12/05/12	-0.16
SM2550B	Temperature (°C)	1996	10/25/12	24
SM2540C	Total Dissolved Solids-TDS	1930	10/25/12	684

Laboratory Information

Specimen Number: 12100555
Lab ID Number: AZ0410 Name: City of Mesa Compliance Laboratory
Comments:
Authorized Signature:_____

Inorganic Chemical Analysis

Analysis Method	MCL	Reporting Limit	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds MCL	Exceeds Reporting Limit
200.8	0.010	0.010	Arsenic	1005	11/23/2012	0.0048	☐	☐
200.8	2	2	Barium	1010			☐	☐
200.8	0.005	0.005	Cadmium	1015			☐	☐
200.8	0.1	0.1	Chromium	1020			☐	☐
200.8	1.3*	0.05	Copper	1022	11/23/2012	0.0021	☐	☐
4500F-C	4	4	Fluoride	1025	11/14/2012	0.12	☐	☐
200.8	0.015*	0.0025	Lead	1030			☐	☐
245.1	0.002	0.002	Mercury	1035	10/31/2012	<0.0002	☐	☐
300.0	10	5	Nitrate (as N)	1040	10/26/2012	1.5	☐	☐
300.0	1	0.5	Nitrite	1041	10/26/2012	<0.05	☐	☐
200.8	0.05	0.05	Selenium	1045			☐	☐
200.8	0.006	0.006	Antimony	1074			☐	☐
200.8	0.004	0.004	Beryllium	1075			☐	☐
4500CN-F	0.2	0.2	Cyanide	1024			☐	☐
200.8	0.1	0.1	Nickel*	1036			☐	☐
200.8	0.002	0.002	Thallium	1085			☐	☐

*Action Level

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name: Eurofins Eaton Analytical

Comments:

Authorized Signature:

Physical Analysis

Analysis Method	Contaminant Name Method	Cont. Code	Analysis Run Date	Results
300	Sulfate	1055	10/26/2012	49
SM 4500-HB	pH**	1925		
2320B	Alkalinity	1927		
200.7	Hardness/Calcium*	1919		
SM 2330B	Langelier Index	1997		
	Temperature (°C)**	1996		
SM 2540C	Total Dissolved Solids-TDS	1930		
200.7	Sodium*	1052		

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name Eurofins Eaton Analytical

Comments:

Authorized Signature:

Synthetic Organic Chemical Analysis

Analysis Method	MCL	Reporting Limit	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds MCL	Exceeds Reporting Limit
515.4	0.07	0.0001	2,4-D	2105	11/02/2012	<0.0001	☐	☐
505	0.04	0.0001	Methoxychlor	2015	10/31/2012	<0.00005	☐	☐
	0.0005	0.0001	PCB (Polychlorinated Biphenyls)	2383			☐	☐
515.4	0.05	0.0002	2,4,5-TP (Silvex)	2110	11/02/2012	<0.0002	☐	☐
1613	3e-008	5e-009	2,3,7,8-TCDD(Dioxin)	2063	11/07/2012	<0.000000005	☐	☐
549.2	0.02	0.0004	Diquat	2032	10/30/2012	<0.0004	☐	☐
548.1	0.1	0.009	Endothall	2033	10/30/2012	<0.005	☐	☐
505	0.002	0.00001	Endrin	2005	10/31/2012	<0.00001	☐	☐
547	0.7	0.006	Glyphosate	2034	10/30/2012	<0.006	☐	☐
525.2	0.001	0.0001	Hexachlorobenzene	2274	10/31/2012	<0.00005	☐	☐
525.2	0.05	0.0001	Hexachlorocyclopentadine	2042	10/31/2012	<0.00005	☐	☐
531.2	0.2	0.002	Oxamyl	2036	10/31/2012	<0.0005	☐	☐
515.4	0.5	0.0001	Picloram	2040	11/02/2012	<0.0001	☐	☐
505	0.002	0.0002	Alachlor	2051	10/31/2012	<0.0001	☐	☐
525.2	0.004	0.00007	Simazine	2037	10/31/2012	<0.00005	☐	☐
505	0.003	0.001	Toxaphene	2020	10/31/2012	<0.0005	☐	☐
525.2	0.003	0.0001	Atrazine	2050	10/31/2012	<0.00005	☐	☐
531.2	0.04	0.0009	Carbofuran	2046	10/31/2012	<0.0005	☐	☐
515.4	0.001	0.00004	Pentachlorophenol	2326	11/02/2012	<0.00004	☐	☐
505	0.002	0.0002	Chlordane	2959	10/31/2012	<0.0001	☐	☐
551.1	0.0002	0.00002	Dibromochloropropane (DBCP)	2931	11/01/2012	<0.00001	☐	☐
551.1	0.00005	0.00001	Ethylene Dibromide (EDB)	2946	11/01/2012	<0.00001	☐	☐
505	0.0004	0.00004	Heptachlor	2065	10/31/2012	<0.00001	☐	☐
505	0.0002	0.00002	Heptachlor Epoxide	2067	10/31/2012	<0.00001	☐	☐
505	0.0002	0.00002	Lindane	2010	10/31/2012	<0.00001	☐	☐
525.2	0.0002	0.00002	Benzo(a)Pyrene	2306	10/31/2012	<0.00002	☐	☐
515.4	0.2	0.001	Dalapon	2031	11/02/2012	<0.001	☐	☐
525.2	0.006	0.0006	Di(2-ethylhexyl)phthalate	2039	10/31/2012	<0.0006	☐	☐
525.2	0.4	0.0006	Di(2-ethylhexyl)adipate	2035	10/31/2012	<0.0006	☐	☐
515.4	0.007	0.0002	Dinoseb	2041	11/02/2012	<0.0002	☐	☐

*Arcolor results may be submitted in lieu of PCB

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name: Eurofins Eaton Analytical

Comments: 2063 subcontracted to AZ0014

Authorized Signature:

Aroclor (PCB Screening Test)

Analysis Method	Reporting Limit	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds Reporting Limit
505	0.00008	Aroclor 1016	2388	10/31/2012	<0.00008	☐
505	0.02	Aroclor 1221	2390	10/31/2012	<0.0001	☐
505	0.0005	Aroclor 1232	2392	10/31/2012	<0.0001	☐
505	0.0003	Aroclor 1242	2394	10/31/2012	<0.0001	☐
505	0.0001	Aroclor 1248	2396	10/31/2012	<0.0001	☐
505	0.0001	Aroclor 1254	2398	10/31/2012	<0.0001	☐
505	0.0002	Aroclor 1260	2400	10/31/2012	<0.0001	☐

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name: Eurofins Eaton Analytical

Comments:

Authorized Signature:

Volatile Organic Chemical Analysis

Analysis Method	MCL	Reporting Limit	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds MCL	Exceeds Reporting Limit
524.2	0.007	0.0005	1,1 Dichloroethylene	2977	11/06/2012	<0.0005	☐	☐
524.2	0.2	0.0005	1,1,1-Trichlorethane	2981	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	1,1,2-Trichloroethane	2985	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	1,2-Dichloroethane	2980	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	1,2-Dichloropropane	2983	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	Benzene	2990	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	Carbon Tetrachloride	2982	11/06/2012	<0.0005	☐	☐
524.2	0.07	0.0005	cis-1,2 Dichloroethylene	2380	11/06/2012	<0.0005	☐	☐
524.2	0.7	0.0005	Ethylbenzene	2992	11/06/2012	<0.0005	☐	☐
524.2	0.1	0.0005	(mono) Chlorobenzene	2989	11/06/2012	<0.0005	☐	☐
524.2	0.6	0.0005	o-Dichlorobenzene	2968	11/06/2012	<0.0005	☐	☐
524.2	0.075	0.0005	para-Dichlorobenzene	2969	11/06/2012	<0.0005	☐	☐
524.2	0.1	0.0005	Styrene	2986	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	Tetrachloroethylene	2987	11/06/2012	<0.0005	☐	☐
524.2	1	0.0005	Toluene	2991	11/06/2012	<0.0005	☐	☐
524.2	0.1	0.0005	Trans-1,2-Dichloroethylene	2979	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	Trichloroethylene	2984	11/06/2012	<0.0005	☐	☐
524.2	0.002	0.0005	Vinyl Chloride	2976	11/06/2012	<0.0003	☐	☐
524.2	10	0.0015	Xylenes, Total	2955	11/06/2012	<0.0005	☐	☐
524.2	10	0.0015	Xylenes, Total	2955	11/06/2012	<0.0005	☐	☐
524.2	0.07	0.0005	1,2,4-Trichlorobenzene	2378	11/06/2012	<0.0005	☐	☐
524.2	0.005	0.0005	Dichloromethane	2964	11/06/2012	<0.0005	☐	☐

*Action Level

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name: Eurofins Eaton Analytical

Comments:

Authorized Signature:

Radiochemical Analysis

Analysis Method	MCL	Reporting Limit	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds MCL	Exceeds Reporting Limit
200.8	30	1	Combined Uranium	4006			☐	☐
			Uranium 234	4007			☐	☐
			Uranium 235	4008			☐	☐
			Uranium 238	4009			☐	☐
	5	1	Combined Radium	4010			☐	☐
		1	Radium 226	4020			☐	☐
*	20,000	1,000	Tritium	4102			☐	☐
*		10	Strontium-89	4172			☐	☐
*	8	2	Strontium-90,	4174			☐	☐
*		1	Iodine-131	4264			☐	☐
*		10	Cesium-134	4270			☐	☐

*Do not analyze for this contaminant unless notified by ADEQ

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name: Eurofins Eaton Analytical

Comments:

Authorized Signature:

Asbestos Analysis

Analysis Method	MCL	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds Reporting Limit
100.2	7 MFL	Asbestos	1094	11/06/2012	<0.2	☐

Laboratory Information

Specimen Number: 201210250530

Lab ID Number: AZ0778 Name Eurofins Eaton Analytical

Comments:

Authorized Signature:

Radiochemical Analysis

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL	Exceeds Reporting Limit
	15 pCi.L		Adjusted Gross Alpha	4000				
600/00-02		3 pCi/l	Gross Alpha	4002	11/1/2012	4.2 ± 0.9		
	30ppb	(reserved)	Combined Uranium	4006				
			Uranium 234	4007				
			Uranium 235	4008				
			Uranium 238	4009				
	5 pCi/L	1 pCi/l	Combined Radium	4010	10/25/2012	0.3 ± 0.1		
903.1		1 pCi/l	Radium 226	4020	10/25/2012	0.3 ± 0.1		
904.0		1 pCi/l	Radium 228	4030	10/25/2012	<0.4		
*	4 mrem	3 pCi/l	Gross Beta	4100				
*	20,000 pCi/l	1,000 pCi/l	Tritium	4102				
*		10 pCi/l	Strontium-89	4172				
*	8 pCi/l	2 pCi/l	Strontium-90	4174				
*		1 pCi/l	Iodine-131	4264				
*		10 pCi/l	Cesium-134	4270				

* Do not analyze for this contaminant unless notified by ADEQ

Laboratory Information

Speciman Number: RSE45201

Lab ID Number: AZ0462 Name: Radiation Safety Engineering, Inc.

Comments 121017008.00

Authorized Signature: [signature]

Date Public Water System Notified:

MICROBIOLOGICAL ANALYSIS

Analysis Method	MCL	Contaminant Name	Cont. Code	Test Start Date/Time	Analysis Run Date/Time	Result
SM9223B	Present 1 or More Coliform	Total Coliform	3000	10/25/12 10:25	10/26/2012	positive

ONLY REPORT FECAL RESULT IF TOTAL COLIFORM RESULT IS POSITIVE

Analysis Method	MCL	Contaminant Name	Cont. Code	Test Start Date/Time	Analysis Run Date/Time	Result
SM9223B	Present 1 or More Coliform	Total Coliform	3013	10/25/12 10:25	10/26/2012	absence

LABORATORY INFORMATION

>>>To Be filled out by laboratory personnel<<<

Specimen Number: 12100591

Lab ID Number: AZ0410 Name: City of Mesa Compliance Lab

Comments:

Authorized Signature: _____

DWAR 9: Revised 2004