AECOM

Submitted to:
Mr. Terry Hertel
NMED PTSB
5500 San Antonio Drive NE
Albuquerque, NM 87109

Submitted by :
AECOM
6501 Americas Parkway NE
Suite 900
Albuquerque, NM 87110

March 2015

2015 1st Quarter Groundwater Monitoring Report:

Chevron Isleta Site
3401 Isleta Boulevard
Albuquerque, New Mexico
Bernalillo County

NMWS PSTB Facility No. 30681

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2015 1st QUARTER GROUNDWATER MONITORING REPORT

Site Name:	Chevron Isleta
Responsible Party:	Unknown
Site Address:	3401 Isleta Boulevard SW Albuquerque, New Mexico
Facility Number:	30681
Author/Consulting Company:	AECOM One Park Square 6501 Americas Parkway, N.E. Suite 900 Albuquerque, NM 87110
Date of Confirmation of Release:	Unknown
Date of Report:	March 2015

STATEMENT OF FAMILIARITY

I am familiar with the information submitted in this report and the attached documents and attest that it is true and complete to the best of my knowledge.

Sincerely,

AECOM

Dale J. Flores, PMP

Dale Flores
Project Manager

1 Introduction

This report describes the sampling activities and results from the groundwater monitoring event that occurred on January 30, 2015 at the Chevron Isleta site in Albuquerque, New Mexico.

1.1 Background

The Chevron Isleta Site (Site) is located at 3401 Isleta Boulevard SW in the Albuquerque South Valley (Figure 1). A Walgreens store was built at the Site in 2012. Previously, remedial activities at the Site have included dig-and-haul followed by operation of a sparge/vent system. Groundwater monitoring has been on-going since 2007. The last sampling event at the Site was performed in April 2014. A total of ten monitor wells have been plugged and abandoned between 2005 and 2007. Two replacement wells (MW-8A and MW-11A) were installed at the Site in August 2012. Currently there are three active monitoring wells at the Site (MW-8A, MW-11A, and MW-26) (Figure 2).

The volatile organic compounds benzene, xylenes, and naphthalene were found in groundwater above New Mexico Water Quality Control Commission (NMWQCC) groundwater standards during the last monitoring event in April 2014. The benzene concentration from monitoring well MW-8A exceeded the NMWQCC groundwater standard of 10 micrograms per liter (µg/L) with a concentration of 65 µg/L. The xylene concentration from monitoring well MW-8A also exceeded the NMWQCC groundwater standard (620 µg/L) with a concentration of 810 µg/L. Naphthalene concentrations in monitoring wells MW-8A and MW-11A exceeded the NMWQCC groundwater standard (30 µg/L) with concentrations of 87 and 40.5 µg/L, respectively. Depth to water at the Site is approximately 8 feet and groundwater flow is to the south.

1.2 Scope of Work

This groundwater monitoring report has been completed in accordance with a workplan prepared by AECOM (formerly URS Corporation) and submitted to the NMED Petroleum Storage Tank Bureau (NMED-PSTB) on September 3, 2014. The workplan was approved in a letter to URS on October 27, 2014.

The scope of work performed during this quarterly event consisted of the following activities:

- Acquisition of standard access agreements from the Walgreens Corporation and the property owner of Bob's Burgers (Appendix A)
- Preparation of a site specific Health and Safety Plan
- Location and evaluation of conditions of three existing monitor wells
- Gauging, purging, and sampling of three monitor wells on- and off-site

1.3 Summary of Observations

Upon arrival at the site, all three monitor wells were found to be in good condition and in plain sight. Groundwater was observed at an average depth of 7.23 feet below top of casing (toc). New asphalt pavement was installed around MW-26; however, damage to the monitor well was not observed.

2 Previous Groundwater Monitoring Event

Haller & Associates (HAI) completed the previous groundwater monitoring event on April 14, 2014 during which it was determined that groundwater flowed to the south at a gradient of 0.001 foot/feet.

Field and laboratory measurements taken during the previous groundwater monitoring event indicated the following:

- MW-8A, MW-11A, and MW-26 were gauged, purged, and sampled.
- The groundwater sample from MW-8A exceeded NMWQCC standards with 65 µg/L of dissolved benzene, 810 µg/L of total xylenes and 87 µg/L of total naphthalenes detected.
- The groundwater sample from MW-11A exceeded the NMWQCC standard for total naphthalenes with 40.5 µg/L detected.
- Between January 2014 and April 2014, water levels rose by an average of 0.24 foot.

3 Groundwater Monitoring Activities

3.1 Fluid Level Measurements

On January 30, 2014, prior to monitor well purging and sampling, fluid levels and total depths were measured in each well with an electronic oil/water interface probe. Monitor wells were gauged in order of increasing contamination to minimize cross contamination and the interface probe was decontaminated prior to each use. During this event, groundwater elevations declined by an average of 0.31 foot and groundwater flowed at an approximate gradient of 0.001 foot/feet to the south (Figure 3), consistent with historic conditions. Historic fluid level data are summarized in Table 1.

Hydraulic Gradient Calculation

MW-8A groundwater elevation = 4852.73

MW-26 groundwater elevation = 4852.46

Distance between MW-8A and MW-26 = 325 feet

(4852.73-4852.46)/325 = 0.27/325 = **0.001 feet/foot**

3.2 Groundwater Sampling and Analyses

AECOM performed a groundwater monitoring event on January 30, 2014. Groundwater samples were collected from monitor wells MW-8A, MW-11A, and MW-26.

After monitor well gauging was completed, down well field parameters were collected by lowering a calibrated YSI/600 XLM water parameter probe into the well and allowing it to equilibrate. After initial down well water quality parameters were collected, monitor wells were purged of three well volumes with a new disposable bailer. During purging, water quality measurements were collected approximately every half gallon for temperature, pH, specific conductance, dissolved oxygen, and oxidation reduction potential. Purge water was temporarily contained in a 5 gallon bucket and observed for the presence of hydrocarbon sheen or non-aqueous phase liquid (NAPL), odors, and any other notable characteristics. Purge water was then discharged onsite to evaporate.

Following well purging, groundwater samples were collected by slowly lowering a new disposable bailer into the well and decanting the sample into laboratory prepared, pre-cleaned, acid-preserved sample containers. Each sample was labeled with respect to date, time, site, monitor well number, and analytical method requested. Groundwater samples were immediately placed on ice and shipped to the laboratory for analysis within the required hold times. Complete chain-of-custody records accompanied groundwater samples at all times. Each groundwater sample was analyzed by the following Environmental Protection Agency (EPA) Methods:

Chevron Isleta Groundwater Analytical Requirements

Analysis	Analytical Method	Container /Preservation
Volatile Organic Compounds	EPA 8260B	3x40 ml, HCL, 4˚C

HCL – hydrochloric acid. EPA – Environmental Protection Agency, ml – milliliter

Both historic and current groundwater analytical data are summarized on Table 2. Groundwater sampling procedures are attached as Appendix B. Groundwater field sampling forms are attached as Appendix C. The laboratory report from Test America is attached as Appendix D.

3.3 Discussion of Trends and Changes

On January 30, 2015, water levels were near the low end of their historic fluctuation range. Since April 2014, water levels have declined by an average of 0.31 foot (Table 1). Dissolved benzene and/or naphthalenes at monitor wells MW-8A and MW-11A continue to be the primary contaminants of concern at the site (Figure 4).

MW-8A – Since August 2012, dissolved benzene, total xylenes and/or total naphthalenes have exceeded NMWQCC standards at MW-8A. During that period, benzene consistently exceeded the NMWQCC standard ranging from 10 to 65 µg/L; however, total xylenes ranging from 120 to 7,800 µg/L; and total naphthalenes ranging from 21 to 1,300 µg/L have fluctuated above and below their respective NMWQCC standards (Graphs 1 and 2). All three contaminants of concern at MW-8A have exhibited a steadily decreasing trend over time. Between April 14, 2014 and January 30, 2015, dissolved benzene decreased from 65 to 10 µg/L, an 84% reduction. During the same period, total naphthalenes decreased by 76%, from 87 to 21 µg/L, and no longer exceeds the NMWQCC standard of 30 µg/L. Total xylenes (120 µg/L) decreased by 85% from 810 µg/L in April 2014, and no longer exceeds the NMWQCC standard. On January 30, 2015, ethylbenzene (40 µg/L), toluene (0.81 µg/L) were also detected, but at concentrations below their respective NMWQCC standards (Figure 4).

MW-11A – Dissolved benzene concentrations have not exceeded the NMWQCC standard since July 2013 (13 µg/L). Since August 2012, dissolved napthalenes have consistently exceeded the NMWQCC standard ranging from 40.5 to 1,060 µg/L. Both contaminants of concern at MW-11A have exhibited a steadily decreasing trend over time. Between April 14, 2014 and January 30, 2015, the total naphthalenes concentration (43 µg/L) increased slightly by 6% and continues to exceed the NMWQCC standard of 30 µg/L (Graph 3).

MW-26 – During this groundwater monitoring event, dissolved organic contaminants were not detected at monitor well MW-26. Organic contaminants have not been detected at MW-26 since at least October 1999 (Table 2).

3.4 Containment of Release

Based on groundwater flow direction and laboratory data, the dissolved phase hydrocarbon plume of contamination appears to have migrated off-site underneath the southbound turn lane of Isleta Boulevard. Historical data, as well as data from this monitoring event, indicate that the plume is shrinking over time (Figures 5 and 6).

4 Summary and Conclusion

Groundwater elevations at the site have declined by an average of approximately 0.31 foot since April 2014 and remain within their historical fluctuation range. On January 30, 2015, dissolved benzene and total naphthalenes were the only remaining contaminants that exceed NMWQCC standards at the site. Water quality measurements of dissolved oxygen (1.98-2.17 mg/L) and oxidation reduction potential (+125.4 to +149.3 millivolts) indicate an aerobic environment within the dissolved phase plume which is conducive to natural attenuation processes.

5 Recommendations

Relatively high dissolved oxygen and oxidation reduction potential, within the dissolved phase plume, indicate an aerobic environment which is favorable for natural attenuation processes of petroleum hydrocarbons. Furthermore, contaminant concentration trends appear to be steadily decreasing over time and are within one order of magnitude of their respective NMWQCC standards. Therefore, based on the data and observations found in this report and correspondence with NMED-PSTB personnel, AECOM recommends continued quarterly monitoring of natural attenuation at the site. Remedial action is not recommended.

6 References

Haller and Associates Inc. Groundwater Monitoring Report Chevron Isleta PSTB # 30681, 3401 Isleta Boulevard, Albuquerque, New Mexico, April 22, 2014

URS Corporation, Work Plan Submittal for Chevron Isleta (Facility ID No. 30681), Albuquerque, New Mexico, Professional Services Contract # 14-667-2000-0032, September 3, 2014

New Mexico Environment Department Petroleum Storage Tank Bureau Regulations, 20.5 NMAC, December 2003

Tables

Table 1. Groundwater Elevation
Chevron Isleta (NMED-PSTB Facility # 30681)
3401 Isleta Boulevard SW, Albuquerque, New Mexico

Well ID	Date	Casing Elevation	Depth to NAPL	Depth to Groundwater	NAPL Thickness	Groundwater Elevation
MW-8	12/10/1999	4928.80	---	7.96	---	4920.84
	11/16/2000		---	7.60	---	4921.20
	12/18/2000		---	7.91	---	4920.89
	2/20/2001		---	8.14	---	4920.66
	5/30/2001		---	7.73	---	4921.07
	8/20/2001		---	7.75	---	4921.05
	12/6/2001		---	7.95	---	4920.85
	3/8/2002		---	8.23	---	4920.57
	5/30/2002		---	7.78	---	4921.02
	9/9/2002		---	8.04	---	4920.76
	8/26/2003		---	7.96	---	4920.84
	1/29/2004		---	8.38	---	4920.42
MW-8R	4/16/2004	4928.62	---	7.63	---	4920.99
	5/10/2007		---	7.25	---	4921.37
	11/12/2007		---	7.85	---	4920.77
	9/16/2011	4860.66	---	7.62	---	4853.04
MW-8A	8/29/2012	4860.53	---	7.62	---	4852.91
	1/11/2013		---	7.95	---	4852.58
	7/15/2013		---	7.32	---	4853.21
	1/15/2014		---	7.71	---	4852.82
	4/14/2014		---	7.50	---	4853.03
	1/30/2015		---	7.80	---	4852.73
MW-11	12/10/1999	4929.20	---	8.43	---	4920.77
	11/16/2000		---	8.31	---	4920.89
	12/18/2000		---	8.38	---	4920.82
	2/20/2001		---	8.61	---	4920.59
	5/30/2001		---	8.21	---	4920.99
	8/20/2001		---	8.19	---	4921.01
	12/6/2001		---	8.41	---	4920.79
	3/8/2002		---	8.71	---	4920.49
	5/30/2002		---	8.24	---	4920.96
	9/9/2002		---	8.51	---	4920.69
	8/26/2003		---	8.44	---	4920.76
	1/29/2004		---	8.86	---	4920.34
MW-11R	4/16/2004	4928.99	---	8.09	---	4920.90
	5/10/2007		---	7.77	---	4921.22
	11/12/2007		---	7.07	---	4921.92
	9/16/2011	4861.09	---	8.12	---	4920.87
MW-11A	8/29/2012	4859.69	---	6.74	---	4852.95
	1/11/2013		---	7.07	---	4852.62
	7/15/2013		---	6.49	---	4853.20
	1/15/2014		---	6.89	---	4852.80
	4/14/2014		---	6.62	---	4853.07
	1/30/2015		---	6.94	---	4852.75

--- not detected
NAPL non-aqueous phase liquid
All depths recorded relative to top of casing
All elevations recorded relative to mean sea level

Table 1. Groundwater Elevation
Chevron Isleta (NMED-PSTB Facility # 30681)
3401 Isleta Boulevard SW, Albuquerque, New Mexico

Well ID	Date	Casing Elevation	Depth to NAPL	Depth to Groundwater	NAPL Thickness	Groundwater Elevation
MW-26	12/10/1999	4927.33	---	7.03	---	4920.30
	12/18/2000		---	6.77	---	4920.56
	2/20/2001		---	6.99	---	4920.34
	5/30/2001		---	6.53	---	4920.80
	8/20/2001		---	6.53	---	4920.80
	12/6/2001		---	6.79	---	4920.54
	3/8/2002		---	7.09	---	4920.24
	5/30/2002		---	6.54	---	4920.79
	9/9/2002		---	7.82	---	4919.51
	8/26/2003		---	6.74	---	4920.59
	1/29/2004		---	7.23	---	4920.10
	4/16/2004		---	6.40	---	4920.93
	5/10/2007		---	6.24	---	4921.09
	11/12/2007		---	6.60	---	4920.73
	9/16/2011	4859.41	---	6.67	---	4852.74
	8/29/2012		---	6.67	---	4852.74
	1/11/2013		---	7.06	---	4852.35
	7/15/2013		---	6.51	---	4852.90
	1/15/2014		---	6.90	---	4852.51
	4/14/2014		---	6.65	---	4852.76
	1/30/2015		---	6.95	---	4852.46
				7.23		
				avg change 2015		

--- not detected
NAPL non-aqueous phase liquid
All depths recorded relative to top of casing
All elevations recorded relative to mean sea level

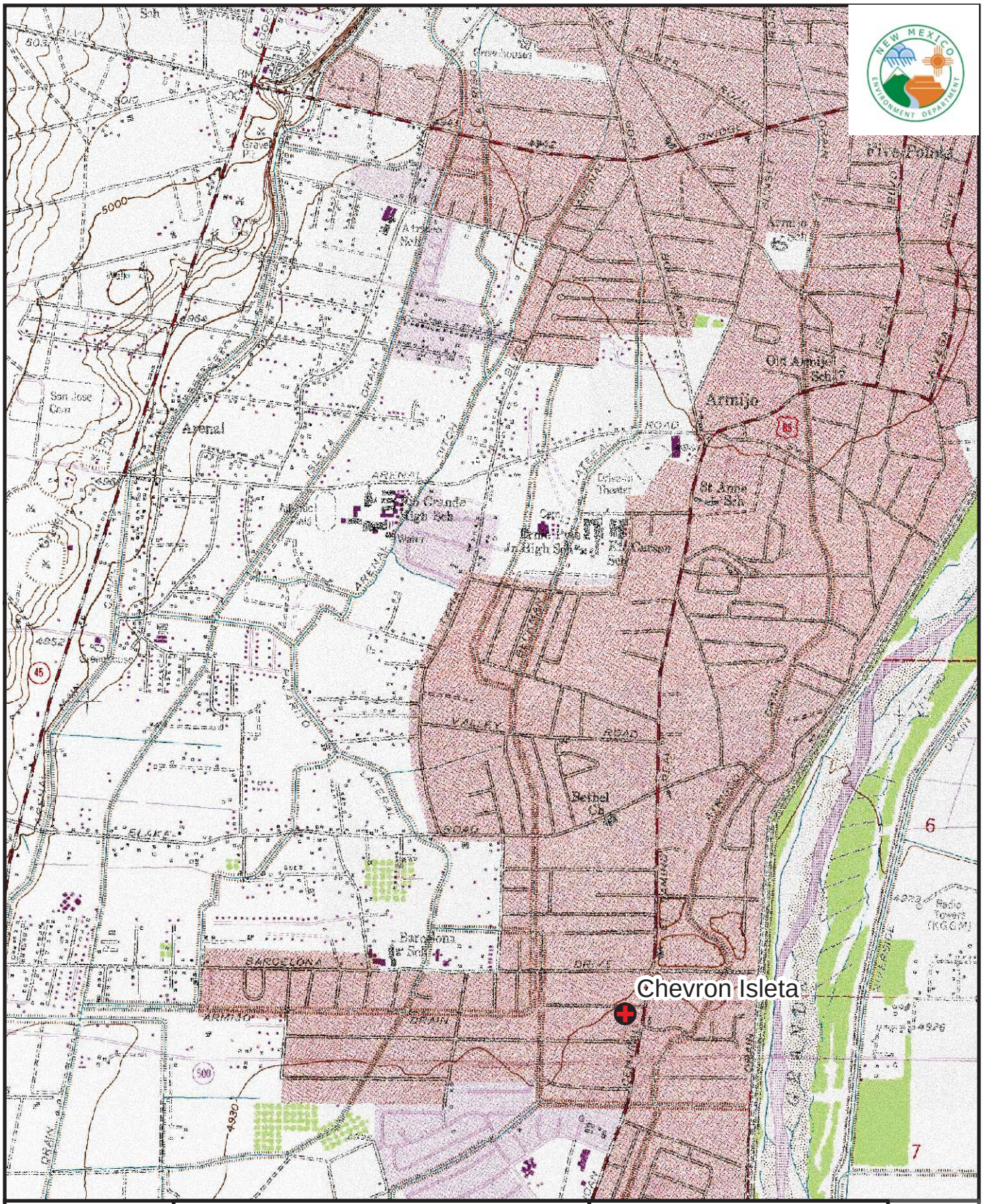
Table 2. Groundwater Organics Results
Chevron Isleta (NMED-PSTB Faciltiy # 30681)
3401 Isleta Boulevard SW, Albuquerque, New Mexico

Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	Xylenes	Ethylene Dibromide	Ethylene Dichloride	Methyl Tert Butyl Ether	Total Naphthalenes
NMWQCC/EIB Standards (ug/L)		**10**	**750**	**750**	**620**	**0.1**	**10**	**100**	**30**
MW-8	10/26/1995	**1800**	87	440	510	NA	NA	BDL	NA
	6/24/1997	**1100**	74	430	**820**	NA	NA	BDL	NA
	10/8/1999	**2100**	BDL	180	350	NA	NA	BDL	BDL
	12/10/1999	**3700**	90	580	**1147**	NA	NA	BDL	BDL
	11/16/2000	**1600**	99	730	**2020**	NA	NA	BDL	BDL
	12/18/2000	**3200**	**1300**	**2100**	**10900**	NA	NA	BDL	BDL
	2/21/2001	**4000**	**870**	**2600**	**12800**	NA	NA	BDL	1.5
	5/30/2001	**2000**	690	**1900**	**10700**	NA	NA	BDL	BDL
	8/20/2001	**2600**	**780**	**2200**	**13600**	NA	NA	BDL	BDL
	12/6/2001	**2500**	610	**1900**	**11900**	NA	NA	BDL	3.1
	3/8/2002	**630**	150	610	**3600**	NA	NA	BDL	BDL
	5/30/2002	**1200**	290	**1500**	**9400**	NA	NA	BDL	2.01
	9/9/2002	**490**	74	560	**3220**	NA	NA	BDL	BDL
	8/26/2003	**2400**	79	**2000**	**6810**	NA	NA	BDL	BDL
	1/29/2004	**1200**	17	**830**	**2121**	NA	NA	BDL	BDL
MW-8R	4/16/2004	**1100**	**2600**	**3800**	**19100**	NA	NA	BDL	**2290**
	5/10/2007	**440**	BDL	**1000**	**2200**	BDL	NA	BDL	**460**
	11/12/2007	**790**	BDL	**1700**	**1600**	BDL	NA	BDL	**540**
	9/16/2011	**360**	2.8	72	5.6	<1.0	<1.0	<1.0	**582**
MW-8A	8/29/2012	**64**	95	**2100**	**7800**	<10	<10	<10	**1300**
	1/11/2013	**22**	14	340	**1200**	<1.0	<1.0	<1.0	**250**
	7/15/2013	**40**	12	260	**890**	<10	<10	<10	**100**
	1/15/2014	**19**	<10	230	**1000**	<10	<10	<10	**76**
	4/14/2014	**65**	<10	190	**810**	<10	<10	<10	**87**
	1/30/2015	**10**	0.81	40	120	<0.50	<0.50	<0.50	21
MW-11	10/8/1999	**610**	BDL	150	130	NA	NA	BDL	**32**
	12/10/1999	**700**	BDL	260	280	NA	NA	BDL	**73**
	11/16/2000	**680**	32	300	377	NA	NA	BDL	**120**
	12/20/2000	**600**	7.7	330	414	NA	NA	BDL	**110**
	2/21/2001	**1000**	17	460	**740**	NA	NA	BDL	**120**
	5/30/2001	**1100**	9.2	480	548	NA	NA	BDL	**160**
	8/20/2001	**710**	BDL	290	240	NA	NA	BDL	**189**
	12/6/2001	**680**	1.5	160	160	NA	NA	BDL	**121**
	3/8/2002	**610**	BDL	250	290	NA	NA	BDL	**156**
	5/30/2002	**430**	1.2	200	151	NA	NA	BDL	**571**
	9/9/2002	**50**	BDL	28	14	NA	NA	BDL	**42**
	8/26/2003	**590**	1.8	200	171	NA	NA	BDL	**275**
	1/29/2004	**490**	1.1	120	77	NA	NA	BDL	**181**
MW-11R	4/16/2004	**1200**	690	**4100**	**14700**	NA	NA	BDL	**2310**
	5/10/2007	**16**	5.2	45	120	BDL	NA	BDL	5.1
	11/12/2007	**23**	BDL	7	BDL	BDL	NA	BDL	BDL
	9/16/2011	**39**	<1.0	15	2.4	<1.0	<1.0	<1.0	**105**
MW-11A	8/29/2012	**26**	<10	230	40	<10	<10	<10	**1060**
	1/11/2013	2.5	<1.0	9.7	<1.5	<1.0	<1.0	<1.0	**126**
	7/15/2013	**13**	<1.0	9.3	<1.5	<1.0	<1.0	<1.0	**81**
	1/15/2014	4.3	<1.0	7.2	<1.5	<1.0	<1.0	<1.0	**58**
	4/14/2014	1.6	<1.0	13	3.3	<1.0	<1.0	<1.0	**40.5**
	1/30/2015	5.4	<0.50	4.7	<1.5	<0.50	<0.50	<0.50	**43**
MW-26	10/8/1999	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	12/10/1999	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	12/18/2000	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	2/20/2001	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	5/30/2001	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	8/20/2001	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	12/6/2001	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	3/8/2002	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	5/30/2002	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	9/9/2002	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	8/26/2003	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	1/29/2004	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	4/16/2004	NS	NS	NS	NS	NS	NS	NS	NS
	5/10/2007	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	11/12/2007	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL
	9/16/2011	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
	8/29/2012	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
	1/11/2013	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
	7/15/2013	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
	1/15/2014	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
	4/14/2014	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<4.0
	1/30/2015	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<2..5

ug/L micrograms per liter
NAPL non-aqueous phase liquid
NMWQCC New Mexico Water Quality Control Board
EIB Environmental Improvment Board

Data presented in bold exceeds NMWQCC/EIB standards

Figures



AECOM
6501 Americas Ave NE
Suite 900
Albuquerque, NM 87110

Source: USGS Albuquerque West 7.5 Minute Topo
http://rgis.unm.edu/

0 0.35 0.7 Miles

SITE LOCATION
CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 1

AECOM
6501 Americas Ave NE
Suite 900
Albuquerque, NM 87110

Source: MRCOG 2014 Digital OrthoImagery
http://www.bernco.gov/gis-program/

1 inch = 60 feet

0 30 60 120 Feet

SITE MAP

CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 2

AECOM
6501 Americas Ave NE
Suite 900
Albuquerque, NM 87110

Source: MRCOG 2014 Digital OrthoImagery
http://www.bernco.gov/gis-program/

1 inch = 60 feet

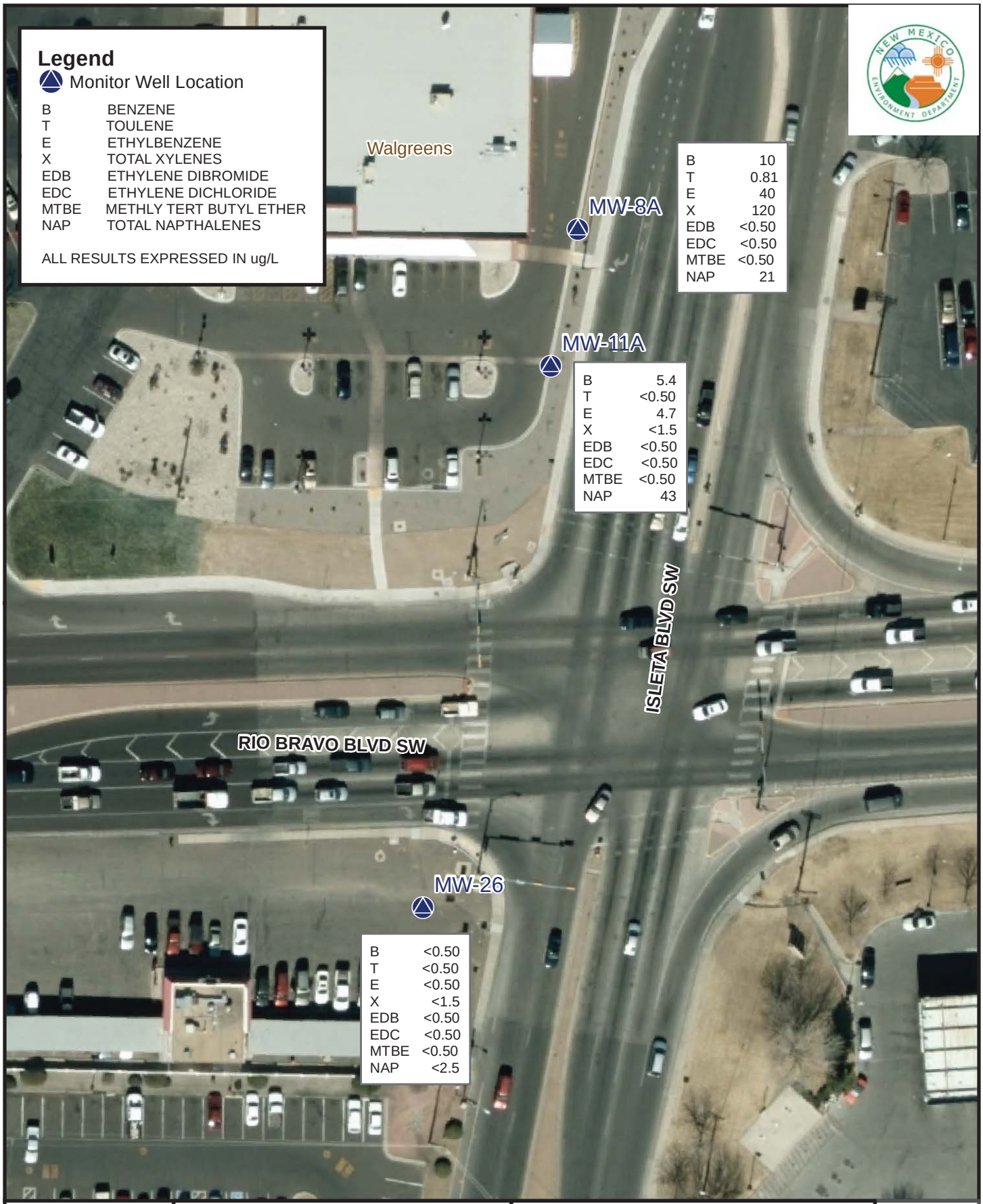
0 30 60 120 Feet

WATER TABLE MAP

CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 3
3/10/2015

Gauging Date
1/28/2015



AECOM
6501 Americas Ave NE
Suite 900
Albuquerque, NM 87110

Source: MRCOG 2014 Digital OrthoImagery
http://www.bernco.gov/gis-program/

1 inch = 60 feet

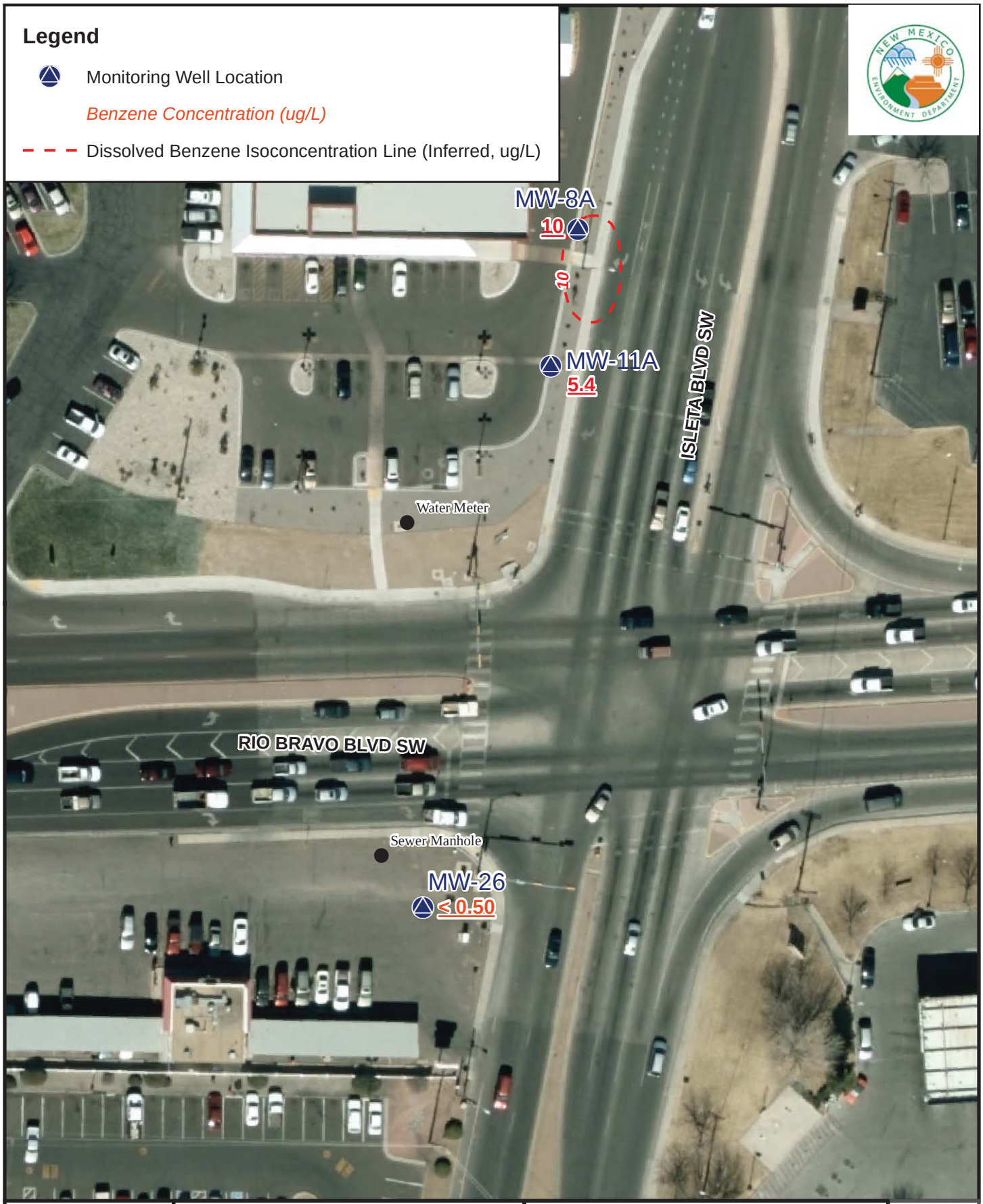
N 0 30 60 120 Feet

DISSOLVED ORGANIC RESULTS MAP

CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 4
3/10/2015

Sample Date
1/30/2015



AECOM
6501 Americas Ave NE
Suite 900
Albuquerque, NM 87110

Source: MRCOG 2014 Digital OrthoImagery
http://www.bernco.gov/gis-program/

1 inch = 60 feet

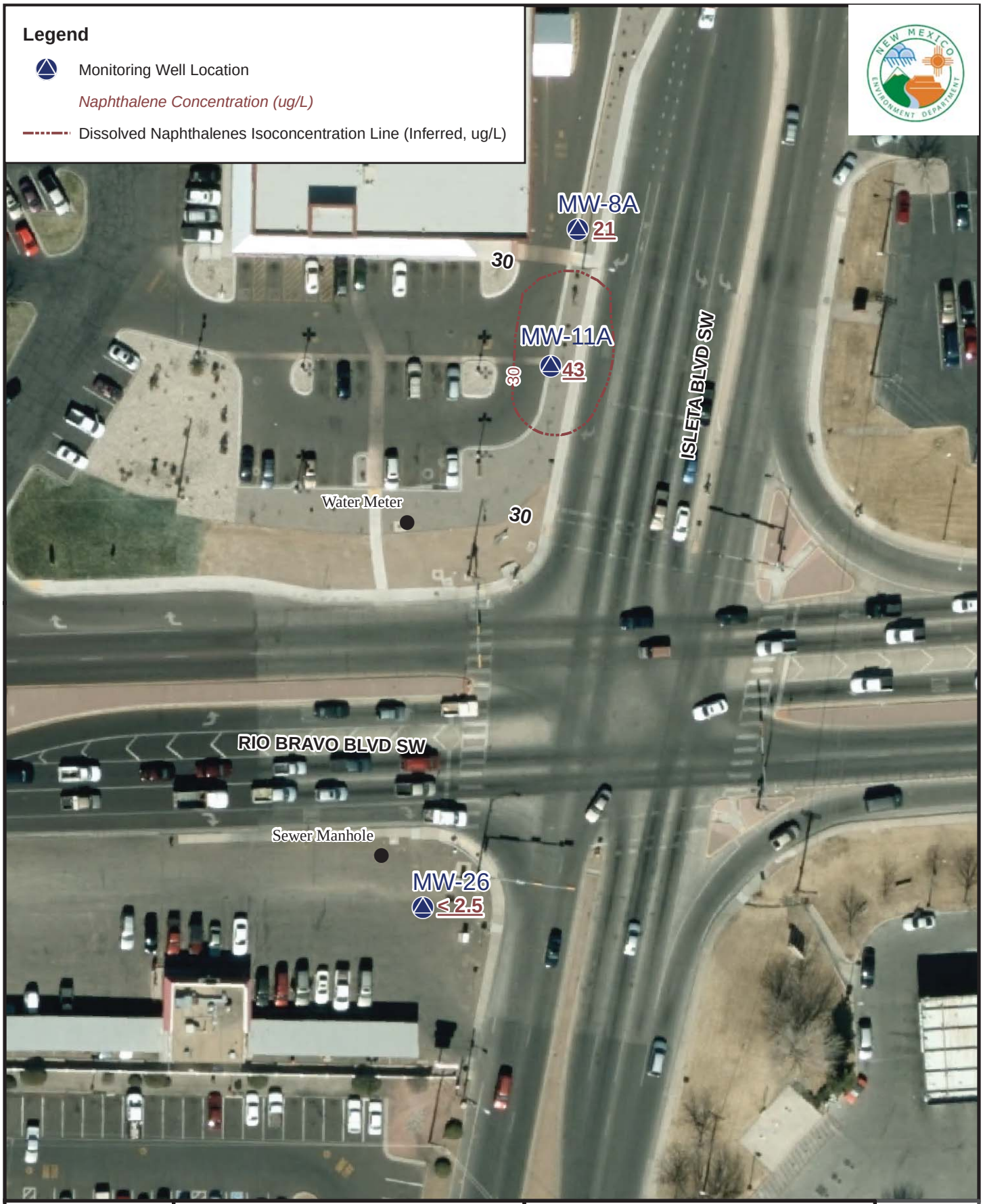
0 30 60 120 Feet

DISSOLVED BENZENE MAP

CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 5
3/10/2015

Sample Date
1/30/2015



AECOM
6501 Americas Ave NE
Suite 900
Albuquerque, NM 87110

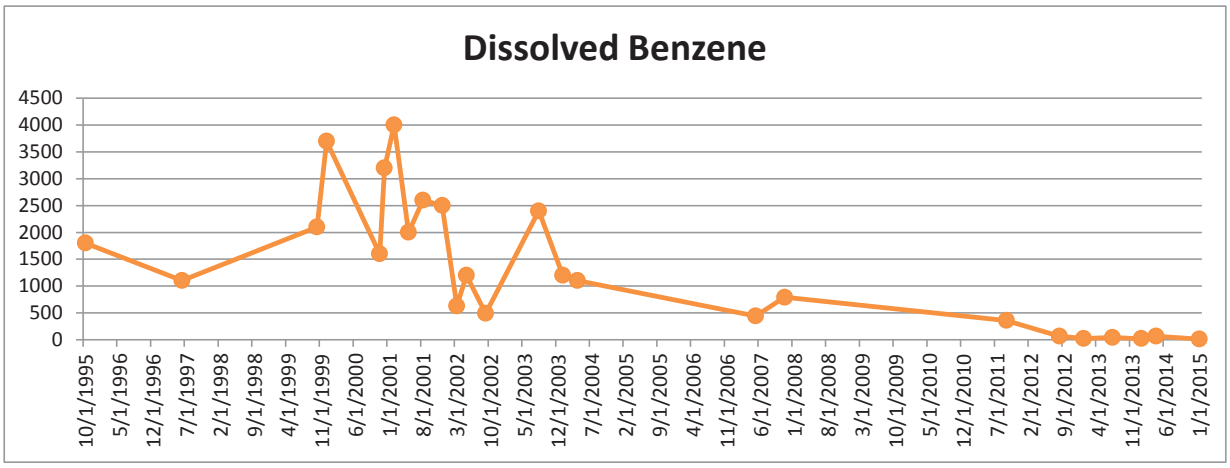
Source: MRCOG 2014 Digital OrthoImagery
http://www.bernco.gov/gis-program/
1 inch = 60 feet
0 30 60 120 Feet

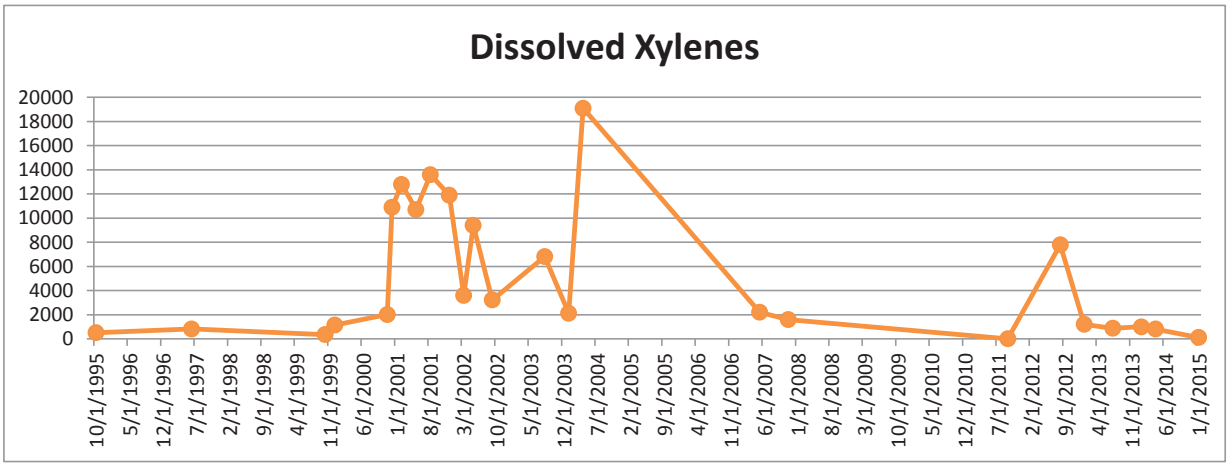
DISSOLVED NAPHTHALENES MAP
CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

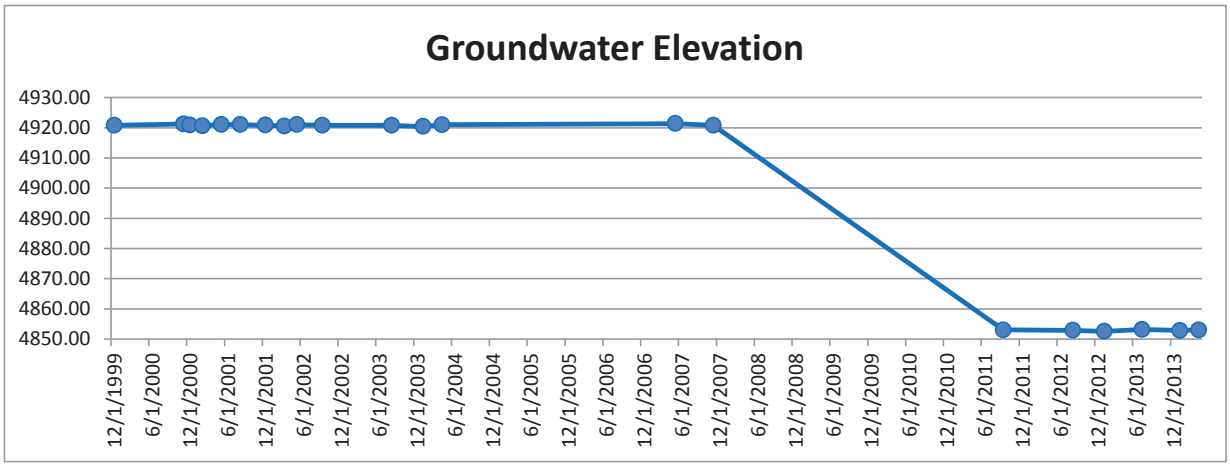
FIGURE 6
3/10/2015
Sample Date
1/30/2015

Graphs

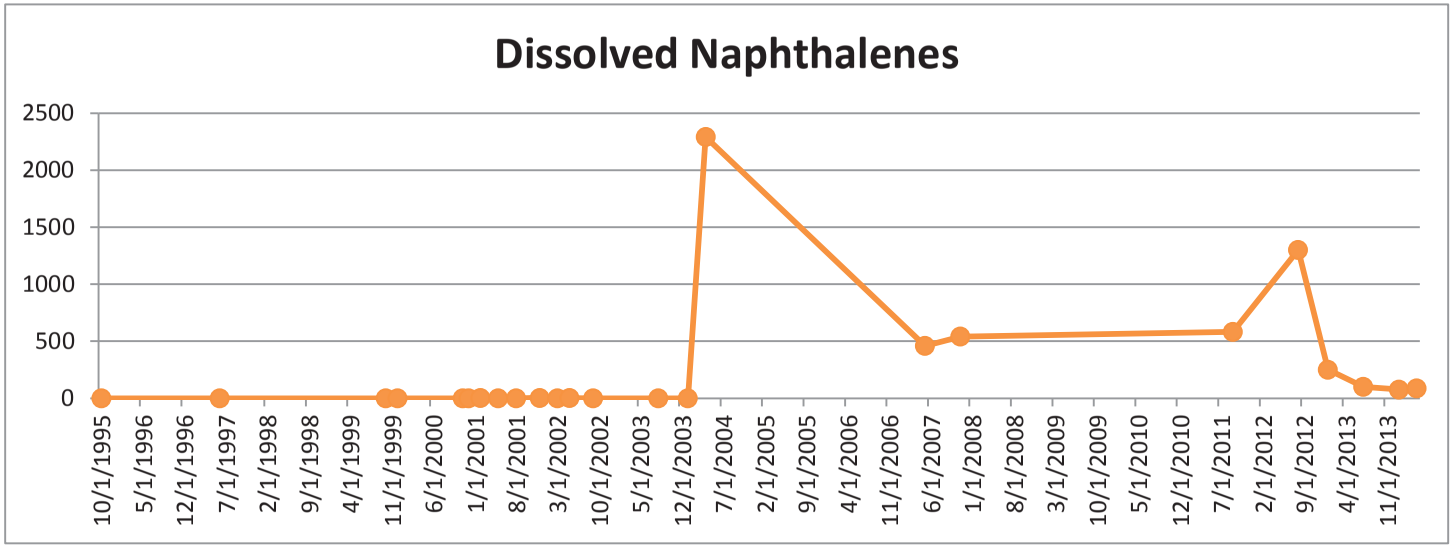
Graph 1
MW-8A Dissolved Benzene and Xylenes Concentrations Vs Time
Chevron Isleta Site, Albuquerque, New Mexico

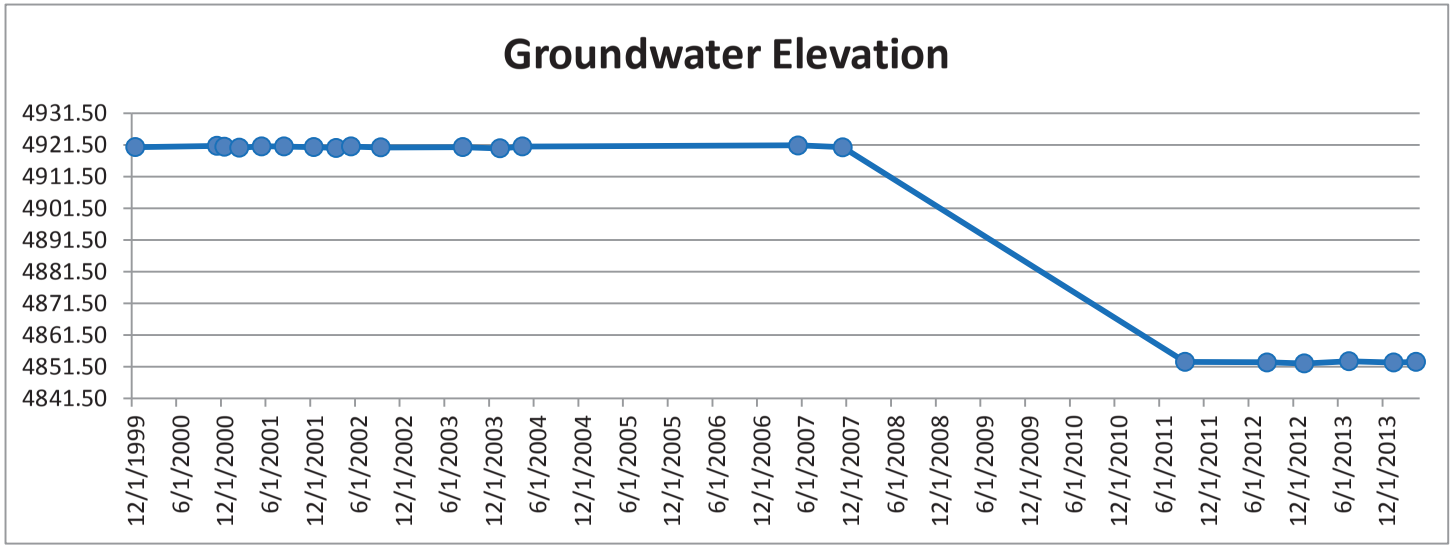




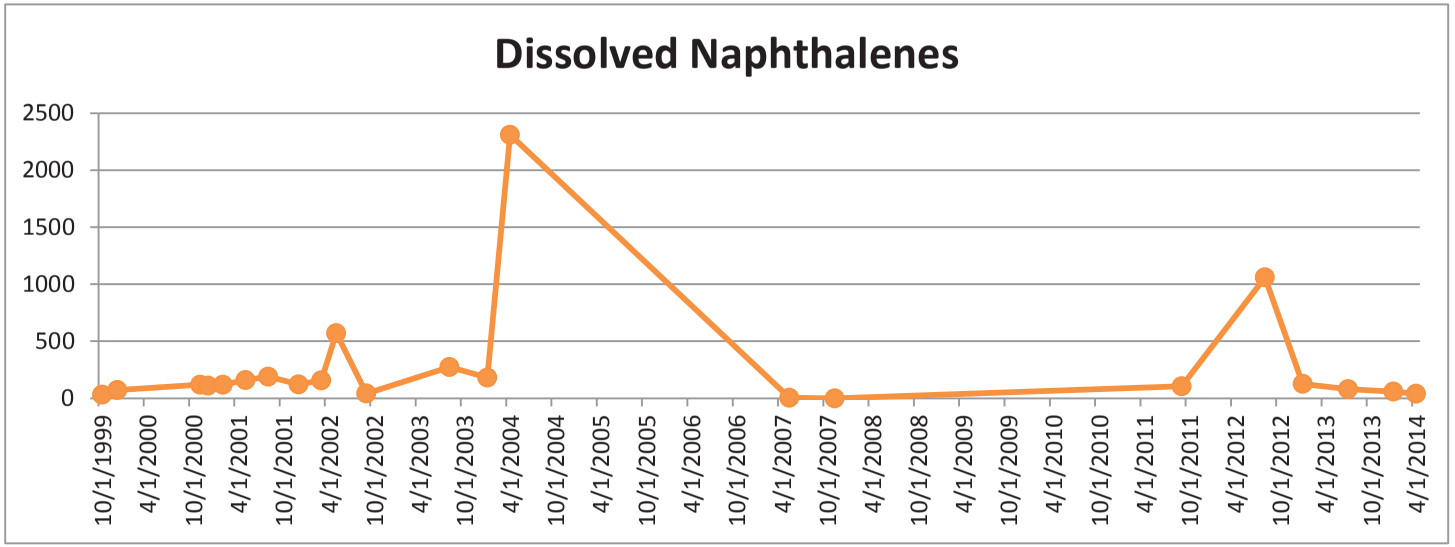


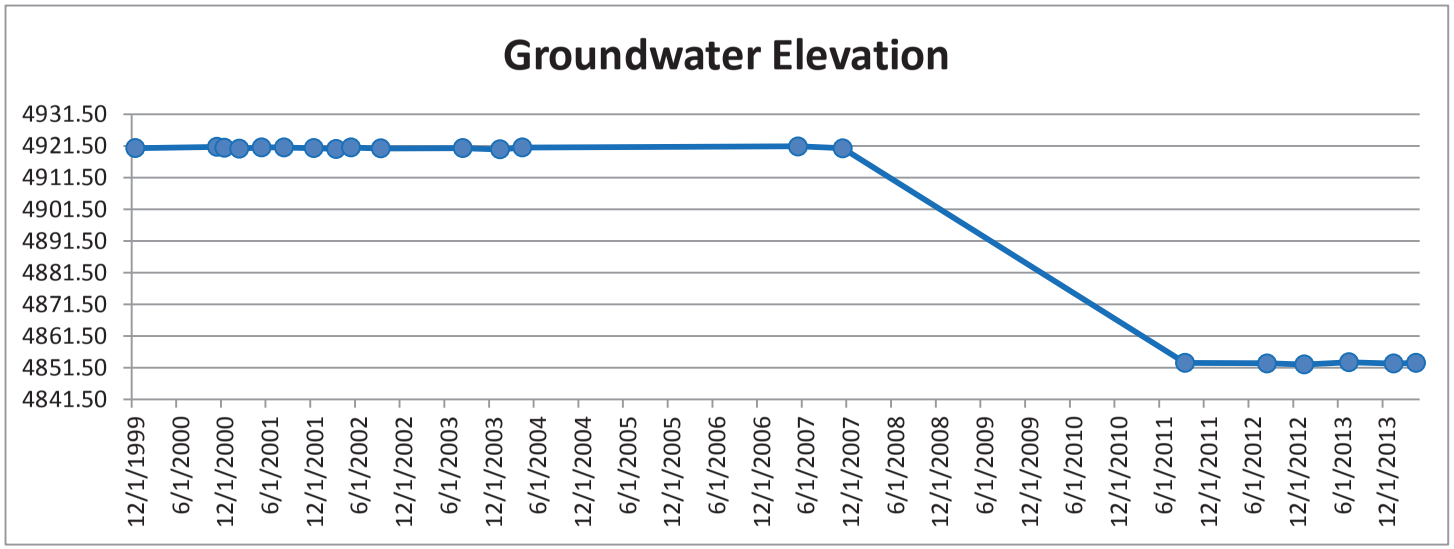
Graph 2
MW-8A Dissolved Naphthalenes Concentrations Vs Time
Hans Bazen Site, Los Lunas , New Mexico





Graph 3
MW-11A Dissolved Naphthalenes Concentrations Vs Time
Hans Bazen Site, Los Lunas , New Mexico





Appendix A. Access Agreements

CONSENT FOR ACCESS TO PROPERTY

Name of Property Owner: Bob Salas
Location of Property: 1690 Rio Bravo Boulevard SW, Albuquerque, New Mexico 87105

This is my consent to the New Mexico Environment Department (NMED) and its authorized officers, employees, contractors, and representatives for access to the above-described Property for the following purposes:

- locate, check condition of, inventory, repair, plug and abandon, and survey existing ground water monitoring wells as necessary
- measure fluid levels in and retrieve and analyze ground water samples from monitoring wells

NMED or its representative will provide the Property Owner written or oral notice prior to each entrance onto Property. This notice shall be given to:

Kim Herrera or Bob Salas
1690 Rio Bravo Boulevard SW
Albuquerque, New Mexico 87105
(505) 877-8589

Property Owner may observe activities on the Property, consistent with Occupational Health and Safety Regulations (see 29 CFR § 1910.120) and may split all samples collected at the Property. Property Owner is responsible for the provision of all equipment and accessories and for laboratory costs necessary to split samples.

Installations on the Property will be placed to minimize interference with the movement of vehicles and regular activities on the Property. Following completion of the project, the NMED contractor will properly abandon all wells, remove equipment, all materials, trash, fencing, and other associated items.

- Property Owner requests that all work be scheduled for completion prior to 10:30 a.m. daily start of business

This permission is given by me voluntarily with knowledge of my right to refuse and without coercion. I have had an opportunity to ask questions and all my questions have been answered to my satisfaction.

T.S.
Signature-Property Owner or Representative

12-3-99
Date

ENVIRONMENTAL LICENSE AGREEMENT

THIS ENVIRONMENTAL LICENSE AGREEMENT ("License Agreement") is entered into this _____ day of January, 2015, between **WALGREEN CO.**, an Illinois corporation ("Walgreens"), and AECOM Technical Services, Inc. ("Licensee").

WHEREAS, Walgreens is the lessee of that certain property commonly known as 53401 Isleta Boulevard SW, Albuquerque, New Mexico (the "Property").

WHEREAS, Licensee as a contractor for the New Mexico Environment Department ("NMED") has requested that Walgreens grant reasonable access to the Property for the purpose of performing the Work (defined below); and

WHEREAS, Walgreens has consented to Licensee having such access to the Property for the sole purpose of performing the Work pursuant to the terms, conditions and limitations set forth in this License Agreement.

NOW, THEREFORE, in consideration of the covenants and conditions set forth in this License Agreement and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties, Walgreens and Licensee hereby agree as follows:

1. Walgreens hereby grants Licensee a license to access the Property for the sole purpose of installing one groundwater monitoring well (the "Equipment") at the location indicated on the plan attached hereto as Exhibit "A" and the maintenance thereof on an ongoing basis on behalf of NMED, to determine the presence, if any, of any Hazardous Substance (defined below) located in, on, under or about the Property and for no other purpose (collectively the "Work"). NMED shall install and maintain the Equipment in only the locations and manner that Walgreens has approved. Licensee, prior to taking any action which deviates or is different from the Work described in Exhibit "A" shall submit its plans therefore to Jeff Groncki of Walgreens' Facilities Department for his further review and approval or disapproval, which may be conditioned or denied as Walgreens shall determine in its good faith business judgment. Any approval for Work must be given expressly and in writing and requests therefore, including appropriate supporting documentation, shall be submitted to Jeff Groncki at jeff.groncki@walgreens.com. Any plans so approved by Jeff Groncki on behalf of Walgreens hereunder, shall be hereinafter called the "Plans." Once approved, the Work and all Equipment shall be performed and installed in full compliance with the approved Plans.

2. NMED shall be fully responsible for maintaining the Equipment and for removing the Equipment upon completion of the Work or when requested to do so by Walgreens. Upon such removal of the Equipment, NMED shall, at its sole cost and expense, restore the affected portions of the Property to the condition prior to the commencement of the Work.

Albuquerque, NM #15033

3. Licensee shall be responsible for any damage done to the Property or any improvements or facilities from time to time constructed thereon resulting in any manner from the performance of the Work and/or its entry or access onto the Property by Licensee, Licensee's contractors, its or their respective employees, representatives, agents or subcontractors, or any other parties directly or indirectly employed by or acting at the direction or on behalf of any of the foregoing or for whose acts any of the foregoing may be liable (collectively "Licensee's Representatives"). Licensee shall promptly repair to Walgreens' commercially reasonable satisfaction all damage to the Property (including all improvements or facilities from time to time constructed thereon) caused by Licensee and/or Licensee's Representatives.

4. (a) Licensee shall obtain at its sole cost and expense all governmental permits and authorizations of whatever nature required by any and all governmental agencies for Licensee's Work at the Property. While on the Property, Licensee shall comply and shall cause all Licensees' Representatives on the Property to comply with all applicable governmental laws and regulations including, without limitation, applicable Environmental Law (defined below). All persons who enter upon the Property pursuant to this License do so at their own risk, provided Walgreens shall notify Licensee of any known hazardous conditions on the Property.

(b) The term "Hazardous Substance" shall mean any hazardous or toxic chemical, waste, byproduct, pollutant, contaminant, compound, product or substance, including, without limitation, asbestos, polychlorinated biphenyls, petroleum (including crude oil or any fraction or by-product thereof), underground storage tanks, and any material the exposure to, or manufacture, possession, presence, use, generation, storage, transportation, treatment, release, disposal, abatement, cleanup, removal, remediation or handling of which is prohibited, controlled or regulated by any Environmental Law.

(c) The term "Environmental Law" shall mean any federal, state, regional, county or local governmental statute, law, regulation, ordinance, order or code or any consent decree, judgment, permit, license, code, covenant, deed restriction, common law, or other requirement presently in effect or hereafter created, issued or adopted, pertaining to protection of the environment, health or safety of persons, natural resources, conservation, wildlife, waste management, and pollution (including, without limitation, regulation of releases and disposals to air, land, water and ground water), including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U.S.C. 9601 et seq., Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 and Solid and Hazardous Waste Amendments of 1984, 42 U.S.C. 6901 et seq., Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, 33 U.S.C. 1251 et seq., Clean Air Act of 1966, as amended, 42 U.S.C. 7401 et seq., Toxic Substances Control Act of 1976, 15 U.S.C. 2601 et seq., Occupational Safety and Health Act of 1970, as amended, 29 U.S.C. 651 et seq., Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11001 et seq., National Environmental Policy Act of

1975, 42 U.S.C. 300(f) et seq., and all amendments as well as any similar state or local statute or code and replacements of any of the same and rules, regulations, guidance documents and publications promulgated thereunder.

5. Licensee shall not suffer or permit to be enforced against the Property, or any part thereof, any mechanics', materialmen's, contractors' or subcontractors' liens or any claim for damage arising from any work performed by Licensee or Licensee's Representatives, and Licensee shall pay or cause to be paid all of said liens, claims or demands before any action is brought to enforce the same against the Property. Without limitation of Walgreens' rights and remedies, should Licensee fail within ten (10) days of a written request from Walgreens to pay and discharge any lien or claim arising out of the Work or access onto the Property, then Walgreens may, at its option, pay any such lien or satisfy any judgment thereon, and all costs, expenses and other sums incurred by Walgreens in doing so (including but not limited to reasonable attorneys' fees) shall be paid to Walgreens by Licensee upon written demand, together with interest thereon at ten percent (10%) per annum.

6. Licensee and Licensee's Representatives shall, in performing the Work and entering the Property, comply with the following requirements: (a) the same shall not interfere with Walgreens' use and operations at the Property; (b) Walgreens' store manager shall be provided reasonable advance written notice prior to any entry onto the property pursuant to this License Agreement (other than for routine, nondestructive readings taken from a monitoring well); (c) Walgreens' requests to Licensee from time to time, regarding the Work and the performance thereof, so as to minimize or avoid any disturbance that may result from the timing, manner or duration thereof, shall be promptly complied with by Licensee and Licensee's Representatives; (d) in no event (except in an emergency) shall access to the Property during the last week of October, or the months of November and December of any year occur, or during any two week period that may from time to time be required by notice to Licensee from Walgreens, to accommodate Walgreens' construction, use or business on or at the Property; and (e) other than the Equipment, no other vehicles or equipment shall be placed at or kept on the Property without Walgreens' express written permission in each instance.

7. Prior to and at all times after initially entering upon the Property for any purpose, Licensee shall at its sole expense maintain a policy or policies of comprehensive general liability insurance with respect to its operations of or on behalf of Licensee on or about the Property, including but not limited to personal injury, blanket contractual, broad form property damage and liability coverage, for not less than two million dollars ($2,000,000.00), combined single limit bodily injury, death and property damage liability per occurrence, together with employer's liability, with a Waiver of Subrogation endorsement by the insurance carrier with respect to Walgreens. Licensee's policy of insurance required above shall be primary and shall name Walgreens as an additional insured, and any other insurance carried by Walgreens shall be noncontributing.

8. Licensee hereby indemnifies, defends and holds Walgreens, its successors or assigns, harmless from and against any claim, loss, liability, action, damage, cost, injury, fine or expense, and including but not limited to reasonable attorneys fees, with respect to the Work, the operation of the Equipment on the Property, use or misuse of the Property by Licensee or any of Licensee's Representatives (a) to the extent resulting from any negligent act or omission or intentional misconduct of Licensee or any of Licensee's Representatives or any actions of Licensee or any of Licensee's Representatives for which Licensee is strictly liable under applicable law, which may include claims and losses relating to bodily injury, property damage, accident, fire, loss, theft or other casualty to or involving Licensee or any of Licensee's Representatives while on the Property; or (b) resulting from any breach by Licensee of its obligations under this License Agreement; or (c) resulting from License's statutory violation(s). Licensee expressly waives all claims and demands of Licensee against Walgreens for any loss, damage, injury, accident, fire, or other casualty, liability, claims cost, fine or expense to Licensee's equipment, resulting from Licensee's work (or entry onto the Property) hereunder. The obligations of Licensee to indemnify and hold harmless Walgreens shall survive the expiration of this License Agreement.

9. This License Agreement may not be assigned by Licensee, without the written consent of Walgreens. Subject to the foregoing sentence, this License Agreement shall be binding upon and inure to the benefit of the successors and assigns of the parties hereto. Any assignment shall not relieve Licensee from its obligations under this License Agreement unless agreed to in writing by Walgreens. If Walgreens incurs any expense or cost, including but not limited to attorneys' fees, in connection with any action or proceeding instituted by Walgreens arising from or relating to this License Agreement, Walgreens shall be entitled to recover its expenses and costs (including but not limited to its reasonable attorneys fees) from Licensee in such action or proceeding in the event Walgreens is the prevailing party.

10. All test results from the Work or related to the Property shall be promptly provided to Walgreens by Licensee without charge. Walgreens reserves its rights at law or equity in the event that such test results disclose that the Property does not comply with applicable environmental laws or in the event that such test results disclose that further work or remediation is required at the Property. The persons signing this letter on behalf of Licensee warrant and represent that they are duly authorized to so execute this letter on behalf of Licensee and that this letter as so executed by such person is binding and enforceable against Licensee according to its terms.

11. Notices or other communication hereunder shall be in writing and shall be sent certified or registered mail, return receipt requested, or by other national overnight courier company, or personal delivery. Notice shall be deemed given upon receipt or refusal to accept delivery. Each party may change from time to time their respective address for notice hereunder by like notice to the other party. The notice addresses of the parties are as follows:

Walgreens:	Walgreen Co. 104 Wilmot Road, MS #1420 Deerfield, Illinois 60015 Attn.: Real Estate Law Department
With a copy to:	the Property Attn.: Store Manager
Licensee:	AECOM Corporation Attn: Infrastructure and Environment One Park Square 6501 Americas Parkway NE, Suite 900 Albuquerque, NM 87110

12. The laws of the State in which the Property are located shall govern the interpretation, validity, performance, and enforcement of this License Agreement. Each of the signatories to this License Agreement represents and warrants that he/she has all requisite authority to sign on behalf of, and legally bind, the entity for which he/she is signing.

13. It is intended that each of the covenants, conditions, restrictions, rights and obligations set forth herein shall run with the land and create equitable servitudes in favor of the real property benefited thereby, shall bind every person having any fee, leasehold or other interest therein and shall inure to the benefit of the respective parties and their successors, assigns, heirs, and personal representatives.

14. Walgreens' consent shall not be deemed granted unless and until this letter is so signed and returned (along with the certificate of insurance naming Walgreen Co. as an additional insured referenced in Paragraph 7 above).

15. Each of the signatories to this License Agreement represents and warrants that he/she has all requisite authority to sign on behalf of, and legally bind, the entity for which he/she is signing.

IN WITNESS WHEREOF, the parties hereto have executed this License Agreement as of the date first written above.

WALGREEN CO.

CSK By: _____
Name: Michael Cecostong
Title: Director & Managing Counsel

AECOM TECHNICAL SERVICES, INC.

By: _____
Name: Pascal Hinnen
Title: VP

EXHIBIT A

Locate, check condition of, inventory, repair, plug, abandon, and survey ground water monitoring wells as necessary

Perform periodic ground water monitoring activities to include measuring liquid levels in, and retrieving and analyzing ground water samples from, ground water monitoring wells

Install additional soil borings and ground water monitoring wells as necessary

Appendix B. Groundwater Sampling Procedures

1.0 PURPOSE AND SCOPE

The purpose and scope of this Standard Operating Procedure (SOP) is to describe the equipment and methods used to accurately determine static water level and total depth in a groundwater monitoring well, pumping well, or piezometer.

2.0 RESPONSIBILITIES AND QUALIFICATIONS

The Project Manager has the overall responsibility for implementing this SOP. The Project Manager will be responsible for assigning staff to implement this SOP and for ensuring that the procedures are followed by all personnel.

All personnel performing this procedure are required to have the appropriate health and safety training as described in either the project-specific Health and Safety Plan or the Safe Work Plan, as applicable. In addition, all personnel are required to have a complete understanding of the procedures described within this SOP and receive specific training to these procedures, if necessary.

All project staff are responsible for reporting deviations from this SOP to the Project Manager.

3.0 RELATED STANDARD OPERATING PROCEDURES

This procedure is intended to be used with the following SOPs:

- SOP-1 – Use and Maintenance of Field Log Books
- SOP-20 – Decontamination

4.0 EQUIPMENT

The equipment and supplies that may be necessary to measure water levels include:

- Water level indicator with an audible alarm and a cable marked in 0.01-foot increments. The point on the probe that triggers the alarm corresponds to the zero point.
- If free-phase product is present, an interface probe capable of distinguishing between product and water
- Decontamination supplies
- Field logbook or field data sheets.

5.0 PROCEDURES

This procedure requires the use of an electronic water level device that employs a battery-powered probe assembly attached to a cable marked in 0.01-foot increments. When the probe makes contact with the water surface, a circuit is closed and energy is transmitted through the cable to sound an audible alarm. This equipment will have a sensitivity adjustment switch that

enables the operator to distinguish between actual and false readings. The manufacturer's operating manual should be consulted for instructions on use of the sensitivity adjustment.

If there is the potential for free-phase product to be present on the surface of the water table in a well, then an oil-water interface probe will be used to collect water level measurements. Interface probes are used in the same manner as a water level indicator. The difference is that the interface probes have two different audible signals to differentiate between water and oil. If a layer of free-phase product is present, the probe will emit a different signal than for water. Most probes emit an intermittent beep when product is encountered, as opposed to a constant tone for water. The alarm codes for individual probes are marked on the reel casing.

The measurements must be taken at an established reference point, generally from the top of the well casing at the surveyor's mark. The mark should be permanent, such as a notch or mark on the top of the casing. If the surveyor's point is not marked at the time of water level measurement, the north side of the casing should be used and marked.

5.1 Calibration

The water level indicator or interface probe should be calibrated in accordance with the manufacturer's procedure prior to use.

1. Place the end of the probe in a bucket of water to ensure that the audible alarm is in working condition and responds when the electrical contacts encounter water.

2. Verify the marked length units on the probe line for accuracy by comparing to a standard steel tape measure. If there is any noted discrepancy between the water level indicator and the measuring tape, the difference in length will be noted on the field log and identified on the water level indicator. All subsequent water level measurements will be corrected as necessary.

5.2 Static Water Level Measurement

The static water level will be measured each time a well is sampled. This must be done before any fluids are withdrawn and before any purging or sampling equipment enters a well.

1. Before mobilization, obtain previous water level data, a description of the measuring point for water level measurements for all wells, and the appropriate well keys (if the wells are locked).

2. Test the water level probe to ensure that it is working properly by pushing the circuit test button or as specified in the instrument manufacturer's instructions.

3. Decontaminate the water level indicator probe according to SOP-20, *Decontamination*, before the first measurement, between wells, and after measuring the water level in the last well.

4. Unlock and open the well. Follow the health and safety procedures specified in the project health and safety plan or safe work plan, as applicable. If necessary, let the well vent any gases that may be present in the well casing. Also, this allows the water to equilibrate to barometric changes.

5. After opening the well cover, locate the water level measuring point. If a measuring point is not marked, the measurement should be taken from the north side of the well casing, if possible.

6. With the water level indicator switched on, slowly lower the probe until it contacts the water surface as indicated by the audible alarm.

7. Raise the probe out of the water until the alarm turns off. Three or more measurements will be taken at each well until two measurements agree to within +/- 0.01 feet.

8. Record the reading on the cable at the established reference point to the nearest 0.01 foot in the field logbook and/or on a field data sheet. In addition, document the measuring point location. Compare the most recent measurement with past measurements to verify that the new measurement is reasonable before leaving the well. If the measurement does not seem reasonable, repeat the water level measurement.

9. If the water level indicator fails to activate and is operating properly, lower the water level probe to the bottom of the well to ensure that the well is dry. Document that the well is dry, measure the total depth in accordance with the following method.

5.3 Total Depth Measurement

Depending on the type of instrument used, the total depth measurement may need to be adjusted for the offset between the bottom of the probe and the water level sensor. Some instruments have the sensor at the bottom of the probe so the depth reading is accurate without an adjustment. However, the water indicator sensor on some probes is not located at the bottom of the probe. To get a true total depth reading, the distance from the water indicator sensors to the bottom of the probe housing must be added to the depth reading.

1. Slowly lower the water level indicator, with weight attached if necessary, until the cable goes slack.

2. Raise and lower the probe until the precise location of the bottom is determined.

3. Account for the length of the probe tip in determining the total depth.

4. Record the reading on the cable at the established reference point to the nearest 0.01 foot.

If it is not possible to measure the depth of a well in which pumping equipment is installed, then the as-built well construction diagram will provide the total depth.

5.4 Interface Probe Measurement

1. Before mobilization, obtain previous water level data, a description of the measuring point for water level measurements for all wells, and the appropriate well keys (if the wells are locked).

2. Test the interface probe to ensure that it is working properly by pushing the circuit test button or as specified in the instrument manufacturer's instructions.

3. Decontaminate the interface probe according to SOP-20, *Decontamination,* before the first measurement, between wells, and after measuring the water level is the last well.

4. Unlock and open the well. Follow the health and safety procedures specified in the project health and safety plan or safe work plan, as applicable. If necessary, let the well vent any gases that may be present in the well casing. Also, this allows the water to equilibrate to barometric changes.

5. After opening the well cover, locate the water level measuring point. If a measuring point is not marked, the measurement should be taken from the north side of the well casing, if possible.

6. With the interface probe indicator switched on, slowly lower the probe until it contacts the liquid surface as indicated by the audible alarm.

7. If product is encountered, continue to raise and lower the probe until a precise level (within 0.01 foot) is determined.

8. Record the measurement in the field logbook and/or on the field data sheet to the nearest 0.01 foot and identify it as a product measurement.

9. Lower the interface probe until the water interface is encountered. Repeat the level measurement process a minimum of three or more measurements until two measurements agree to within +/- 0.01 feet.

> **NOTE: CARE SHOULD BE TAKEN DURING THE MEASUREMENT PROCESS TO MINIMIZE DISTURBANCE OF THE PRODUCT/WATER INTERFACE.**

10. Record the measurement in the field logbook and/or on the field data sheet to the nearest 0.01 foot and identify it as the water level measurement. In addition, document the measuring point location. Compare the most recent measurements with past measurements to verify that the new measurements are reasonable before leaving the well. If the product and/or water level measurements do not seem reasonable, repeat both measurements.

6.0 RECORDS

All field notes for water level, product level (if applicable), and well depth measurements will be recorded in the field logbook and/or the field data sheets in accordance with SOP-1, *Use and Maintenance of Field Log Books*. Entries shall be legible, signed or initialed, and dated. Documented information shall include, as appropriate:

- Personnel who performed the measurement
- Date of measurement
- Time of measurement
- Well number
- Depth to water from the measuring point
- Description of the measuring point location for the well
- Water-level or interface probe manufacturer and serial/identification number
- Calculations performed (if any)
- Other observations (i.e., well condition, evidence of tampering, artesian conditions).

7.0 REFERENCES

Driscoll, F.G., 1986. *Groundwater and Wells*, 2nd Edition, Johnson Division, St. Paul, MN, pp. 1089.

Thornhill, J.T., 1989. *Accuracy of Depth to Ground Water Measurements*, from U.S. Environmental Protection Agency (USEPA) Superfund Ground Water Issue, USEPA/540/4-89/002.

U.S. Department of the Interior, 1981. *Groundwater Manual, A Water Resource Technical Publication*, Water and Power Resources Services, U.S. Government Printing Office, Denver, CO, pp. 480.

1.0 PURPOSE AND SCOPE

The purpose and scope of this Standard Operating Procedure (SOP) is to describe the equipment and methods used for collecting groundwater samples in the field using the low-flow purge, the conventional purge, and the passive diffusion sampler methods.

2.0 RESPONSIBILITIES AND QUALIFICATIONS

The Project Manager has the overall responsibility for implementing this SOP. The Project Manager will be responsible for assigning staff to implement this SOP and for ensuring that the procedures are followed by all personnel.

All personnel performing this procedure are required to have the appropriate health and safety training as described in either the project-specific Health and Safety Plan or the Safe Work Plan, as applicable. In addition, all personnel are required to have a complete understanding of the procedures described within this SOP and receive specific training to these procedures, if necessary.

All project staff are responsible for reporting deviations from this SOP to the Project Manager.

3.0 RELATED STANDARD OPERATING PROCEDURES

This procedure is intended to be used with the following SOPs:

- SOP-1 – Use and Maintenance of Field Log Books
- SOP-13 – Static Water Level and Total Depth Measurement
- SOP-16 – Water Quality Measurements Using a Multiple Parameter Water Quality Meter
- SOP-20 – Decontamination
- SOP-26 – Chain-of-Custody
- SOP-33 – Organic Vapor Measurements
- SOP-49 – IDW Management

4.0 EQUIPMENT

The equipment and supplies that may be necessary to collect groundwater samples include:

<u>Major Equipment Items</u>

- Variable-rate, submersible pump and hose assembly with control limit, electrical generator (if required) and extension cord, and air compressor or other air supply (if required)
- Gasoline and oil (for generator, if used)
- Teflon or Teflon-line polyethylene tubing
- Plastic sheeting

- Drums or other large container for capturing and storing purge water
- Weighted tape measure

Equipment Support Items

- Drum liners
- Trash bags
- Decontamination tub
- Low-phosphate detergent (e.g., Liquinox)
- Gloves (nitrile rubber)
- Graduated five-gallon buckets and/or graduated cylinder for measuring flow rate and volumes
- Folding table
- Folding chairs
- Paper towels
- Calculator
- Digital watch with stopwatch function.

Sampling Supplies

- Well logs, written description of wells including identification numbers, maps, well locations, elevations, well construction details, and (if available) records of previous development and/or purging and sampling
- Well keys
- Sample containers and applicable preservative
- Passive Diffusion Bags and related equipment (if required for VOC samples)
- pH testing paper.
- Chain-of-custody forms
- Sample labels
- Field data forms
- Cooler with ice for sample preservation
- Ziploc bags
- Field logbook
- Pen and waterproof permanent marker.

Monitoring Equipment

- Electronic water level indicator and, when necessary, oil/water interface probe
- Water quality sampling field instrumentation (e.g., pH, temperature, specific conductance [conductivity], turbidity, dissolved oxygen, oxidation/reduction potential probes)
- Photoionization detector or flame ionization detector if sampling wells with volatile organic contamination

Health and Safety Items

- First aid kit and emergency eye-wash kit
- Fire extinguisher
- Material Safety Data Sheets
- Emergency information packet, including route map to hospital and phone contacts
- Field radio or cell phone
- Personal protective equipment as specified in the project-specific Health and Safety Plan or Safe Work Plan, as applicable.

5.0 PROCEDURES

5.1 Decontamination

Before purging or sampling, all pumps and hoses, water level measurement devices, and any other sampling equipment that may come in contact with the sample will be decontaminated in accordance with SOP-20, *Decontamination*. If new dedicated equipment is used, it should be thoroughly decontaminated and rinsed with distilled water before placement in the well. While decontamination of the pump/hose assembly may generally be performed at a central decontamination area, mobile decontamination supplies will be available so that accessory equipment (e.g., electronic water level indicators) can be decontaminated in the field.

Each piece of purging or sampling equipment will be decontaminated prior to and in between sampling operations and wells. Depending on site conditions, the decontamination solutions may be replaced with clean solutions between wells. Decontamination solutions will be handled and disposed of in accordance with SOP-49, *IDW Management*.

5.2 Well Monitoring

Electronic equipment used during purging and sampling may include a photoionization detector, flame ionization detector, multi-gas meter, water level indicator, oil/water interface probe, and water quality measurement devices for temperature, pH, conductivity, turbidity, dissolved

oxygen, and oxidation/reduction potential. Before going into the field, the Field Team Leader will verify that the instruments are operating properly. The instruments will be calibrated in accordance with the requirements outlined in the corresponding procedures.

5.3 Well Purging

The purpose of well purging is to remove stagnant from the well and obtain a representative water sample from the geologic formation being sampled while minimizing disturbance of the water column during sample collection.

5.3.1 Low-Flow Purge Methodology

1. Verify calibration checks on field monitoring equipment have been performed.

2. Inspect the well and surrounding area for security, damage, and evidence of tampering.

3. Establish the exclusion zone around the work area, using traffic cones and caution tape where necessary.

4. Don personal protective equipment as specified in the project-specific Health and Safety Plan or Safe Work Plan, as applicable.

5. If volatile organic compound (VOC) contamination is present or suspected, determine the ambient VOC background levels in the immediate vicinity of the well with an appropriate instrument.

6. Remove the well cap and immediately measure VOCs at the rim of the well and record the reading in the field logbook and/or field data sheet.

7. Locate the well survey reference point. This is usually an indelible mark or V-notch cut in the top of the well casing. If this point is missing, make one on the north side of the well casing.

8. Measure the static water level in the well in accordance with SOP-13, *Static Water Level and Total Depth Measurement.*

9. If a high concentration or organic vapors are detected in the well, use an oil/water interface probe to measure both the water level and level of the immiscible phase light non-aqueous phase liquids or dense non-aqueous phase liquids in accordance with SOP-13, *Static Water Level and Total Depth Measurement.*

10. Measure the total depth of the well in accordance with SOP-13, *Static Water Level and Total Depth Measurement*.

11. Containerize wastewater until analytical data are available to determine the proper disposal process in accordance with SOP-49, *IDW Management*.

12. Install the pump to the depth prescribed in the sampling documentation. This depth should correspond to the middle of the screened interval, five feet below the water table or in instance where the well screen is submerged, 5 feet below the top of the screen.

13. Reinsert the water level (or oil/water interface probe, as appropriate) to monitor water levels during purging.

14. Start the pump at a low flow rate until surface discharge occurs. Check the water level, if no drawdown occurs, gradually increase the pump rate until the flow is optimized with minimal drawdown. The maximum allowable drawdown is 0.3 feet.

15. Connect the pump discharge tubing directly to the flow-through-cell of the multi-parameter meter.

16. Using a stopwatch and appropriate volume measuring device (e.g., graduated cylinder), monitor and record water level and pumping rate every three to five minutes (or as appropriate) during purging.

17. During well purging, monitor selected indicator field parameters (e.g., turbidity, temperature, conductivity, pH, oxidation-reduction potential, dissolved oxygen) every three to five minutes in accordance with SOP-16, *Water Quality Measurements Using a Multiple Parameter Water Quality Meter*..

18. When the field parameters have stabilized, disconnect the flow cell from the water path before collecting samples. Water samples for laboratory analyses must be collected before the water has passed through the cell to prevent cross-contamination or chemistry changes. Stabilization is achieved when three consecutive readings show the following:

    - Temperature - ± 1 degree Celsius
    - pH - ± 0.1 pH unit
    - Turbidity - ≤ 10 NTU or ± 10%
    - Conductivity - ± 5%
    - Dissolved Oxygen - ± 10%
    - Oxidation-Reduction Potential - ± 10 millivolts

5.3.2 Total Well Volume Purge Methodology

If water level drawdown greater than 0.3 feet occurs at a purge rate of 0.1 L/min or less, or if it is deemed necessary, the total well volume purge methodology will be used.

1. Verify calibration checks on field monitoring equipment have been performed.

2. Inspect the well and surrounding area for security, damage, and evidence of tampering.

3. Establish the exclusion zone around the work area, using traffic cones and caution tape where necessary.

4. Don personal protective equipment as specified in the project-specific Health and Safety Plan or Safe Work Plan, as applicable.

5. If VOC contamination is present or suspected, determine the ambient VOC background levels in the immediate vicinity of the well with an appropriate instrument.

6. Remove the well cap and immediately measure VOCs at the rim of the well and record the reading in the field logbook and/or field data sheet.

7. Locate the well survey reference point. This is usually an indelible mark or V-notch cut in the top of the well casing. If this point is missing, make one on the north side of the well casing.

8. Measure the static water level in the well in accordance with SOP-13, *Static Water Level and Total Depth Measurement.*

9. If a high concentration or organic vapors are detected in the well, use an oil/water interface probe to measure both the water level and level of the immiscible phase light non-aqueous phase liquids or dense non-aqueous phase liquids in accordance with SOP-13, *Static Water Level and Total Depth Measurement.*

10. Measure the total depth of the well in accordance with SOP-13, *Static Water Level and Total Depth Measurement*.

11. Containerize wastewater until analytical data are available to determine the proper disposal process in accordance with SOP-49, *IDW Management*.

12. Install the pump to the depth prescribed in the sampling documentation. This depth should correspond to the middle of the screened interval, five feet below the water table or in instance where the well screen is submerged, 5 feet below the top of the screen.

13. Reinsert the water level (or oil/water interface probe, as appropriate) to monitor water levels during purging.

14. Start the pump at a low flow rate until surface discharge occurs. Check the water level, if no drawdown occurs, gradually increase the pump rate until the flow is optimized with minimal drawdown. The pumping rate should never exceed 2 L/min.

15. Connect the pump discharge tubing directly to the flow-through-cell of the multi-parameter meter.

16. Using a stopwatch and appropriate volume measuring device (e.g., graduated cylinder), monitor and record water level and pumping rate every three to five minutes (or as appropriate) during purging.

17. During well purging, monitor selected indicator field parameters (e.g., turbidity, temperature, conductivity, pH, oxidation-reduction potential, dissolved oxygen) every three to five minutes in accordance with SOP-16, *Water Quality Measurements Using a Multiple Parameter Water Quality Meter*.

18. At a minimum, three total volumes must be purged for this method if the well is not purged dry with a pumping rate less than 2 L/min. If the well is purged dry with a pumping rate less than 2 L/min, then the sample will be collected after a sufficient volume of water has recharged the well regardless of total volume purges and field parameter stabilization. When purging by this methodology, if parameters have not stabilized after six well casing volumes, then purging will cease and samples collected.

    The well volume can be calculated in gallons using the following equation:

    Well Volume V (in gallons) = H x F

    Where:

    V = one well volume

    H = the difference between the depth of the well and depth of water

    F = factor for volume of one foot section of casing (gallons) as below:

Diameter of Casing (inches)	F Factor (gallons)
1.5	0.09
2.0	0.16
3.0	0.37
4.0	0.65
6.0	1.47

    Alternatively:

    $F = H \times (D/2)^2 \times 7.48\ gal/ft^3$

    Where:

    D = the inside diameter of the well casing (ft)

19. When the field parameters have stabilized, disconnect the flow cell from the water path before collecting samples. Water samples for laboratory analyses must be collected before

the water has passed through the cell to prevent cross-contamination or chemistry changes. Stabilization is achieved when three consecutive readings show the following:

- Temperature - ± 1 degree Celsius
- pH - ± 0.1 pH unit
- Turbidity - ≤ 10 NTU or ± 10%
- Conductivity - ± 5%
- Dissolved Oxygen - ± 10%
- Oxidation-Reduction Potential - ± 10 millivolts

5.4 Sample Collection

Regardless of the purging methodology, samples for laboratory analyses will be collected immediately following purging. For wells that were purged dry, samples will be collected as soon as possible after a sufficient volume of groundwater is available in the well. The following sampling procedure will be used at each well.

1. Immediately following purging, the pump will be used to collect the groundwater sample. The pump should not be removed between purging and sampling, unless a peristaltic pump is used.

2. Fill out identification labels for samples bottles for each well.

3. The individual sample bottles should be filled in the order given below:

    - Volatile organic compounds
    - Semi-volatile organic compounds
    - Other organic parameters
    - Metals (inorganics)
    - Anions
    - Other parameters
    - Field test parameters (e.g., pH, conductivity, and temperature).

4. The VOC vials should be completely filled so the water forms a convex meniscus at the top, then capped so that no air space exists in the vial. Turn the vial over and tap it to check for bubbles in the vial. If air bubbles are observed in the sample vial, discard the vial and collect another sample. To verify the VOC sample pH, fill an extra vial during

sample collection, ensuring that it is not overfilled, then dip a pH strip into the sample vial to check that the sample is at or below the maximum pH allowed. This vial will be disposed of as investigation-derived waste.

5. For all other laboratory samples, fill containers until almost full. Samples will be preserved and managed as detailed in the sampling documentation. When collecting preserved samples, the pH should be periodically checked. For non-VOC samples, pour a small amount of the preserved sample directly from the sample container onto the pH strip rather than dipping the strip into the container which can contaminate the sample.

6. Record the sampling information in the field logbook and/or the field data sheets.

7. After samples have been collected, immediately place the samples in an ice-filled cooler for transport to the analytical laboratory in accordance with SOP-23, *Sample Handling, Shipping and Documentation*.

8. Complete all chain-of-custody information in accordance with SOP-26, *Chain-of-Custody*.

9. Remove the pump and equipment from the well, replace the well cap, and secure the lock.

5.5 Passive Diffusion Bags

Sampling for VOCs may be accomplished through the use of passive diffusion bags. A passive diffusion bag is made of low-density polyethylene lay-flat tubing that is closed at both ends. Tubes can be 18 to 24 inches long and from 1 to 1.5 inches in diameter.

1. Prior to deployment to the field, fill the passive diffusion bags with laboratory-grade deionized water using a funnel. Fill the sampler until water rises and stands at least two inches up the funnel to expand the sampler to its maximum capacity. Gently squeeze and add more water to expand the membrane and remove air pockets. Repeat as needed until completely full.

2. Insert the plug provided with the sampler firmly into the sampler until the rim of the plug is as close to the nozzle as possible.

3. Inspect the well and surrounding area for security, damage, and evidence of tampering.

4. Establish the exclusion zone around the work area, using traffic cones and caution tape where necessary.

5. Don personal protective equipment as specified in the project-specific Health and Safety Plan or Safe Work Plan, as applicable.

6. Determine the ambient VOC background levels in the immediate vicinity of the well with an appropriate instrument.

7. Remove the well cap and immediately measure VOCs at the rim of the well and record the reading in the field logbook and/or field data sheet.

8. Locate the well survey reference point. This is usually an indelible mark or V-notch cut in the top of the well casing. If this point is missing, make one on the north side of the well casing.

9. Measure the static water level in the well in accordance with SOP-13, *Static Water Level and Total Depth Measurement.*

10. If a high concentration or organic vapors are detected in the well, use an oil/water interface probe to measure both the water level and level of the immiscible phase light non-aqueous phase liquids or dense non-aqueous phase liquids in accordance with SOP-13, *Static Water Level and Total Depth Measurement.*

11. Measure the total depth of the well in accordance with SOP-13, *Static Water Level and Total Depth Measurement*.

12. Attach a weight to the bottom of tether line. For shallow wells (less than 150 ft depth), use a 8 ounce stainless steel weight. For deeper wells, or if deploying multiple samplers in a single well, use a 20 ounce stainless steel weight.

13. Attach the sampler to the tether line.

14. Lower the tether with the sampler(s) attached into the well. Locate the sampler(s) below the water surface at the prescribed depth(s) in the screen flow zone of the well.

15. Attach the top of the tether line to the well cap or other secure location at the top of the well.

16. Leave the sampler in the well for a sufficient period of time to allow for contaminant concentrations in the sampler to come into equilibrium with the contaminant concentrations in the groundwater (a three-week deployment is recommended).

17. Retrieve the sampler from the well.

18. Upon retrieval, discharge the sample immediately into the sample containers to avoid loss of VOCs. Select a point on the sampler near the handle/bottom of the sampler. Press one end of the provided discharge tube firmly into the polyethylene membrane at a downward angle until it pierces the membrane. Discharge a small amount to waste to purge the discharge tube prior to filling the sample vials.

19. The VOC vials should be completely filled so the water forms a convex meniscus at the top, then capped so that no air space exists in the vial. Turn the vial over and tap it to check for bubbles in the vial. If air bubbles are observed in the sample vial, discard the vial and collect another sample. To verify the VOC sample pH, fill an extra vial during

sample collection, ensuring that it is not overfilled, then dip a pH strip into the sample vial to check that the sample is at or below the maximum pH allowed. This vial will be disposed of as investigation-derived waste.

20. Record the sampling information in the field logbook and/or the field data sheets.

21. After samples have been collected, immediately place the sample containers in an ice-filled cooler for transport to the analytical laboratory in accordance with SOP-23, *Sample Handling, Shipping and Documentation*.

22. Complete all chain-of-custody information in accordance with SOP-26, *Chain-of-Custody*.

23. Remove any remaining equipment from the well, replace the well cap, and secure the lock.

6.0 RECORDS

All field notes for groundwater purging and sampling will be recorded in the field logbook and/or the field data sheets in accordance with SOP-1, *Use and Maintenance of Field Log Books*. Entries shall be legible, signed or initialed, and dated. Documented information shall include, as appropriate:

- Personnel who performed the sampling
- Date of sample collection
- Time of sample collection
- Well number
- Purge volume calculations performed
- Weather conditions
- Condition of the well
- Decontamination information
- Initial and final static water level
- Equipment calibration information
- Method of purging
- Volume of purge water
- Purge start and stop times
- Pumping rate, if applicable
- Field parameter measurements during purging
- Method of sample collection
- Sample identification numbers
- Photo documentation, if applicable

- QA/QC samples collected
- Other observations.

7.0 REFERENCES

Driscoll, F.G., 1986. *Groundwater and Wells*, 2nd Edition, Johnson Division, St. Paul, MN, pp. 1089.

U.S. EPA, 1996. *Ground Water Issue, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, EPA/540/S-95/504, April.

U.S. Department of the Interior, 1981. *Groundwater Manual, A Water Resource Technical Publication*, Water and Power Resources Services, U.S. Government Printing Office, Denver, CO, pp. 480.

1.0 PURPOSE

The purpose of this Standard Operating Procedure is to establish guidelines for the use of a multiple parameter water quality meter such as the Horiba or U-22 or equivalent. Multiple parameter meters measuring water quality parameters including pH, temperature, salinity, turbidity, dissolved oxygen (DO), oxidation reduction potential (ORP), and specific conductance (conductivity) in water during well purging, well development, and surface water sampling for chemical analysis.

2.0 SCOPE

This Standard Operating Procedure applies to all personnel who measure water quality parameters using a multiple parameter water quality meter.

3.0 METHOD

Water quality parameters such as pH, temperature, turbidity, DO, conductivity, ORP, and salinity are collected to determine conditions in surface or groundwater at a given location. A series of such determinations can be used to evaluate a variety of situations, from the performance of a groundwater treatment system to the spread of contaminant plume in groundwater. A multiple parameter water quality meter measures each of these parameters digitally. The pH is a primary parameter measured in the field to determine hydrogen-ion activity. It is measured using a glass electrode in combination with a reference potential. Temperature is measured because many water quality parameters vary with temperature. The solubility of oxygen is temperature dependent, as are all electrochemically determined water quality parameters (pH, conductivity).

Turbidity serves as a measure of suspended solids in a water sample. Since these suspended solids might result in elevated apparent concentrations of some contaminants (especially metals) to above levels of concern, the measurement of turbidity is a critical determination before collection of groundwater samples. Turbidity above acceptable levels will typically result in additional efforts to reduce the turbidity of the well water before collecting samples, since samples will be collected unfiltered unless otherwise approved.

DO is an indicator of the oxygen-consuming and oxygen-providing process taking place. It is an indicator of the biochemical processes occurring in the water and is related to the ORP. The most common membrane electrode (ME) meters for determining the DO in water are dependent upon electrochemical reactions. Under steady-state conditions, the current or potential can be correlated with DO concentration. Interfacial dynamics at the ME/sample interface are a factor in probe response and a significant degree of interfacial turbulence is necessary to avoid a "stagnant layer" at the interface and resulting biased determinations. For acceptable precision to be obtained, flow over the DO membrane should be constant, as in the case of a flow-through cell used for groundwater sampling or a flowing stream for stream sampling.

Specific conductance is the ability of a volume of a solution to conduct an electrical current as compared to the same volume of pure water. Chemically pure water has a very low electrical

conductance, indicating that it is a good insulator. However, minute amounts of dissolved mineral matter (total dissolved solids, TDS) in water increase the electrical conductance of water. In dilute solutions, the specific conductance varies almost directly with the TDS content of the samples. Salinity of the sample is computed from conductivity data.

3.1 Materials and Equipment

Equipment that will be used to collect water quality measurements using a multiple parameter water quality meter includes, but is not limited to, the following items:

- Multiple parameter water quality meter with power supply;
- Calibration solutions, as specified by the manufacturer;
- Calibration log form and field logbook for recording calibration;
- Clean sample containers (glass, plastic);
- Distilled or deionized water in wash bottle; and
- Operating manual for the multiple parameter water quality meter.

3.2 Calibration

The multiple parameter water quality meter may be calibrated in the field by using calibration solutions supplied by a commercial laboratory supply house. The specific calibration procedures in the owner's manual for the multiple parameter water quality meter should be followed. Generally, the calibration procedure involves measuring the value of a specific parameter in a standard calibration solution of a known value. The meter is typically calibrated to read the known value to within the acceptance criteria. The instrument should be calibrated prior to each workday of use. The initial instrument response and the final (calibrated) response will be recorded on the calibration log, along with the date and time of calibration. Calibration will be performed in accordance with the manufacturers' instructions..

3.3 Taking Measurements

After the unit is calibrated, it is ready for use. To take measurements, turn the unit on and gently place the probe in the water sample. Typically, a select button can be pressed to toggle between the different parameters, if they are not all displayed on screen simultaneously.

Care should be exercised when handling the probes. The multiple parameter water quality meter should be lowered gently into the sample. The water quality meter should be allowed to stabilize for at least several seconds before collecting water quality parameter data. When conducting groundwater sampling, a flow-through cell should be used whenever possible to minimize wear and tear on the probes, eliminate the need for stabilization (since the electrode is constantly immersed in groundwater flowing over the probes), and improve the consistency of the readings. Multiple determinations as an indication of field precision should be conducted more frequently than every tenth reading if precision problems are apparent.

3.4 Storage

After using the water quality meter, thoroughly wash all probes with analyte free water. The turbidity sensor tube should be periodically washed out with a test tube brush and analyte free water, or according to the manufacturer's instructions. The conductivity guard should be periodically removed to brush away any dirt from the sensor unit. If storing the unit for a week or less, fill the calibration cup with tap water (*not distilled or deionized water, which can damage the probes*) and fit the cap over it. For long-term storage, follow the manufacturer's instructions.

3.5 Additional Considerations

Operators of field equipment should refer to the manufacturer's instructions for step-by-step calibration and usage guidelines. Additional considerations of a general nature include:

- The water quality meter must be checked for mechanical and electrical failures, weak batteries, and cracked or fouled electrodes before field activities.
- Perform calibration using the appropriate solutions as described in the manufacturer's instructions.
- Clean and rinse probes thoroughly using distilled or deionized water in a wash bottle between all samples and at the end of the day. Each time the electrodes are cleaned, they should be examined for damage.
- Some electrodes (e.g., pH and DO electrodes) must NOT be allowed to dry completely, as this may permanently alter the physical or electrochemical properties of the electrode surface.
- Note that oily samples are likely to result in fouling of the electrodes and more aggressive cleaning procedures (such as mild acid washing) will be required, as described in the manufacturer's instruction manual. After such cleaning, a calibration check must be performed; typically such cleaning will necessitate recalibration.

4.0 REFERENCES

American Society for Testing and Materials (ASTM). *Tests for Dissolved Oxygen in Water,* Annual Book of ASTM Standards; Part 31, "Water," Standard D888-92(A). Philadelphia, PA.

Instruction Manual, Horiba U-10 Water Quality Checker, Horiba Instruments, Inc.

USEPA, 1991. *Environmental Branch Standard Operating Procedures and Quality Assurance Manual*. EPA Region IV, Athens, GA.

USEPA, 1983. *Methods for Chemical Analyses of Water and Wastes.* Environmental Monitoring and Support Laboratory, Cincinnati, OH.

5.0 RECORDS

Documentation, including field survey measurements and QC measurements, will be recorded in the field log book in accordance with the project SAP and appropriate SOP. Personnel collecting field measurements are responsible for documenting sampling activities in the field logbook. The observations and data will be recorded with waterproof ink in a permanently bound weatherproof field logbook with consecutively numbered pages.

6.0 ATTACHMENTS

Not applicable.

Appendix C. Groundwater Field Sampling Forms

AECOM

6501 Americas Pkwy
Albuquerque, NM 87110
Tel: 505.855.7500
Fax: 505.855.7555

Groundwater Sample Field Data Form

Well Identification MW-8A

Page 1 of 1

Project Name:	Chevron Isleta	**Sampled By:**	ECH
Project Number:	24343393	**Sample ID:**	MW-8A
Location:	3401 Isleta Boulevard, Albuquerque, NM	**Sample Date:**	1/30/15
Date:	1/30/15	**Sample Time:**	1225

Equipment

Purging Method/Equipment	New bailer
Sampling Equipment	New bailer
Filtering Equipment	—

Field Parameters

Initial Water Temp. (C)	15.00
Initial pH:	7.40
Initial Conductance (mS/cm):	934
Reference Point	

Purging Information

Casing ID (in)	2	Length of Static Water Column (ft)	6.8
Unit Casing Volume (gal/ft)	0.16	Casing Water Volume (gal)	1.08
Depth to Water (ft below TOC)	7.80	Total Purge Volume	3.26
Total Depth (ft below TOC)	14.60	Number of Purge Volumes	3

Volume Purged (gal)	Temp (C)	pH	Conductance (mS/cm)	Orp millivolts	DO (mg/L)	Time	Water Description
—	15.00	7.40	934	136.9	2.35	1200	
0.5	14.87	7.40	934	135.3	2.10	1203	
1.0	14.79	7.39	934	133.8	2.17	1208	
1.5	14.70	7.39	934	132.2	2.20	1211	
2.0	14.60	7.39	933	130.6	2.25	1213	
2.5	14.61	7.39	933	130.0	2.22	1215	
3.0	14.42	7.38	934	127.1	2.20	1217	
3.5	14.33	7.38	934	125.4	2.17	1220	

Total Volumes Removed (gallons): 3 **Time:** 1220 **Purged Dry (Y/N):** N

Casing Volume

Casing I.D. (in.)	Unit Casing Volume Gal/Lin. Ft.)
1.0	0.04
1.5	0.09
2.0	0.16
2.2	0.20
3.0	0.37
4.0	0.65
4.3	0.75
5.0	1.00
6.0	1.55
7.0	2.00
8.0	2.60

Additional Remarks

Clear; slight HC odor; very slight HC sheen

AECOM

6501 Americas Pkwy
Albuquerque, NM 87110
Tel: 505.855.7500
Fax: 505.855.7555

Groundwater Sample Field Data Form

Well Identification MW-11A

Page 1 of 1

Project Name:	Chevron Isleta	**Sampled By:**	ECH
Project Number:	24343393	**Sample ID:**	MW-11A
Location:	3401 Isleta Boulevard, Albuquerque, NM	**Sample Date:**	1/30/15
Date:	1/30/15	**Sample Time:**	1150

Equipment

Purging Method/Equipment	new bailer
Sampling Equipment	new bailer
Filtering Equipment	

Field Parameters

Initial Water Temp. (C)	17.81
Initial pH:	7.44
Initial Conductance (mS/cm):	—
Reference Point	

Purging Information

Casing ID (in)	2	Length of Static Water Column (ft)	8.04
Unit Casing Volume (gal/ft)	0.16	Casing Water Volume (gal)	1.29
Depth to Water (ft below TOC)	6.94	Total Purge Volume	3.86
Total Depth (ft below TOC)	14.98	Number of Purge Volumes	3

Volume Purged (gal)	Temp (C)	pH	Conductance (mS/cm)	Orp millivolts	DO (mg/L)	Time	Water Description
—	17.81	7.44	973	152.8	2.34	1120	
0.5	17.62	7.46	974	151.5	2.23	1122	
1.0	17.57	7.47	975	150.8	2.16	1125	
1.5	17.50	7.48	977	150.4	2.12	1127	
2.0	17.51	7.48	979	150.1	2.08	1130	
2.5	17.22	7.48	982	150.1	2.05	1135	
3.0	17.03	7.48	985	149.3	2.03	1138	
3.5	17.00	7.48	985	148.8	1.97	1141	
4.0	17.00	7.48	988	148.3	1.98	1143	

Total Volumes Removed (~~gallons~~): 3 **Time:** 1150 **Purged Dry (Y/N):** N

Casing Volume

Casing I.D. (in.)	Unit Casing Volume Gal/Lin. Ft.)
1.0	0.04
1.5	0.09
2.0	0.16
2.2	0.20
3.0	0.37
4.0	0.65
4.3	0.75
5.0	1.00
6.0	1.55
7.0	2.00
8.0	2.60

Additional Remarks

Clear; Very slight HC odor; NO HC sheen

AECOM

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Albuquerque, NM 87110
Tel: 505.855.7500
Fax: 505.855.7555

Groundwater Sample Field Data Form

Well Identification MW-26

Page 1 of 1

Project Name:	Chevron Isleta	**Sampled By:**	ECH
Project Number:	24343393	**Sample ID:**	MW-26
Location:	3401 Isleta Boulevard, Albuquerque, NM	**Sample Date:**	1/30/15
Date:	1/30/15	**Sample Time:**	1115

Equipment

Purging Method/Equipment	New bailer
Sampling Equipment	New bailer
Filtering Equipment	

Field Parameters

Initial Water Temp. (C)	13.45
Initial pH:	7.44
Initial Conductance (mS/cm):	
Reference Point	

Purging Information

Casing ID (in)	2	Length of Static Water Column (ft)	6.23
Unit Casing Volume (gal/ft)	0.16	Casing Water Volume (gal)	1.0
Depth to Water (ft below TOC)	6.95	Total Purge Volume	3.0
Total Depth (ft below TOC)	13.18	Number of Purge Volumes	3

Volume Purged (gal)	Temp (C)	pH	Conductance (mS/cm)	Orp millivolts	DO (mg/L)	Time	Water Description
—	13.45	7.44	547	149.6	2.09	1050	
.5	13.38	7.46	548	149.3	2.04	1055	
1.0	13.34	7.47	548	149.2	2.04	1057	
1.5	13.29	7.47	548	149.2	2.04	1100	
2.0	13.21	7.48	548	149.3	2.11	1103	
2.5	13.20	7.48	548	149.5	2.07	1108	
3.0	13.15	7.48	548	149.8	2.03	1110	

Total Volumes Removed (~~gallons~~): 3 **Time:** 1115 **Purged Dry (Y/N):** N

Casing Volume

Casing I.D. (in.)	Unit Casing Volume Gal/Lin. Ft.)
1.0	0.04
1.5	0.09
2.0	0.16
2.2	0.20
3.0	0.37
4.0	0.65
4.3	0.75
5.0	1.00
6.0	1.55
7.0	2.00
8.0	2.60

Additional Remarks

Clear; NO HC odor; NO HC sheen.

Appendix D. Laboratory Analytical Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

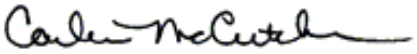
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-39301-1
Client Project/Site: Chevron Isleta

For:
URS Corporation
6501 Americas Pkwy., Ste.900
Albuquerque, New Mexico 87110

Attn: Dale Flores



Authorized for release by:
2/18/2015 7:46:53 AM

Carlene McCutcheon, Project Manager II
(602)659-7612
carlene.mccutcheon@testamericainc.com

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Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
N1	See case narrative.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 550-39301-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-39301-1

Comments
No additional comments.

Receipt
The samples were received on 1/31/2015 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3º C.

GC/MS VOA
Method(s) 8260B: The following sample has a hit for Chloromethane above the RL: 550-39301-A-4 (trip blank). The hit for Chloromethane is believed to be due to a lab contamination during the preparation of the trip blank. All samples associated with this trip blank are non-detects for this compound, therefore, the data is not impacted and will be reported. The trip blank results will be reported with an N1 qualifier, see batch 55920.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-39301-1	MW-8A	Water	01/30/15 12:25	01/31/15 10:00
550-39301-2	MW-11A	Water	01/30/15 11:50	01/31/15 10:00
550-39301-3	MW-26	Water	01/30/15 11:15	01/31/15 10:00
550-39301-4	trip Blank	Water	01/30/15 11:15	01/31/15 10:00

Detection Summary

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: MW-8A — Lab Sample ID: 550-39301-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	39		0.50		ug/L	1		8260B	Total/NA
1,3,5-Trimethylbenzene	9.0		0.50		ug/L	1		8260B	Total/NA
Benzene	10		0.50		ug/L	1		8260B	Total/NA
Ethylbenzene	40		0.50		ug/L	1		8260B	Total/NA
Isopropylbenzene	11		0.50		ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	110		1.0		ug/L	1		8260B	Total/NA
Naphthalene	21		2.5		ug/L	1		8260B	Total/NA
N-Propylbenzene	15		0.50		ug/L	1		8260B	Total/NA
o-Xylene	8.1		0.50		ug/L	1		8260B	Total/NA
sec-Butylbenzene	2.7		0.50		ug/L	1		8260B	Total/NA
Toluene	0.81		0.50		ug/L	1		8260B	Total/NA
Xylenes, Total	120		1.5		ug/L	1		8260B	Total/NA

Client Sample ID: MW-11A — Lab Sample ID: 550-39301-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	5.4		0.50		ug/L	1		8260B	Total/NA
Ethylbenzene	4.7		0.50		ug/L	1		8260B	Total/NA
Isopropylbenzene	22		0.50		ug/L	1		8260B	Total/NA
Naphthalene	43		2.5		ug/L	1		8260B	Total/NA
n-Butylbenzene	4.1		0.50		ug/L	1		8260B	Total/NA
N-Propylbenzene	48		0.50		ug/L	1		8260B	Total/NA
sec-Butylbenzene	3.8		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: MW-26 — Lab Sample ID: 550-39301-3

No Detections.

Client Sample ID: trip Blank — Lab Sample ID: 550-39301-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloromethane	22	N1	1.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: MW-8A
Date Collected: 01/30/15 12:25
Date Received: 01/31/15 10:00

Lab Sample ID: 550-39301-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 06:00	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/10/15 06:00	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 06:00	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/10/15 06:00	1
1,1-Dichloroethane	ND		0.50		ug/L			02/10/15 06:00	1
1,1-Dichloroethene	ND		0.50		ug/L			02/10/15 06:00	1
1,1-Dichloropropene	ND		0.50		ug/L			02/10/15 06:00	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			02/10/15 06:00	1
1,2,3-Trichloropropane	ND		2.0		ug/L			02/10/15 06:00	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/10/15 06:00	1
1,2,4-Trimethylbenzene	**39**		0.50		ug/L			02/10/15 06:00	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			02/10/15 06:00	1
Ethylene Dibromide	ND		0.50		ug/L			02/10/15 06:00	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/10/15 06:00	1
1,2-Dichloroethane	ND		0.50		ug/L			02/10/15 06:00	1
1,2-Dichloropropane	ND		0.50		ug/L			02/10/15 06:00	1
1,3,5-Trimethylbenzene	**9.0**		0.50		ug/L			02/10/15 06:00	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/10/15 06:00	1
1,3-Dichloropropane	ND		0.50		ug/L			02/10/15 06:00	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/10/15 06:00	1
2,2-Dichloropropane	ND		1.0		ug/L			02/10/15 06:00	1
2-Butanone (MEK)	ND		5.0		ug/L			02/10/15 06:00	1
2-Chlorotoluene	ND		0.50		ug/L			02/10/15 06:00	1
2-Hexanone	ND		5.0		ug/L			02/10/15 06:00	1
4-Chlorotoluene	ND		0.50		ug/L			02/10/15 06:00	1
4-Methyl-2-pentanone (MIBK)	ND		2.5		ug/L			02/10/15 06:00	1
Acetone	ND		10		ug/L			02/10/15 06:00	1
Benzene	**10**		0.50		ug/L			02/10/15 06:00	1
Bromobenzene	ND		0.50		ug/L			02/10/15 06:00	1
Chlorobromomethane	ND		0.50		ug/L			02/10/15 06:00	1
Dichlorobromomethane	ND		0.50		ug/L			02/10/15 06:00	1
Bromoform	ND		1.0		ug/L			02/10/15 06:00	1
Bromomethane	ND		1.0		ug/L			02/10/15 06:00	1
Carbon disulfide	ND		1.0		ug/L			02/10/15 06:00	1
Carbon tetrachloride	ND		0.50		ug/L			02/10/15 06:00	1
Chlorobenzene	ND		0.50		ug/L			02/10/15 06:00	1
Chloroethane	ND		1.0		ug/L			02/10/15 06:00	1
Chloroform	ND		0.50		ug/L			02/10/15 06:00	1
Chloromethane	ND		1.0		ug/L			02/10/15 06:00	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 06:00	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 06:00	1
Chlorodibromomethane	ND		0.50		ug/L			02/10/15 06:00	1
Dibromomethane	ND		0.50		ug/L			02/10/15 06:00	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/10/15 06:00	1
Ethylbenzene	**40**		0.50		ug/L			02/10/15 06:00	1
Hexachlorobutadiene	ND		1.0		ug/L			02/10/15 06:00	1
Iodomethane	ND		2.5		ug/L			02/10/15 06:00	1
Isopropylbenzene	**11**		0.50		ug/L			02/10/15 06:00	1
m-Xylene & p-Xylene	**110**		1.0		ug/L			02/10/15 06:00	1

Client Sample ID: MW-8A

Date Collected: 01/30/15 12:25
Date Received: 01/31/15 10:00

Lab Sample ID: 550-39301-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		1.0		ug/L			02/10/15 06:00	1
Methyl tert-butyl ether	ND		0.50		ug/L			02/10/15 06:00	1
Naphthalene	**21**		2.5		ug/L			02/10/15 06:00	1
n-Butylbenzene	ND		0.50		ug/L			02/10/15 06:00	1
N-Propylbenzene	**15**		0.50		ug/L			02/10/15 06:00	1
o-Xylene	**8.1**		0.50		ug/L			02/10/15 06:00	1
4-Isopropyltoluene	ND		0.50		ug/L			02/10/15 06:00	1
sec-Butylbenzene	**2.7**		0.50		ug/L			02/10/15 06:00	1
Styrene	ND		0.50		ug/L			02/10/15 06:00	1
tert-Butylbenzene	ND		0.50		ug/L			02/10/15 06:00	1
Tetrachloroethene	ND		0.50		ug/L			02/10/15 06:00	1
Toluene	**0.81**		0.50		ug/L			02/10/15 06:00	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 06:00	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 06:00	1
Trichloroethene	ND		0.50		ug/L			02/10/15 06:00	1
Trichlorofluoromethane	ND		0.50		ug/L			02/10/15 06:00	1
Vinyl acetate	ND		2.0		ug/L			02/10/15 06:00	1
Vinyl chloride	ND		0.50		ug/L			02/10/15 06:00	1
Xylenes, Total	**120**		1.5		ug/L			02/10/15 06:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*02/10/15 06:00*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*02/10/15 06:00*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*02/10/15 06:00*	*1*

Client Sample ID: MW-11A

Date Collected: 01/30/15 11:50
Date Received: 01/31/15 10:00

Lab Sample ID: 550-39301-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 06:33	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/10/15 06:33	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 06:33	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/10/15 06:33	1
1,1-Dichloroethane	ND		0.50		ug/L			02/10/15 06:33	1
1,1-Dichloroethene	ND		0.50		ug/L			02/10/15 06:33	1
1,1-Dichloropropene	ND		0.50		ug/L			02/10/15 06:33	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			02/10/15 06:33	1
1,2,3-Trichloropropane	ND		2.0		ug/L			02/10/15 06:33	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/10/15 06:33	1
1,2,4-Trimethylbenzene	ND		0.50		ug/L			02/10/15 06:33	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			02/10/15 06:33	1
Ethylene Dibromide	ND		0.50		ug/L			02/10/15 06:33	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/10/15 06:33	1
1,2-Dichloroethane	ND		0.50		ug/L			02/10/15 06:33	1
1,2-Dichloropropane	ND		0.50		ug/L			02/10/15 06:33	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			02/10/15 06:33	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/10/15 06:33	1
1,3-Dichloropropane	ND		0.50		ug/L			02/10/15 06:33	1

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: MW-11A
Date Collected: 01/30/15 11:50
Date Received: 01/31/15 10:00

Lab Sample ID: 550-39301-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.50		ug/L			02/10/15 06:33	1
2,2-Dichloropropane	ND		1.0		ug/L			02/10/15 06:33	1
2-Butanone (MEK)	ND		5.0		ug/L			02/10/15 06:33	1
2-Chlorotoluene	ND		0.50		ug/L			02/10/15 06:33	1
2-Hexanone	ND		5.0		ug/L			02/10/15 06:33	1
4-Chlorotoluene	ND		0.50		ug/L			02/10/15 06:33	1
4-Methyl-2-pentanone (MIBK)	ND		2.5		ug/L			02/10/15 06:33	1
Acetone	ND		10		ug/L			02/10/15 06:33	1
Benzene	**5.4**		0.50		ug/L			02/10/15 06:33	1
Bromobenzene	ND		0.50		ug/L			02/10/15 06:33	1
Chlorobromomethane	ND		0.50		ug/L			02/10/15 06:33	1
Dichlorobromomethane	ND		0.50		ug/L			02/10/15 06:33	1
Bromoform	ND		1.0		ug/L			02/10/15 06:33	1
Bromomethane	ND		1.0		ug/L			02/10/15 06:33	1
Carbon disulfide	ND		1.0		ug/L			02/10/15 06:33	1
Carbon tetrachloride	ND		0.50		ug/L			02/10/15 06:33	1
Chlorobenzene	ND		0.50		ug/L			02/10/15 06:33	1
Chloroethane	ND		1.0		ug/L			02/10/15 06:33	1
Chloroform	ND		0.50		ug/L			02/10/15 06:33	1
Chloromethane	ND		1.0		ug/L			02/10/15 06:33	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 06:33	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 06:33	1
Chlorodibromomethane	ND		0.50		ug/L			02/10/15 06:33	1
Dibromomethane	ND		0.50		ug/L			02/10/15 06:33	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/10/15 06:33	1
Ethylbenzene	**4.7**		0.50		ug/L			02/10/15 06:33	1
Hexachlorobutadiene	ND		1.0		ug/L			02/10/15 06:33	1
Iodomethane	ND		2.5		ug/L			02/10/15 06:33	1
Isopropylbenzene	**22**		0.50		ug/L			02/10/15 06:33	1
m-Xylene & p-Xylene	ND		1.0		ug/L			02/10/15 06:33	1
Methylene Chloride	ND		1.0		ug/L			02/10/15 06:33	1
Methyl tert-butyl ether	ND		0.50		ug/L			02/10/15 06:33	1
Naphthalene	**43**		2.5		ug/L			02/10/15 06:33	1
n-Butylbenzene	**4.1**		0.50		ug/L			02/10/15 06:33	1
N-Propylbenzene	**48**		0.50		ug/L			02/10/15 06:33	1
o-Xylene	ND		0.50		ug/L			02/10/15 06:33	1
4-Isopropyltoluene	ND		0.50		ug/L			02/10/15 06:33	1
sec-Butylbenzene	**3.8**		0.50		ug/L			02/10/15 06:33	1
Styrene	ND		0.50		ug/L			02/10/15 06:33	1
tert-Butylbenzene	ND		0.50		ug/L			02/10/15 06:33	1
Tetrachloroethene	ND		0.50		ug/L			02/10/15 06:33	1
Toluene	ND		0.50		ug/L			02/10/15 06:33	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 06:33	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 06:33	1
Trichloroethene	ND		0.50		ug/L			02/10/15 06:33	1
Trichlorofluoromethane	ND		0.50		ug/L			02/10/15 06:33	1
Vinyl acetate	ND		2.0		ug/L			02/10/15 06:33	1
Vinyl chloride	ND		0.50		ug/L			02/10/15 06:33	1
Xylenes, Total	ND		1.5		ug/L			02/10/15 06:33	1

Client Sample ID: MW-11A

Lab Sample ID: 550-39301-2

Date Collected: 01/30/15 11:50

Matrix: Water

Date Received: 01/31/15 10:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*02/10/15 06:33*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*02/10/15 06:33*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*02/10/15 06:33*	*1*

Client Sample ID: MW-26

Lab Sample ID: 550-39301-3

Date Collected: 01/30/15 11:15

Matrix: Water

Date Received: 01/31/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 07:05	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/10/15 07:05	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 07:05	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/10/15 07:05	1
1,1-Dichloroethane	ND		0.50		ug/L			02/10/15 07:05	1
1,1-Dichloroethene	ND		0.50		ug/L			02/10/15 07:05	1
1,1-Dichloropropene	ND		0.50		ug/L			02/10/15 07:05	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			02/10/15 07:05	1
1,2,3-Trichloropropane	ND		2.0		ug/L			02/10/15 07:05	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/10/15 07:05	1
1,2,4-Trimethylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			02/10/15 07:05	1
Ethylene Dibromide	ND		0.50		ug/L			02/10/15 07:05	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/10/15 07:05	1
1,2-Dichloroethane	ND		0.50		ug/L			02/10/15 07:05	1
1,2-Dichloropropane	ND		0.50		ug/L			02/10/15 07:05	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/10/15 07:05	1
1,3-Dichloropropane	ND		0.50		ug/L			02/10/15 07:05	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/10/15 07:05	1
2,2-Dichloropropane	ND		1.0		ug/L			02/10/15 07:05	1
2-Butanone (MEK)	ND		5.0		ug/L			02/10/15 07:05	1
2-Chlorotoluene	ND		0.50		ug/L			02/10/15 07:05	1
2-Hexanone	ND		5.0		ug/L			02/10/15 07:05	1
4-Chlorotoluene	ND		0.50		ug/L			02/10/15 07:05	1
4-Methyl-2-pentanone (MIBK)	ND		2.5		ug/L			02/10/15 07:05	1
Acetone	ND		10		ug/L			02/10/15 07:05	1
Benzene	ND		0.50		ug/L			02/10/15 07:05	1
Bromobenzene	ND		0.50		ug/L			02/10/15 07:05	1
Chlorobromomethane	ND		0.50		ug/L			02/10/15 07:05	1
Dichlorobromomethane	ND		0.50		ug/L			02/10/15 07:05	1
Bromoform	ND		1.0		ug/L			02/10/15 07:05	1
Bromomethane	ND		1.0		ug/L			02/10/15 07:05	1
Carbon disulfide	ND		1.0		ug/L			02/10/15 07:05	1
Carbon tetrachloride	ND		0.50		ug/L			02/10/15 07:05	1
Chlorobenzene	ND		0.50		ug/L			02/10/15 07:05	1
Chloroethane	ND		1.0		ug/L			02/10/15 07:05	1
Chloroform	ND		0.50		ug/L			02/10/15 07:05	1
Chloromethane	ND		1.0		ug/L			02/10/15 07:05	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 07:05	1

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: MW-26

Lab Sample ID: 550-39301-3

Date Collected: 01/30/15 11:15

Matrix: Water

Date Received: 01/31/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 07:05	1
Chlorodibromomethane	ND		0.50		ug/L			02/10/15 07:05	1
Dibromomethane	ND		0.50		ug/L			02/10/15 07:05	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/10/15 07:05	1
Ethylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
Hexachlorobutadiene	ND		1.0		ug/L			02/10/15 07:05	1
Iodomethane	ND		2.5		ug/L			02/10/15 07:05	1
Isopropylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
m-Xylene & p-Xylene	ND		1.0		ug/L			02/10/15 07:05	1
Methylene Chloride	ND		1.0		ug/L			02/10/15 07:05	1
Methyl tert-butyl ether	ND		0.50		ug/L			02/10/15 07:05	1
Naphthalene	ND		2.5		ug/L			02/10/15 07:05	1
n-Butylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
N-Propylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
o-Xylene	ND		0.50		ug/L			02/10/15 07:05	1
4-Isopropyltoluene	ND		0.50		ug/L			02/10/15 07:05	1
sec-Butylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
Styrene	ND		0.50		ug/L			02/10/15 07:05	1
tert-Butylbenzene	ND		0.50		ug/L			02/10/15 07:05	1
Tetrachloroethene	ND		0.50		ug/L			02/10/15 07:05	1
Toluene	ND		0.50		ug/L			02/10/15 07:05	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 07:05	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 07:05	1
Trichloroethene	ND		0.50		ug/L			02/10/15 07:05	1
Trichlorofluoromethane	ND		0.50		ug/L			02/10/15 07:05	1
Vinyl acetate	ND		2.0		ug/L			02/10/15 07:05	1
Vinyl chloride	ND		0.50		ug/L			02/10/15 07:05	1
Xylenes, Total	ND		1.5		ug/L			02/10/15 07:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*02/10/15 07:05*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*02/10/15 07:05*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*02/10/15 07:05*	*1*

Client Sample ID: trip Blank

Lab Sample ID: 550-39301-4

Date Collected: 01/30/15 11:15

Matrix: Water

Date Received: 01/31/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 01:32	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/10/15 01:32	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 01:32	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/10/15 01:32	1
1,1-Dichloroethane	ND		0.50		ug/L			02/10/15 01:32	1
1,1-Dichloroethene	ND		0.50		ug/L			02/10/15 01:32	1
1,1-Dichloropropene	ND		0.50		ug/L			02/10/15 01:32	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			02/10/15 01:32	1
1,2,3-Trichloropropane	ND		2.0		ug/L			02/10/15 01:32	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/10/15 01:32	1

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: trip Blank
Date Collected: 01/30/15 11:15
Date Received: 01/31/15 10:00

Lab Sample ID: 550-39301-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			02/10/15 01:32	1
Ethylene Dibromide	ND		0.50		ug/L			02/10/15 01:32	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/10/15 01:32	1
1,2-Dichloroethane	ND		0.50		ug/L			02/10/15 01:32	1
1,2-Dichloropropane	ND		0.50		ug/L			02/10/15 01:32	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/10/15 01:32	1
1,3-Dichloropropane	ND		0.50		ug/L			02/10/15 01:32	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/10/15 01:32	1
2,2-Dichloropropane	ND		1.0		ug/L			02/10/15 01:32	1
2-Butanone (MEK)	ND		5.0		ug/L			02/10/15 01:32	1
2-Chlorotoluene	ND		0.50		ug/L			02/10/15 01:32	1
2-Hexanone	ND		5.0		ug/L			02/10/15 01:32	1
4-Chlorotoluene	ND		0.50		ug/L			02/10/15 01:32	1
4-Methyl-2-pentanone (MIBK)	ND		2.5		ug/L			02/10/15 01:32	1
Acetone	ND		10		ug/L			02/10/15 01:32	1
Benzene	ND		0.50		ug/L			02/10/15 01:32	1
Bromobenzene	ND		0.50		ug/L			02/10/15 01:32	1
Chlorobromomethane	ND		0.50		ug/L			02/10/15 01:32	1
Dichlorobromomethane	ND		0.50		ug/L			02/10/15 01:32	1
Bromoform	ND		1.0		ug/L			02/10/15 01:32	1
Bromomethane	ND		1.0		ug/L			02/10/15 01:32	1
Carbon disulfide	ND		1.0		ug/L			02/10/15 01:32	1
Carbon tetrachloride	ND		0.50		ug/L			02/10/15 01:32	1
Chlorobenzene	ND		0.50		ug/L			02/10/15 01:32	1
Chloroethane	ND		1.0		ug/L			02/10/15 01:32	1
Chloroform	ND		0.50		ug/L			02/10/15 01:32	1
Chloromethane	**22**	**N1**	1.0		ug/L			02/10/15 01:32	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 01:32	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 01:32	1
Chlorodibromomethane	ND		0.50		ug/L			02/10/15 01:32	1
Dibromomethane	ND		0.50		ug/L			02/10/15 01:32	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/10/15 01:32	1
Ethylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
Hexachlorobutadiene	ND		1.0		ug/L			02/10/15 01:32	1
Iodomethane	ND		2.5		ug/L			02/10/15 01:32	1
Isopropylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
m-Xylene & p-Xylene	ND		1.0		ug/L			02/10/15 01:32	1
Methylene Chloride	ND		1.0		ug/L			02/10/15 01:32	1
Methyl tert-butyl ether	ND		0.50		ug/L			02/10/15 01:32	1
Naphthalene	ND		2.5		ug/L			02/10/15 01:32	1
n-Butylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
N-Propylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
o-Xylene	ND		0.50		ug/L			02/10/15 01:32	1
4-Isopropyltoluene	ND		0.50		ug/L			02/10/15 01:32	1
sec-Butylbenzene	ND		0.50		ug/L			02/10/15 01:32	1
Styrene	ND		0.50		ug/L			02/10/15 01:32	1
tert-Butylbenzene	ND		0.50		ug/L			02/10/15 01:32	1

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: trip Blank
Date Collected: 01/30/15 11:15
Date Received: 01/31/15 10:00

Lab Sample ID: 550-39301-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.50		ug/L			02/10/15 01:32	1
Toluene	ND		0.50		ug/L			02/10/15 01:32	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 01:32	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 01:32	1
Trichloroethene	ND		0.50		ug/L			02/10/15 01:32	1
Trichlorofluoromethane	ND		0.50		ug/L			02/10/15 01:32	1
Vinyl acetate	ND		2.0		ug/L			02/10/15 01:32	1
Vinyl chloride	ND		0.50		ug/L			02/10/15 01:32	1
Xylenes, Total	ND		1.5		ug/L			02/10/15 01:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*02/10/15 01:32*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*02/10/15 01:32*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*02/10/15 01:32*	*1*

Surrogate Summary

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		DBFM	TOL	BFB						
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)						
550-39296-A-1 MS	Matrix Spike	101	101	102						
550-39296-A-1 MSD	Matrix Spike Duplicate	101	102	103						
550-39301-1	MW-8A	99	102	102						
550-39301-2	MW-11A	99	103	101						
550-39301-3	MW-26	100	99	95						
550-39301-4	trip Blank	101	101	98						
LCS 550-55920/3	Lab Control Sample	101	100	101						
LCSD 550-55920/4	Lab Control Sample Dup	98	101	100						
MB 550-55920/5	Method Blank	97	100	95						

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 550-55920/5
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 00:27	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/10/15 00:27	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/10/15 00:27	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/10/15 00:27	1
1,1-Dichloroethane	ND		0.50		ug/L			02/10/15 00:27	1
1,1-Dichloroethene	ND		0.50		ug/L			02/10/15 00:27	1
1,1-Dichloropropene	ND		0.50		ug/L			02/10/15 00:27	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			02/10/15 00:27	1
1,2,3-Trichloropropane	ND		2.0		ug/L			02/10/15 00:27	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/10/15 00:27	1
1,2,4-Trimethylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			02/10/15 00:27	1
Ethylene Dibromide	ND		0.50		ug/L			02/10/15 00:27	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/10/15 00:27	1
1,2-Dichloroethane	ND		0.50		ug/L			02/10/15 00:27	1
1,2-Dichloropropane	ND		0.50		ug/L			02/10/15 00:27	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/10/15 00:27	1
1,3-Dichloropropane	ND		0.50		ug/L			02/10/15 00:27	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/10/15 00:27	1
2,2-Dichloropropane	ND		1.0		ug/L			02/10/15 00:27	1
2-Butanone (MEK)	ND		5.0		ug/L			02/10/15 00:27	1
2-Chlorotoluene	ND		0.50		ug/L			02/10/15 00:27	1
2-Hexanone	ND		5.0		ug/L			02/10/15 00:27	1
4-Chlorotoluene	ND		0.50		ug/L			02/10/15 00:27	1
4-Methyl-2-pentanone (MIBK)	ND		2.5		ug/L			02/10/15 00:27	1
Acetone	ND		10		ug/L			02/10/15 00:27	1
Benzene	ND		0.50		ug/L			02/10/15 00:27	1
Bromobenzene	ND		0.50		ug/L			02/10/15 00:27	1
Chlorobromomethane	ND		0.50		ug/L			02/10/15 00:27	1
Dichlorobromomethane	ND		0.50		ug/L			02/10/15 00:27	1
Bromoform	ND		1.0		ug/L			02/10/15 00:27	1
Bromomethane	ND		1.0		ug/L			02/10/15 00:27	1
Carbon disulfide	ND		1.0		ug/L			02/10/15 00:27	1
Carbon tetrachloride	ND		0.50		ug/L			02/10/15 00:27	1
Chlorobenzene	ND		0.50		ug/L			02/10/15 00:27	1
Chloroethane	ND		1.0		ug/L			02/10/15 00:27	1
Chloroform	ND		0.50		ug/L			02/10/15 00:27	1
Chloromethane	ND		1.0		ug/L			02/10/15 00:27	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 00:27	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 00:27	1
Chlorodibromomethane	ND		0.50		ug/L			02/10/15 00:27	1
Dibromomethane	ND		0.50		ug/L			02/10/15 00:27	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/10/15 00:27	1
Ethylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
Hexachlorobutadiene	ND		1.0		ug/L			02/10/15 00:27	1
Iodomethane	ND		2.5		ug/L			02/10/15 00:27	1
Isopropylbenzene	ND		0.50		ug/L			02/10/15 00:27	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 550-55920/5
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND		1.0		ug/L			02/10/15 00:27	1
Methylene Chloride	ND		1.0		ug/L			02/10/15 00:27	1
Methyl tert-butyl ether	ND		0.50		ug/L			02/10/15 00:27	1
Naphthalene	ND		2.5		ug/L			02/10/15 00:27	1
n-Butylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
N-Propylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
o-Xylene	ND		0.50		ug/L			02/10/15 00:27	1
4-Isopropyltoluene	ND		0.50		ug/L			02/10/15 00:27	1
sec-Butylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
Styrene	ND		0.50		ug/L			02/10/15 00:27	1
tert-Butylbenzene	ND		0.50		ug/L			02/10/15 00:27	1
Tetrachloroethene	ND		0.50		ug/L			02/10/15 00:27	1
Toluene	ND		0.50		ug/L			02/10/15 00:27	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/10/15 00:27	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/10/15 00:27	1
Trichloroethene	ND		0.50		ug/L			02/10/15 00:27	1
Trichlorofluoromethane	ND		0.50		ug/L			02/10/15 00:27	1
Vinyl acetate	ND		2.0		ug/L			02/10/15 00:27	1
Vinyl chloride	ND		0.50		ug/L			02/10/15 00:27	1
Xylenes, Total	ND		1.5		ug/L			02/10/15 00:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*97*		*70 - 130*		*02/10/15 00:27*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*02/10/15 00:27*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*02/10/15 00:27*	*1*

Lab Sample ID: LCS 550-55920/3
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1,2-Tetrachloroethane			25.0	25.3		ug/L		101	70 - 130		
1,1,1-Trichloroethane			25.0	25.2		ug/L		101	71 - 131		
1,1,2,2-Tetrachloroethane			25.0	26.3		ug/L		105	70 - 130		
1,1,2-Trichloroethane			25.0	25.4		ug/L		102	70 - 130		
1,1-Dichloroethane			25.0	25.3		ug/L		101	70 - 130		
1,1-Dichloroethene			25.0	24.2		ug/L		97	63 - 131		
1,1-Dichloropropene			25.0	25.1		ug/L		100	70 - 130		
1,2,3-Trichlorobenzene			25.0	24.5		ug/L		98	79 - 139		
1,2,3-Trichloropropane			25.0	26.2		ug/L		105	70 - 130		
1,2,4-Trichlorobenzene			25.0	24.7		ug/L		99	80 - 137		
1,2,4-Trimethylbenzene			25.0	26.8		ug/L		107	70 - 130		
1,2-Dibromo-3-Chloropropane			25.0	26.6		ug/L		107	63 - 146		
Ethylene Dibromide			25.0	25.8		ug/L		103	70 - 130		
1,2-Dichlorobenzene			25.0	26.2		ug/L		105	70 - 130		
1,2-Dichloroethane			25.0	25.4		ug/L		101	66 - 139		
1,2-Dichloropropane			25.0	26.1		ug/L		104	70 - 130		
1,3,5-Trimethylbenzene			25.0	26.8		ug/L		107	70 - 130		

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-55920/3
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130
1,3-Dichloropropane	25.0	25.6		ug/L		102	70 - 130
1,4-Dichlorobenzene	25.0	25.6		ug/L		102	70 - 130
2,2-Dichloropropane	25.0	26.2		ug/L		105	69 - 139
2-Butanone (MEK)	25.0	27.4		ug/L		109	53 - 150
2-Chlorotoluene	25.0	26.2		ug/L		105	70 - 130
2-Hexanone	25.0	30.9		ug/L		124	55 - 150
4-Chlorotoluene	25.0	26.4		ug/L		106	70 - 130
4-Methyl-2-pentanone (MIBK)	25.0	25.5		ug/L		102	64 - 142
Acetone	25.0	32.3		ug/L		129	38 - 150
Benzene	25.0	24.9		ug/L		99	70 - 130
Bromobenzene	25.0	26.8		ug/L		107	70 - 130
Chlorobromomethane	25.0	26.8		ug/L		107	70 - 130
Dichlorobromomethane	25.0	25.6		ug/L		103	70 - 130
Bromoform	25.0	26.4		ug/L		106	69 - 129
Bromomethane	25.0	23.4		ug/L		94	57 - 138
Carbon disulfide	25.0	24.6		ug/L		98	64 - 145
Carbon tetrachloride	25.0	25.0		ug/L		100	70 - 143
Chlorobenzene	25.0	24.8		ug/L		99	70 - 130
Chloroethane	25.0	25.1		ug/L		100	66 - 131
Chloroform	25.0	25.5		ug/L		102	70 - 130
Chloromethane	25.0	25.0		ug/L		100	56 - 129
cis-1,2-Dichloroethene	25.0	25.0		ug/L		100	70 - 130
cis-1,3-Dichloropropene	25.0	26.2		ug/L		105	70 - 130
Chlorodibromomethane	25.0	24.8		ug/L		99	70 - 130
Dibromomethane	25.0	25.6		ug/L		102	70 - 130
Dichlorodifluoromethane	25.0	26.5		ug/L		106	46 - 144
Ethylbenzene	25.0	25.5		ug/L		102	70 - 130
Hexachlorobutadiene	25.0	24.3		ug/L		97	76 - 145
Iodomethane	25.0	25.7		ug/L		103	70 - 130
Isopropylbenzene	25.0	27.1		ug/L		108	88 - 141
m-Xylene & p-Xylene	25.0	26.1		ug/L		104	70 - 130
Methylene Chloride	25.0	24.9		ug/L		100	63 - 128
Methyl tert-butyl ether	25.0	25.2		ug/L		101	70 - 130
Naphthalene	25.0	24.7		ug/L		99	78 - 143
n-Butylbenzene	25.0	26.6		ug/L		106	70 - 130
N-Propylbenzene	25.0	26.6		ug/L		107	70 - 130
o-Xylene	25.0	26.4		ug/L		105	70 - 130
4-Isopropyltoluene	25.0	26.5		ug/L		106	70 - 130
sec-Butylbenzene	25.0	27.0		ug/L		108	70 - 130
Styrene	25.0	25.7		ug/L		103	70 - 130
Tetrachloroethene	25.0	25.3		ug/L		101	70 - 130
Toluene	25.0	25.1		ug/L		100	70 - 130
trans-1,2-Dichloroethene	25.0	24.5		ug/L		98	69 - 127
trans-1,3-Dichloropropene	25.0	25.8		ug/L		103	70 - 130
Trichloroethene	25.0	25.7		ug/L		103	70 - 130
Trichlorofluoromethane	25.0	25.4		ug/L		102	69 - 150
Vinyl acetate	25.0	25.0		ug/L		100	67 - 148

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 550-55920/3
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			25.0	25.5		ug/L		102	65 - 137		
Xylenes, Total			50.0	52.5		ug/L		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 550-55920/4
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			25.0	25.6		ug/L		102	70 - 130	1	20
1,1,1-Trichloroethane			25.0	25.8		ug/L		103	71 - 131	2	20
1,1,2,2-Tetrachloroethane			25.0	25.0		ug/L		100	70 - 130	5	20
1,1,2-Trichloroethane			25.0	25.1		ug/L		100	70 - 130	1	20
1,1-Dichloroethane			25.0	25.1		ug/L		100	70 - 130	1	20
1,1-Dichloroethene			25.0	25.2		ug/L		101	63 - 131	4	22
1,1-Dichloropropene			25.0	25.8		ug/L		103	70 - 130	3	20
1,2,3-Trichlorobenzene			25.0	24.3		ug/L		97	79 - 139	0	20
1,2,3-Trichloropropane			25.0	24.5		ug/L		98	70 - 130	6	20
1,2,4-Trichlorobenzene			25.0	24.9		ug/L		100	80 - 137	1	20
1,2,4-Trimethylbenzene			25.0	27.2		ug/L		109	70 - 130	2	20
1,2-Dibromo-3-Chloropropane			25.0	23.6		ug/L		94	63 - 146	12	22
Ethylene Dibromide			25.0	24.7		ug/L		99	70 - 130	4	20
1,2-Dichlorobenzene			25.0	25.5		ug/L		102	70 - 130	3	20
1,2-Dichloroethane			25.0	24.7		ug/L		99	66 - 139	3	20
1,2-Dichloropropane			25.0	25.9		ug/L		104	70 - 130	1	20
1,3,5-Trimethylbenzene			25.0	27.4		ug/L		110	70 - 130	2	20
1,3-Dichlorobenzene			25.0	25.8		ug/L		103	70 - 130	0	20
1,3-Dichloropropane			25.0	24.9		ug/L		100	70 - 130	3	20
1,4-Dichlorobenzene			25.0	25.8		ug/L		103	70 - 130	1	20
2,2-Dichloropropane			25.0	26.8		ug/L		107	69 - 139	2	20
2-Butanone (MEK)			25.0	27.3		ug/L		109	53 - 150	0	35
2-Chlorotoluene			25.0	26.3		ug/L		105	70 - 130	0	20
2-Hexanone			25.0	28.7		ug/L		115	55 - 150	7	35
4-Chlorotoluene			25.0	27.0		ug/L		108	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)			25.0	23.6		ug/L		94	64 - 142	8	25
Acetone			25.0	30.9		ug/L		124	38 - 150	4	35
Benzene			25.0	25.1		ug/L		100	70 - 130	1	20
Bromobenzene			25.0	26.6		ug/L		106	70 - 130	1	20
Chlorobromomethane			25.0	26.5		ug/L		106	70 - 130	1	20
Dichlorobromomethane			25.0	25.0		ug/L		100	70 - 130	2	20
Bromoform			25.0	24.9		ug/L		99	69 - 129	6	20
Bromomethane			25.0	24.0		ug/L		96	57 - 138	3	20
Carbon disulfide			25.0	25.7		ug/L		103	64 - 145	4	33
Carbon tetrachloride			25.0	25.5		ug/L		102	70 - 143	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 550-55920/4
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene			25.0	25.1		ug/L		100	70 - 130	1	20
Chloroethane			25.0	25.7		ug/L		103	66 - 131	2	20
Chloroform			25.0	25.0		ug/L		100	70 - 130	2	20
Chloromethane			25.0	25.9		ug/L		103	56 - 129	3	20
cis-1,2-Dichloroethene			25.0	25.7		ug/L		103	70 - 130	3	20
cis-1,3-Dichloropropene			25.0	25.5		ug/L		102	70 - 130	3	20
Chlorodibromomethane			25.0	24.3		ug/L		97	70 - 130	2	20
Dibromomethane			25.0	25.8		ug/L		103	70 - 130	1	20
Dichlorodifluoromethane			25.0	27.6		ug/L		110	46 - 144	4	23
Ethylbenzene			25.0	25.7		ug/L		103	70 - 130	1	20
Hexachlorobutadiene			25.0	25.2		ug/L		101	76 - 145	4	20
Iodomethane			25.0	26.2		ug/L		105	70 - 130	2	20
Isopropylbenzene			25.0	27.4		ug/L		110	88 - 141	1	20
m-Xylene & p-Xylene			25.0	26.2		ug/L		105	70 - 130	0	20
Methylene Chloride			25.0	25.6		ug/L		102	63 - 128	3	21
Methyl tert-butyl ether			25.0	23.9		ug/L		96	70 - 130	5	20
Naphthalene			25.0	24.1		ug/L		97	78 - 143	2	20
n-Butylbenzene			25.0	27.4		ug/L		110	70 - 130	3	20
N-Propylbenzene			25.0	27.3		ug/L		109	70 - 130	2	20
o-Xylene			25.0	26.5		ug/L		106	70 - 130	1	20
4-Isopropyltoluene			25.0	27.2		ug/L		109	70 - 130	3	20
sec-Butylbenzene			25.0	27.7		ug/L		111	70 - 130	3	20
Styrene			25.0	25.9		ug/L		104	70 - 130	1	20
Tetrachloroethene			25.0	25.8		ug/L		103	70 - 130	2	20
Toluene			25.0	25.6		ug/L		103	70 - 130	2	20
trans-1,2-Dichloroethene			25.0	24.6		ug/L		99	69 - 127	1	20
trans-1,3-Dichloropropene			25.0	25.2		ug/L		101	70 - 130	3	20
Trichloroethene			25.0	26.3		ug/L		105	70 - 130	2	20
Trichlorofluoromethane			25.0	26.8		ug/L		107	69 - 150	5	22
Vinyl acetate			25.0	22.4		ug/L		90	67 - 148	11	22
Vinyl chloride			25.0	26.7		ug/L		107	65 - 137	5	20
Xylenes, Total			50.0	52.7		ug/L		105	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 550-39296-A-1 MS
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		25.0	25.7		ug/L		103	70 - 130
1,1,1-Trichloroethane	ND		25.0	26.3		ug/L		105	64 - 138
1,1,2,2-Tetrachloroethane	ND		25.0	27.1		ug/L		108	63 - 137
1,1,2-Trichloroethane	ND		25.0	26.2		ug/L		105	63 - 132
1,1-Dichloroethane	ND		25.0	25.4		ug/L		102	62 - 130

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-39296-A-1 MS
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		25.0	25.1		ug/L		101	57 - 137
1,1-Dichloropropene	ND		25.0	25.7		ug/L		103	64 - 134
1,2,3-Trichlorobenzene	ND		25.0	25.0		ug/L		100	74 - 139
1,2,3-Trichloropropane	ND		25.0	27.5		ug/L		110	68 - 130
1,2,4-Trichlorobenzene	ND		25.0	24.9		ug/L		99	74 - 138
1,2,4-Trimethylbenzene	ND		25.0	27.2		ug/L		109	63 - 135
1,2-Dibromo-3-Chloropropane	ND		25.0	26.8		ug/L		107	53 - 145
Ethylene Dibromide	ND		25.0	26.3		ug/L		105	70 - 130
1,2-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130
1,2-Dichloroethane	ND		25.0	25.8		ug/L		103	54 - 147
1,2-Dichloropropane	ND		25.0	25.6		ug/L		102	68 - 126
1,3,5-Trimethylbenzene	ND		25.0	27.2		ug/L		109	66 - 137
1,3-Dichlorobenzene	ND		25.0	25.8		ug/L		103	70 - 130
1,3-Dichloropropane	ND		25.0	26.5		ug/L		106	68 - 129
1,4-Dichlorobenzene	ND		25.0	26.0		ug/L		104	70 - 130
2,2-Dichloropropane	ND		25.0	24.8		ug/L		99	60 - 146
2-Butanone (MEK)	ND		25.0	28.0		ug/L		112	31 - 143
2-Chlorotoluene	ND		25.0	26.7		ug/L		107	71 - 131
2-Hexanone	ND		25.0	24.4		ug/L		97	40 - 142
4-Chlorotoluene	ND		25.0	26.3		ug/L		105	70 - 130
4-Methyl-2-pentanone (MIBK)	ND		25.0	24.6		ug/L		98	52 - 143
Acetone	ND		25.0	17.8		ug/L		71	29 - 139
Benzene	ND		25.0	24.9		ug/L		100	68 - 131
Bromobenzene	ND		25.0	27.1		ug/L		108	70 - 130
Chlorobromomethane	ND		25.0	26.9		ug/L		108	64 - 132
Dichlorobromomethane	ND		25.0	25.8		ug/L		103	63 - 138
Bromoform	ND		25.0	27.3		ug/L		109	60 - 128
Bromomethane	ND		25.0	23.0		ug/L		92	47 - 144
Carbon disulfide	ND		25.0	25.9		ug/L		104	45 - 150
Carbon tetrachloride	ND		25.0	26.9		ug/L		108	65 - 147
Chlorobenzene	ND		25.0	25.7		ug/L		103	70 - 130
Chloroethane	ND		25.0	25.1		ug/L		100	57 - 139
Chloroform	ND		25.0	25.7		ug/L		103	63 - 131
Chloromethane	ND		25.0	24.0		ug/L		96	47 - 134
cis-1,2-Dichloroethene	ND		25.0	25.5		ug/L		102	65 - 127
cis-1,3-Dichloropropene	ND		25.0	25.3		ug/L		101	63 - 135
Chlorodibromomethane	ND		25.0	26.3		ug/L		105	65 - 134
Dibromomethane	ND		25.0	26.3		ug/L		105	66 - 136
Dichlorodifluoromethane	ND		25.0	27.4		ug/L		109	40 - 148
Ethylbenzene	ND		25.0	26.1		ug/L		104	74 - 134
Hexachlorobutadiene	ND		25.0	25.8		ug/L		103	69 - 150
Iodomethane	ND		25.0	26.0		ug/L		104	53 - 150
Isopropylbenzene	ND		25.0	27.4		ug/L		110	80 - 146
m-Xylene & p-Xylene	ND		25.0	26.5		ug/L		106	58 - 138
Methylene Chloride	ND		25.0	25.0		ug/L		100	55 - 133
Methyl tert-butyl ether	ND		25.0	25.4		ug/L		102	67 - 138
Naphthalene	ND		25.0	26.1		ug/L		104	67 - 146
n-Butylbenzene	ND		25.0	26.8		ug/L		107	69 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-39296-A-1 MS
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Propylbenzene	ND		25.0	27.0		ug/L		108	74 - 140
o-Xylene	ND		25.0	27.0		ug/L		108	66 - 137
4-Isopropyltoluene	ND		25.0	27.1		ug/L		108	70 - 133
sec-Butylbenzene	ND		25.0	27.9		ug/L		111	72 - 136
Styrene	ND		25.0	25.8		ug/L		103	43 - 144
Tetrachloroethene	ND		25.0	26.3		ug/L		105	67 - 131
Toluene	ND		25.0	25.5		ug/L		102	65 - 138
trans-1,2-Dichloroethene	ND		25.0	24.9		ug/L		100	62 - 131
trans-1,3-Dichloropropene	ND		25.0	25.2		ug/L		101	58 - 136
Trichloroethene	ND		25.0	25.4		ug/L		102	66 - 132
Trichlorofluoromethane	ND		25.0	27.3		ug/L		109	62 - 150
Vinyl acetate	ND		25.0	25.2		ug/L		101	47 - 150
Vinyl chloride	ND		25.0	25.3		ug/L		101	55 - 146
Xylenes, Total	ND		50.0	53.5		ug/L		107	68 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 550-39296-A-1 MSD
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		25.0	25.9		ug/L		104	70 - 130	1	30
1,1,1-Trichloroethane	ND		25.0	25.7		ug/L		103	64 - 138	2	35
1,1,2,2-Tetrachloroethane	ND		25.0	27.5		ug/L		110	63 - 137	1	32
1,1,2-Trichloroethane	ND		25.0	26.4		ug/L		106	63 - 132	1	35
1,1-Dichloroethane	ND		25.0	25.5		ug/L		102	62 - 130	1	34
1,1-Dichloroethene	ND		25.0	24.7		ug/L		99	57 - 137	2	35
1,1-Dichloropropene	ND		25.0	25.6		ug/L		102	64 - 134	0	34
1,2,3-Trichlorobenzene	ND		25.0	25.3		ug/L		101	74 - 139	1	26
1,2,3-Trichloropropane	ND		25.0	27.4		ug/L		110	68 - 130	0	32
1,2,4-Trichlorobenzene	ND		25.0	24.9		ug/L		100	74 - 138	0	26
1,2,4-Trimethylbenzene	ND		25.0	26.9		ug/L		108	63 - 135	1	31
1,2-Dibromo-3-Chloropropane	ND		25.0	29.4		ug/L		118	53 - 145	9	35
Ethylene Dibromide	ND		25.0	27.2		ug/L		109	70 - 130	3	33
1,2-Dichlorobenzene	ND		25.0	25.7		ug/L		103	70 - 130	2	27
1,2-Dichloroethane	ND		25.0	26.2		ug/L		105	54 - 147	1	35
1,2-Dichloropropane	ND		25.0	26.4		ug/L		106	68 - 126	3	32
1,3,5-Trimethylbenzene	ND		25.0	27.1		ug/L		108	66 - 137	1	30
1,3-Dichlorobenzene	ND		25.0	25.8		ug/L		103	70 - 130	0	28
1,3-Dichloropropane	ND		25.0	27.0		ug/L		108	68 - 129	2	33
1,4-Dichlorobenzene	ND		25.0	25.6		ug/L		102	70 - 130	2	26
2,2-Dichloropropane	ND		25.0	24.7		ug/L		99	60 - 146	0	35
2-Butanone (MEK)	ND		25.0	31.2		ug/L		125	31 - 143	11	35
2-Chlorotoluene	ND		25.0	26.4		ug/L		106	71 - 131	1	29

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-39296-A-1 MSD
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	ND		25.0	24.2		ug/L		97	40 - 142	1	35
4-Chlorotoluene	ND		25.0	26.1		ug/L		105	70 - 130	1	28
4-Methyl-2-pentanone (MIBK)	ND		25.0	26.0		ug/L		104	52 - 143	6	35
Acetone	ND		25.0	17.8		ug/L		71	29 - 139	0	35
Benzene	ND		25.0	25.1		ug/L		101	68 - 131	1	32
Bromobenzene	ND		25.0	27.0		ug/L		108	70 - 130	0	28
Chlorobromomethane	ND		25.0	27.2		ug/L		109	64 - 132	1	35
Dichlorobromomethane	ND		25.0	25.7		ug/L		103	63 - 138	0	31
Bromoform	ND		25.0	27.7		ug/L		111	60 - 128	1	31
Bromomethane	ND		25.0	23.4		ug/L		94	47 - 144	2	35
Carbon disulfide	ND		25.0	25.5		ug/L		102	45 - 150	1	35
Carbon tetrachloride	ND		25.0	26.6		ug/L		106	65 - 147	1	35
Chlorobenzene	ND		25.0	25.3		ug/L		101	70 - 130	2	30
Chloroethane	ND		25.0	25.4		ug/L		102	57 - 139	1	35
Chloroform	ND		25.0	26.1		ug/L		104	63 - 131	1	33
Chloromethane	ND		25.0	25.0		ug/L		100	47 - 134	4	35
cis-1,2-Dichloroethene	ND		25.0	25.5		ug/L		102	65 - 127	0	34
cis-1,3-Dichloropropene	ND		25.0	25.7		ug/L		103	63 - 135	1	35
Chlorodibromomethane	ND		25.0	26.2		ug/L		105	65 - 134	0	33
Dibromomethane	ND		25.0	27.3		ug/L		109	66 - 136	4	35
Dichlorodifluoromethane	ND		25.0	28.1		ug/L		112	40 - 148	3	35
Ethylbenzene	ND		25.0	26.2		ug/L		105	74 - 134	0	32
Hexachlorobutadiene	ND		25.0	25.7		ug/L		103	69 - 150	1	32
Iodomethane	ND		25.0	25.8		ug/L		103	53 - 150	1	35
Isopropylbenzene	ND		25.0	27.3		ug/L		109	80 - 146	0	32
m-Xylene & p-Xylene	ND		25.0	26.6		ug/L		106	58 - 138	0	29
Methylene Chloride	ND		25.0	25.0		ug/L		100	55 - 133	0	35
Methyl tert-butyl ether	ND		25.0	25.6		ug/L		103	67 - 138	1	21
Naphthalene	ND		25.0	26.8		ug/L		107	67 - 146	3	29
n-Butylbenzene	ND		25.0	26.5		ug/L		106	69 - 140	1	32
N-Propylbenzene	ND		25.0	26.8		ug/L		107	74 - 140	1	32
o-Xylene	ND		25.0	27.1		ug/L		108	66 - 137	0	26
4-Isopropyltoluene	ND		25.0	26.5		ug/L		106	70 - 133	2	32
sec-Butylbenzene	ND		25.0	27.6		ug/L		110	72 - 136	1	33
Styrene	ND		25.0	25.6		ug/L		103	43 - 144	1	35
Tetrachloroethene	ND		25.0	26.6		ug/L		106	67 - 131	1	31
Toluene	ND		25.0	25.5		ug/L		102	65 - 138	0	33
trans-1,2-Dichloroethene	ND		25.0	25.5		ug/L		102	62 - 131	2	35
trans-1,3-Dichloropropene	ND		25.0	25.4		ug/L		102	58 - 136	1	35
Trichloroethene	ND		25.0	26.2		ug/L		105	66 - 132	3	29
Trichlorofluoromethane	ND		25.0	27.1		ug/L		109	62 - 150	1	35
Vinyl acetate	ND		25.0	25.7		ug/L		103	47 - 150	2	35
Vinyl chloride	ND		25.0	26.4		ug/L		105	55 - 146	4	35
Xylenes, Total	ND		50.0	53.7		ug/L		107	68 - 131	0	31

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 550-39296-A-1 MSD
Matrix: Water
Analysis Batch: 55920

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

GC/MS VOA

Analysis Batch: 55920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-39296-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
550-39296-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
550-39301-1	MW-8A	Total/NA	Water	8260B	
550-39301-2	MW-11A	Total/NA	Water	8260B	
550-39301-3	MW-26	Total/NA	Water	8260B	
550-39301-4	trip Blank	Total/NA	Water	8260B	
LCS 550-55920/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 550-55920/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 550-55920/5	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Client Sample ID: MW-8A
Lab Sample ID: 550-39301-1
Date Collected: 01/30/15 12:25
Matrix: Water
Date Received: 01/31/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	55920	02/10/15 06:00	RPV	TAL PHX

Client Sample ID: MW-11A
Lab Sample ID: 550-39301-2
Date Collected: 01/30/15 11:50
Matrix: Water
Date Received: 01/31/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	55920	02/10/15 06:33	RPV	TAL PHX

Client Sample ID: MW-26
Lab Sample ID: 550-39301-3
Date Collected: 01/30/15 11:15
Matrix: Water
Date Received: 01/31/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	55920	02/10/15 07:05	RPV	TAL PHX

Client Sample ID: trip Blank
Lab Sample ID: 550-39301-4
Date Collected: 01/30/15 11:15
Matrix: Water
Date Received: 01/31/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	55920	02/10/15 01:32	RPV	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Certification Summary

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0728	06-09-15

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: URS Corporation
Project/Site: Chevron Isleta

TestAmerica Job ID: 550-39301-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PHX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

065249
39301

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
602.437.3340

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Dale Flores	Site Contact: Eddie Hobbs	Date: 1/30/15	COC No:
Company Name: ALCOM Fax:	Tel/Fax: 575-835-7526	Lab Contact: "	Carrier: Fed Ex	1 of 1 COCs
Address: 6501 Americas Pkwy suite 900	Analysis Turnaround Time			Sampler:
City/State/Zip: Albuquerque, NM 87110	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 505-855-7500	TAT if different from Below _____			Walk-in Client:
Fax: 505-855-7555	☐ 2 weeks			Lab Sampling:
Project Name: Chevron Isleta	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
PO# 2437335.00003	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y / N)	8260 VOC's	Sample Specific Notes:
MW-8A	1/30/15	1225	G	water	3			X	-01
MW-11A	1/30/15	1150	G	water	3			X	-02
MW-26	1/30/15	1115	G	water	3			X	-03
trip Blank					1			X	-04

550-39301 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

2.3°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
		1/30/15 1725			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 1-31-15 1003

Login Sample Receipt Checklist

Client: URS Corporation

Job Number: 550-39301-1

Login Number: 39301

List Number: 1

Creator: Doerr, Bret C

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

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AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 45,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of $6 billion.

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One Park Square
6501 Americas Parkway, N.E., Suite 900
Albuquerque, NM 87110