Submitted to:
Mike Timmer

NMED PSTB
121 Tijeras Avenue NE,
Suite 1000
Albuquerque, NM 87102

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

December 2017

2017/2018 1st Quarter Groundwater Monitoring Report:

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

NMED PSTB Facility No. 30681
NMED PSTB Deliverable ID# 3918-1

Table of Contents

List of Tables

List of Figures

List of Graphs

List of Appendices

2017/2018 1st QUARTER GROUNDWATER MONITORING REPORT

Site Name:	Chevron Isleta
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:	November 2017

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

Edward C

Edward Hubbert

Project Manager

1 Introduction

This report describes the sampling activities and results from the groundwater monitoring event that was performed on October 26, 2017 at the Chevron Isleta site in Albuquerque, New Mexico.

1.1 **Background**

The Chevron Isleta Site (Site) is located at 3401 Isleta Boulevard southwest 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 1995. The last sampling event at the Site was performed in October 2015. 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 (Haller & Associates, Inc., 2014). Currently there are three active monitor wells at the Site (MW-8A, MW-11A, and MW-26) (Figure 2).

Dissolved benzene and total naphthalenes were found in groundwater above New Mexico Water Quality Control Commission (NMWQCC) groundwater standards during the last monitoring event in October 2015 (AECOM, 2015). The benzene concentration from monitor well MW-8A exceeded the NMWQCC groundwater standard of 10 micrograms per liter (µg/L) with a concentration of 60 µg/L. Total naphthalenes concentrations in monitor wells MW-8A and MW-11A exceeded the NMWQCC groundwater standard (30 µg/L) with a concentrations of 86 and 45.7 µg/L, respectively. Historically, depth to water at the Site averages approximately 7.37 feet below top of casing (toc) and groundwater flow has been consistently to the south.

1.2 **Scope of Work**

This 2017/2018 1st Quarter Groundwater Monitoring Report was completed in accordance with the work plan prepared by AECOM (formerly URS Corporation) and submitted to the New Mexico Environment Department Petroleum Storage Tank Bureau (NMED-PSTB) on October 11, 2017. The work plan approval letter was received from the NMED-PSTB on October 17, 2017.

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

- Location and evaluation of conditions of three existing monitor wells
- Gauging, purging, and sampling of three monitor wells

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 6.36 feet below toc.

2 Previous Groundwater Monitoring Event

The previous groundwater monitoring event was performed on October 30, 2015 during which it was determined that groundwater flowed to the south at a gradient of 0.0004 foot/foot (ft/ft). Groundwater was observed at an average depth of 6.59 ft below top of casing (btoc).

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 dissolved benzene and total naphthalenes standards at concentrations of 60 µg/L and 86 µg/L, respectively.
- The groundwater sample from MW-11A exceeded NMWQCC standard for total naphthalenes at a concentration of 45.7 µg/L. Dissolved benzene was detected (2.9 µg/L) but at a concentration below the NMWQCC standard of 10 µg/L.
- Between July 2015 and October 2015, water levels rose by an average of 0.01 ft.

3 Groundwater Monitoring Activities

3.1 Fluid Level Measurements

On October 26, 2017, 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 rose by an average of 0.23 ft and were at a historic high. Groundwater flowed at an approximate gradient of 0.0007 ft/ft (see calculation below) to the south (Figure 3), relatively consistent with historic conditions. Historic fluid level data are summarized in Table 1.

Hydraulic Gradient Calculation

MW-8A groundwater elevation = 4853.58
MW-26 groundwater elevation = 4853.36
Distance between MW-8A and MW-26 = 325 feet

(4853.58-4853.36)/325 = 0.22/325 = **0.0007 ft/ft**

3.2 Groundwater Sampling and Analyses

During the groundwater monitoring event performed on October 26, 2017, groundwater samples were collected from monitor wells MW-8A, MW-11A, and MW-26.

After monitor well gauging was completed, an initial set of field parameters were collected using a calibrated Horiba U-52 water parameter probe. After initial 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 well volume 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.

On October 26, 2017, AECOM personnel delivered the samples to Hall Environmental Analysis Laboratory (HEAL), directly from the field, before they cooled to the 4 ˚C preservation temperature. Complete chain-of-custody records accompanied groundwater samples at all times. Each groundwater sample was analyzed by the following Environmental Protection Agency (EPA) Method:

Chevron Isleta Groundwater Analytical Requirements

Analysis	Analytical Method	Container / Preservation
Volatile Organic Compounds	EPA 8260B	3x40 ml, $HgCl_2$, 4˚C

Notes: $HgCl_2$ – mercuric chloride, ml – milliliter

Historic and recent groundwater analytical data are summarized in Table 2. Groundwater sampling procedures are attached as Appendix A. Groundwater field sampling forms are attached as Appendix B. The laboratory report from HEAL is attached as Appendix C.

3.3 Discussion of Trends and Changes

On October 26, 2017, water levels were at their historic highs. Since October 2015, water levels have risen by an average of 0.23 ft (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 – From August 2012 to October 2017, dissolved benzene and total naphthalenes have exceeded NMWQCC standards at MW-8A with concentrations ranging from10 to 100 µg/L and 21 to 1,300 µg/L, respectively. Toluene, ethylbenzene and total xylenes have not exceeded their respective NMWQCC standards since at least January 2015, although they are consistently detected.

Between the October 2015 and October 2017 sampling events, the dissolved benzene concentration decreased from 60 to 21 µg/L. During the same period, the total naphthalenes concentration increased from 86 to 122 µg/L. Both contaminants of concern at MW-8A have exhibited a generally decreasing trend over time with intermittent periods of seasonal rebound (Graph 1).

MW-11A – Since August 2012, dissolved benzene concentrations have exceeded the NMWQCC standard three times, and dissolved naphthalenes have consistently exceeded the NMWQCC standard ranging from 40.5 to 1,060 µg/L. Between the October 2015 and October 2017 sampling events, dissolved benzene at MW-11A decreased from 2.9 to <1.0 µg/L. The total naphthalenes concentration (120 µg/L) increased from the October 2015 concentration (45.7 µg/L) and continues to exceed the NMWQCC standard of 30 µg/L (Graph 2). Both contaminants of concern at MW-11A have exhibited a generally decreasing trend over time with intermittent periods of seasonal rebound.

MW-26 – During the October 2017 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, but have not migrated underneath Rio Bravo Boulevard to MW-26. Historic and recent groundwater analytical data indicate that the plume is generally shrinking over time (Figure 5).

4 Summary and Conclusion

Groundwater elevations at the Site have risen by an average of approximately 0.23 ft since October 2015 and are at their historical high (Table 1). On October 26, 2017, dissolved benzene and total naphthalenes were the only remaining contaminants that exceed NMWQCC standards at the Site. Contaminant concentration trends indicate there may still be contaminant loading from remaining adsorbed phase hydrocarbons in the vicinity of MW-8A (Table 2). It appears that the remediation efforts performed prior to 2005 have greatly reduced the contaminant source and natural attenuation has been occurring site wide.

During this event, with groundwater elevations at their historic high, benzene concentrations continued to decline and total naphthalenes concentrations increased. Contaminant concentrations are generally declining over time at the site.

5 Recommendations

Available dissolved oxygen and positive oxidation reduction potential (Appendix B), outside 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 generally decreasing over time.

Adsorbed phase hydrocarbon contamination in the vadose zone directly above the water table appears to persist as a source of groundwater contamination, especially during periods of rising water levels. While an injection application near MW-8A may be an effective means to reduce contaminant concentrations, both economical and logistical factors are prohibitive.

Therefore, based on the data and observations found in this report and correspondence with NMED-PSTB personnel, AECOM recommends continued groundwater monitoring of natural attenuation parameters and contaminant concentrations at the site. Remedial action is not recommended.

6 References

AECOM 4th Quarter Groundwater Monitoring Report Chevron Isleta PSTB # 30681, 3401 Isleta Boulevard, Albuquerque, New Mexico, November 2015

AECOM 3rd Quarter Groundwater Monitoring Report Chevron Isleta PSTB # 30681, 3401 Isleta Boulevard, Albuquerque, New Mexico, August 2015

AECOM 2nd Quarter Groundwater Monitoring Report Chevron Isleta PSTB # 30681, 3401 Isleta Boulevard, Albuquerque, New Mexico, June 2015

AECOM 1st Quarter Groundwater Monitoring Report Chevron Isleta PSTB # 30681, 3401 Isleta Boulevard, Albuquerque, New Mexico, March 2015

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

AECOM, Work Plan Submittal for Chevron Isleta (Facility ID No. 30681), Albuquerque, New Mexico, Professional Services Contract # 14-667-2000-0032, October 2017

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 (ft msl)	Depth to NAPL (ft)	Depth to Groundwater (ft btoc)	NAPL Thickness (ft)	Groundwater Elevation (ft msl)
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
	4/29/2015		---	7.68	---	4852.85
	7/20/2015		---	7.20	---	4853.33
	10/30/2015		---	7.21	---	4853.32
	10/26/2017		---	6.95	---	4853.58
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
	4/29/2015		---	6.87	---	4852.82
	7/20/2015		---	6.32	---	4853.37
	10/30/2015		---	6.31	---	4853.38
	10/26/2017		---	6.08	---	4853.61

--- not detected
btoc - below top of casing
ft - feet
msl - mean sea level
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 (ft msl)	Depth to NAPL (ft)	Depth to Groundwater (ft btoc)	NAPL Thickness (ft)	Groundwater Elevation (ft msl)
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
	4/29/2015		---	6.75	---	4852.66
	7/20/2015		---	6.28	---	4853.13
	10/30/2015		---	6.24	---	4853.17
	10/26/2017		---	6.05	---	4853.36

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

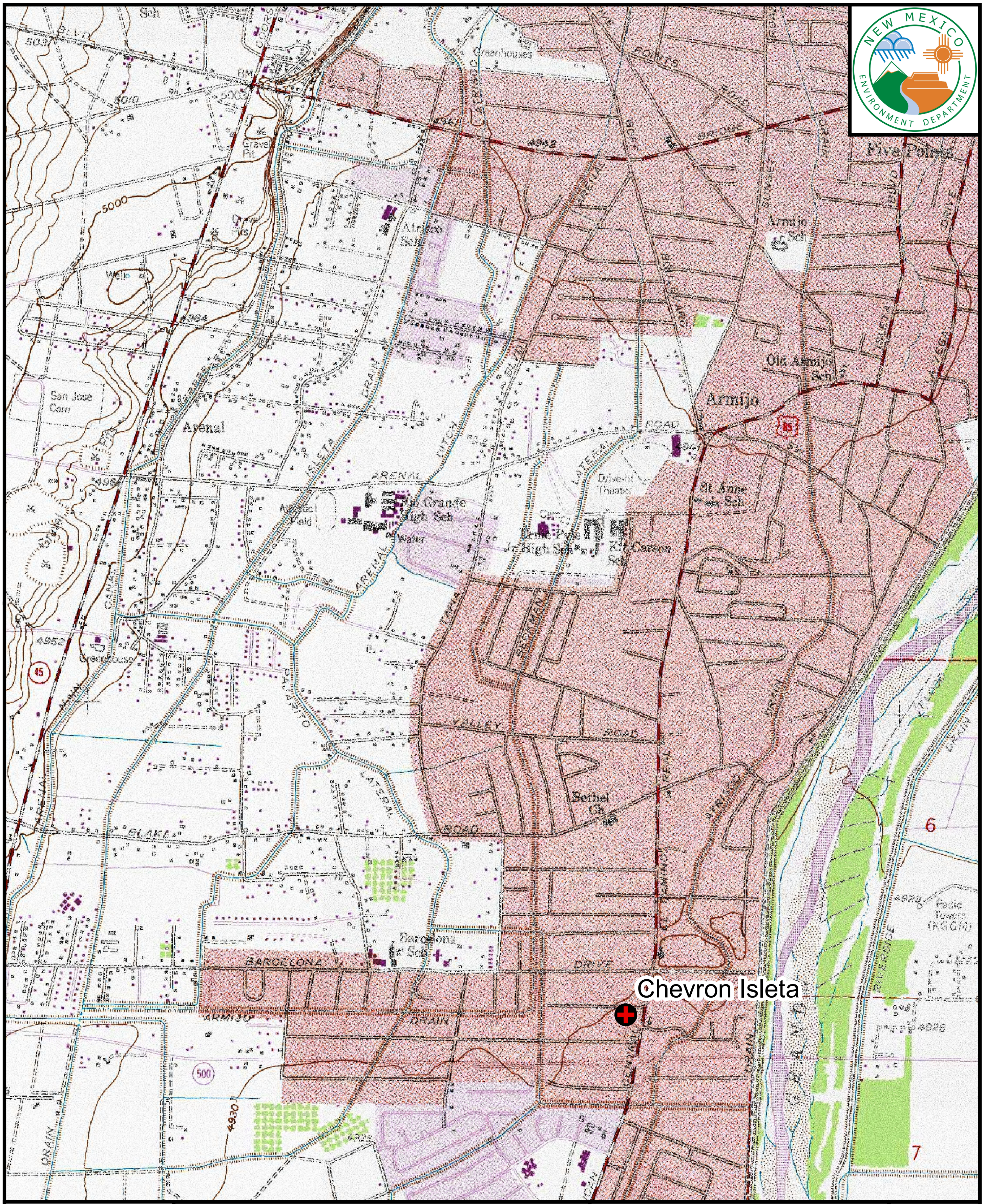
Table 2. Groundwater Organics Results
Chevron Isleta (NMED-PSTB Facility # 30681)
3401 Isleta Boulevard SW, Albuquerque, New Mexico

Well ID	Sample Date	Benzene	Toluene	Ethylbenzene	Xylenes	Ethylene Dibromide	Ethylene Dichloride	Methyl Tert Butyl Ether	Total Naphthalenes
NMWQCC/EIB Standards (µg/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
	4/29/2015	100	14	110	200	<1.0	<1.0	<1.0	195
	7/20/2015	85	7.0	53	120	<1.0	<1.0	<1.0	185
	10/30/2015	60	3.8	53	83	<1.0	<1.0	<1.0	86
	10/26/2017	21	4.3	32	30	<1.0	<1.0	<1.0	122
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
	4/29/2015	13	1.3	27	15	<1.0	<1.0	<1.0	86
	7/20/2015	6.6	1.1	7.1	3.9	<1.0	<1.0	<1.0	106
	10/30/2015	2.9	<1.0	3.4	<1.5	<1.0	<1.0	<1.0	45.7
	10/26/2017	<1.0	<1.0	5.4	<1.5	<1.0	<1.0	<1.0	120
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
	4/29/2015	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<10.0
	7/20/2015	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<10.0
	10/30/2015	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<10.0
	10/26/2017	<1.0	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<10.0

µg/L - micrograms per liter
BDL - below detection limit
NA - not analyzed
NAPL - non-aqueous phase liquid
NMWQCC - New Mexico Water Quality Control Board
EIB - Environmental Improvement Board

Data presented in bold exceeds NMWQCC/EIB standards

Figures



AECOM

6501 Americas Pkwy NE
Suite 900
Albuquerque, NM 87110

N

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 Pkwy NE
Suite 900
Albuquerque, NM 87110

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

1 inch = 60 feet

SITE MAP

CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 2

AECOM
6501 Americas Pkwy 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

WATER TABLE MAP
CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

FIGURE 3

Gauging Date
10/26/2017

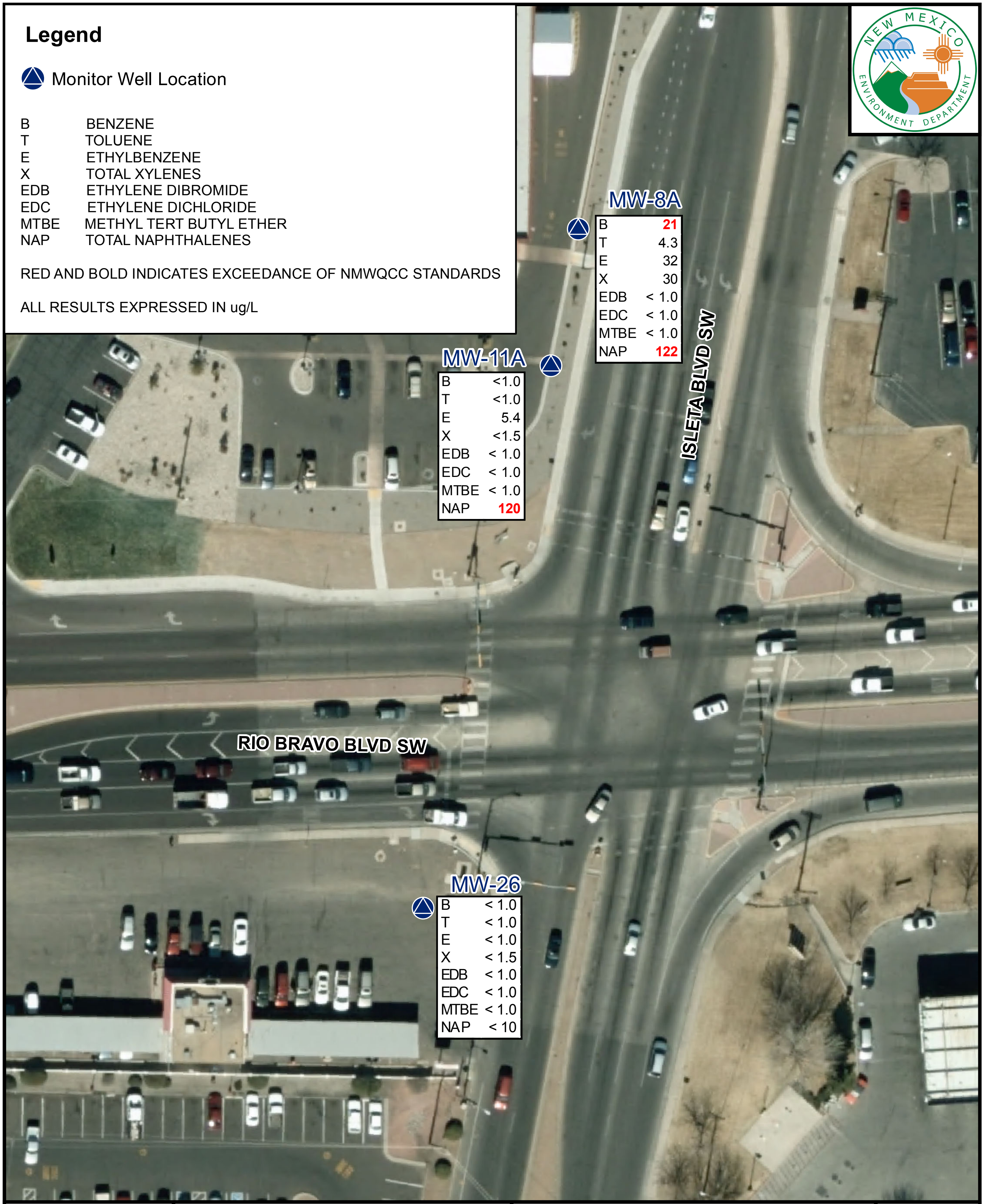
Legend

▲ Monitor Well Location

B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
EDB	ETHYLENE DIBROMIDE
EDC	ETHYLENE DICHLORIDE
MTBE	METHYL TERT BUTYL ETHER
NAP	TOTAL NAPHTHALENES

RED AND BOLD INDICATES EXCEEDANCE OF NMWQCC STANDARDS

ALL RESULTS EXPRESSED IN ug/L



MW-8A

B	**21**
T	4.3
E	32
X	30
EDB	< 1.0
EDC	< 1.0
MTBE	< 1.0
NAP	**122**

MW-11A

B	<1.0
T	<1.0
E	5.4
X	<1.5
EDB	< 1.0
EDC	< 1.0
MTBE	< 1.0
NAP	**120**

MW-26

B	< 1.0
T	< 1.0
E	< 1.0
X	< 1.5
EDB	< 1.0
EDC	< 1.0
MTBE	< 1.0
NAP	< 10

AECOM
6501 Americas Pkwy 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

Sample Date
10/26/2017

AECOM

6501 Americas Pkwy NE
Suite 900
Albuquerque, NM 87110

N

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

DISSOLVED NAPHTHALENES MAP

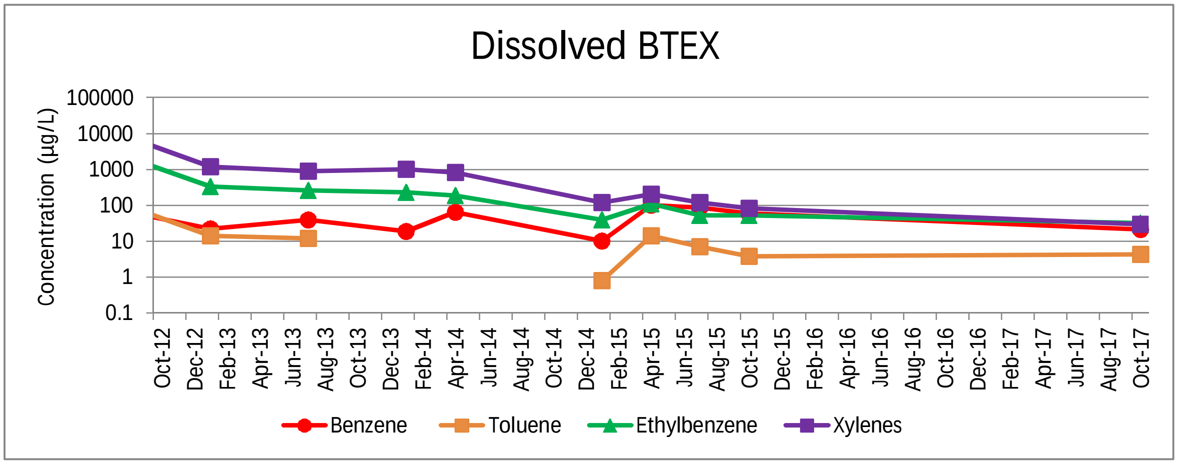
CHEVRON ISLETA
3401 ISLETA BOULEVARD SW
ALBUQUERQUE, NM

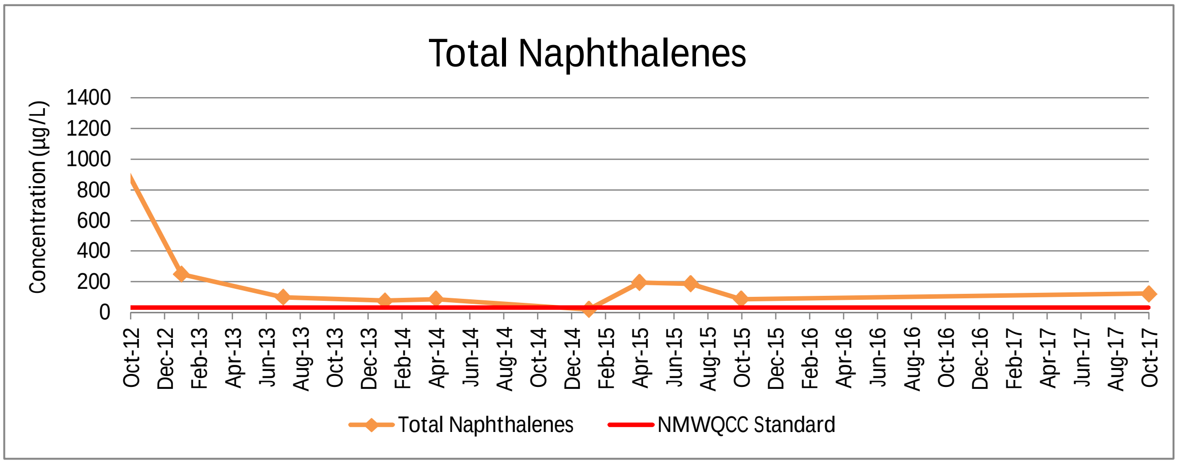
FIGURE 5

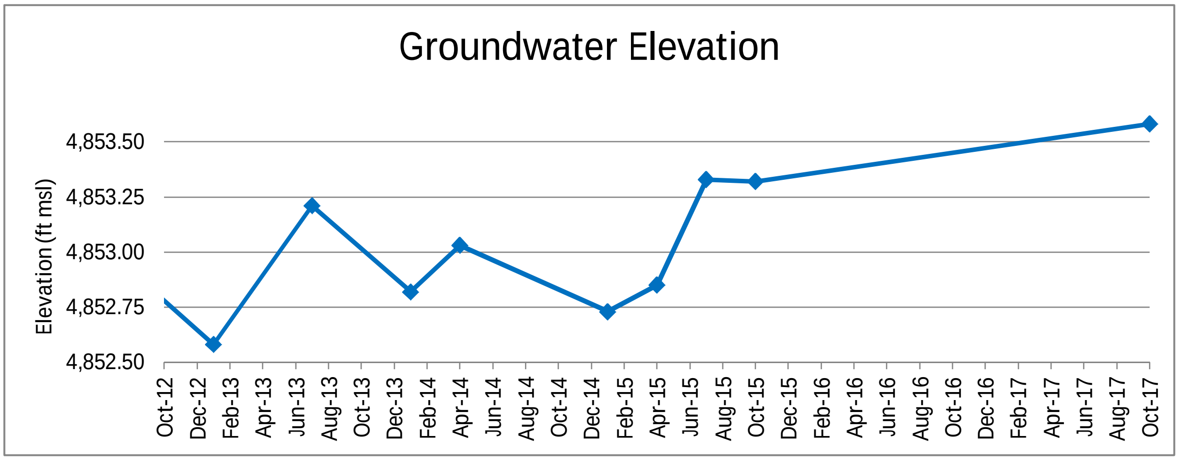
Sample Date
10/26/2017

Graphs

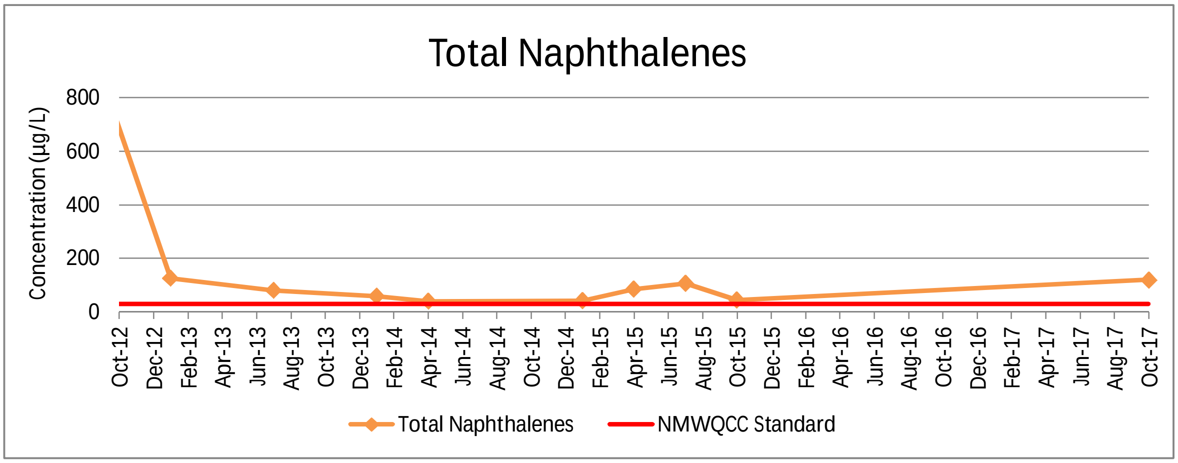
Graph 1
MW-8/MW-8R/MW-8A Dissolved BTEX and Naphthalenes Concentrations Vs Time
Chevron Isleta Site, Albuquerque, New Mexico

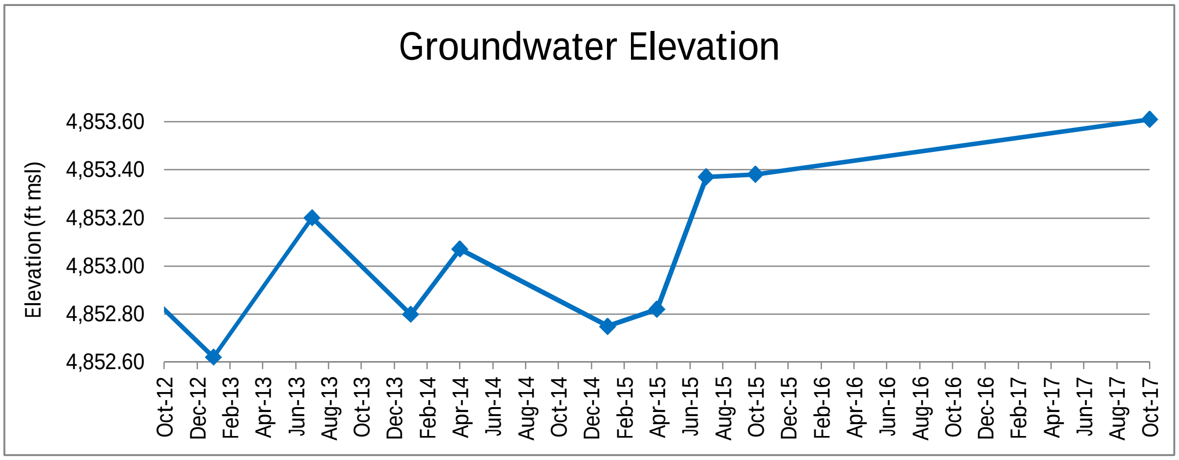






Graph 2
MW-11/MW-11R/MW-11A Total Naphthalenes Concentrations Vs Time
Chevron Isleta Site, Albuquerque, New Mexico





Appendix A. Groundwater Sampling Procedures

This Standard Operating Procedure (SOP) details the procedures for decontamination of personnel and equipment during field activities. Decontamination of personnel and equipment (e.g., water and soil sampling equipment, vehicles, etc.), is required to minimize the possibility of cross-contamination of environmental samples between sampling locations. In addition to this SOP, refer to the site-specific Health and Safety Plan (HASP) for additional requirements regarding decontamination procedures.

1.0 EQUIPMENT

The following is a list of equipment that may be necessary to perform decontamination activities:

- Personal protective equipment (PPE) as outlined in the HASP
- Paper towels
- Alconox® / Liquinox® detergent (or equivalent)
- Potable or non-potable water
- Deionized or distilled water
- Water sprayers or hand-held spray bottles
- Disposable nitrile gloves
- Clean plastic sheeting, and/or trash bags

2.0 DECONTAMINATION PROCEDURES

Section 2 describes decontamination of sampling equipment that may be utilized to prevent cross-contamination between sampling locations. Decontamination procedures to be implemented for the protection of worker and public health, safety, and the environment are also set forth in the following section. Different types of decontamination may be necessary for the following:

- Soil sampling equipment;
- Water sampling equipment;
- Instruments; and
- Vehicles and personnel.

2.1 DECONTAMINATION OF SAMPLING EQUIPMENT

The procedures in this section are designed to prevent cross-contamination of samples collected in different sample locations. Procedures for decontamination of sampling equipment apply to equipment that is re-usable (e.g. funnels and shovels) and contacts a sampled medium (e.g., water). Decontamination of sampling equipment may be performed at each sample collection location upon completion of sampling.

General requirements for decontamination are listed below:

- Personnel may wear appropriate safety equipment to reduce personal exposure, as required by the HASP.
- New nitrile gloves may be worn when performing equipment decontamination.
- Detergent and rinse solutions to be used for decontamination procedures may be replaced with new solutions between sample collection events unless the solution is stored in a water sprayer.
- Bulk contamination, such as large pieces of soil, may first be removed by hand or tools.
- Equipment may then be washed in a detergent/water solution, using brushes and other tools, as appropriate, until clean. The water used may be clean and may be potable, non-potable, deionized, or distilled.
- Washed equipment may be rinsed first by potable water, or by deionized/distilled water, if potable water is not available.
- A final rinse may be by deionized or distilled water.
- Equipment may be inspected for visible contamination and washed again if necessary.
- Equipment may be dried and stored in a clean location. Air-drying is an acceptable method for most equipment.

2.2 DECONTAMINATION OF PERSONNEL

The procedures in this section are designed to protect the worker and public health, safety, and the environment. Procedures for decontamination of personnel apply to any person (including clothing) who is exposed to contaminated site material such as groundwater or soil. Decontamination of personnel may be performed prior to leaving the site, or as necessary to protect health and safety.

General requirements for decontamination are listed below:

- Personnel may wear appropriate safety equipment to reduce personal exposure, as required by the HASP.
- Bulk contamination, such as large pieces of soil, may first be removed by hand or tools, with special attention to boots and coveralls.
- Personnel and clothing may then be washed with a detergent/water solution, using brushes and other tools, as appropriate, until clean. The water used may be clean and may be potable, non-potable, deionized, or distilled.
- Following washing, a water rinse may be conducted to flush contaminated media and detergents from the affected area.

2.3 DECONTAMINATION OF VEHICLES

The procedures in this section are designed to protect the worker and public health, safety, and the environment. Procedures for decontamination of vehicles apply to any vehicle or piece of heavy equipment that is exposed to contaminated site material such as groundwater or soil. Decontamination of vehicles may be performed prior to leaving the site, or as necessary to protect health and safety.

General requirements for decontamination are listed below:

- Personnel may wear appropriate safety equipment to reduce personal exposure, as required by the HASP.
- Bulk contamination, such as large pieces of soil, may first be removed by hand or tools, with special attention to tires or tracks, wheel-wells, and compartments such as dump truck beds and excavator or backhoe buckets.
- A rinse with water may be conducted to flush contaminated media from the affected area. If necessary, a high-pressure washer and/or detergent solution may be used to remove contaminated media.

2.4 INVESTIGATION DERIVED WASTE MANAGEMENT

Solid and liquid IDW generated during decontamination procedures may be managed as described in the SOP for IDW.

Solid IDW generated during decontamination procedures may consist of: (1) PPE used during the decontamination process and (2) disposable material used to decontaminate equipment.

Liquid IDW may generally consist of wash/rinse water, and may contain a substantial amount of solids. It is permissible, after solids settle, to decant clear water from such a container to another IDW container, thus separating solid and liquid IDW.

3.0 DOCUMENTATION

Sampling personnel may document the decontamination that occurs within a sample collection site in the field log book. The information entered in field log books concerning decontamination may include the following:

- Decontamination personnel
- Date/time
- Location
- Type of containment for decontamination fluids
- Other pertinent information

This Standard Operating Procedure (SOP) provides technical guidance and methods that will be used for monitoring well purging and groundwater sampling using low-flow sampling methods. The samples will be analyzed to provide data on the presence and concentration of Site constituents in groundwater on the site. The procedures outlined in this SOP are accordance with groundwater sampling methods recommended by the U.S. Environmental Protection Agency (EPA) (1992, 1996). Details on site-specific sampling activities, equipment selection (i.e., pumps), site-specific field parameters, and laboratory analyses are presented in the Work Plan and/or the Quality Assurance Project Plan (QAPP).

This SOP will provide descriptions of equipment, field procedures, and documentation necessary to properly collect groundwater samples for laboratory analysis. Sampling locations are specified and shown in the Work Plan.

All activities will be conducted in accordance with the site-specific Health and Safety Plan (HASP).

1.0 EQUIPMENT AND MATERIALS

- Field log book
- Electronic water level indicator or interface probe
- Peristaltic pump, bladder pump, centrifugal pump, bailer, or submersible pump
- Appropriate power source and cords for pump (i.e., generator, compressor, or inverter)
- Flow-rate controller for pump, as applicable
- Graduated cylinder or other volumetric measuring device
- Plastic sheeting or other clean work surface
- Disposable polyethylene discharge tubing
- Disposable Pharmed®, Tygon®, or equivalent tubing (for peristaltic pump only)
- Water quality meters (at a minimum pH, conductance, and temperature; ORP, and turbidity may also be used)
- New disposable or decontaminated stainless-steel bailer, if specified in the Work Plan
- Rope or twine: nylon, polypropylene, or similar
- Watch
- Purge water collection system (bucket(s) with lid(s), drum, etc.)
- Standard hand tools (wrench, pliers, screwdrivers, cutting tools, etc.)
- Keys to well locks
- Decontamination equipment per SOP 2
- Appropriate health and safety equipment as required by the HASP
- Personal protective equipment (PPE) as required by the HASP
- Paper towels

- Copies of well drilling and installation records, including boring logs and well completion diagrams for the wells to be sampled
- 0.45-µm in-line filter or other appropriate filtering approaches (for dissolved constituents only), if applicable
- Flow-through cell
- Sample containers (including temperature blanks)
- Sample labels
- Sample logs / well sampling forms
- Chain of custody forms
- Custody seals
- Shipping labels / AirBills
- Strapping / shipping tape
- Garbage bags
- Ziploc®, or similar, bags
- Cooler(s)
- Ice

2.0 PURGING AND SAMPLING METHODOLOGY

Groundwater sampling incorporates several phases of multiple steps in order to achieve the highest possible accuracy and precision of laboratory analytical results. Proper preparation, purging, and sampling techniques greatly reduce the risk of cross-contamination or other unwanted variances of the analytical data. Where possible, sampling should be conducted first in areas least affected by Site constituents, followed by increasingly affected areas. The proper information will be recorded in the field log book or well sampling form as specified in Section 3 of this SOP.

2.1 PREPARATION FOR SAMPLING

Preparation for sampling includes inspecting the condition of the well, monitoring health and safety conditions, and calibrating and decontaminating sampling equipment. General procedures are presented below:

1. Make sure area around well head is clean and free of debris.
2. Inspect condition of well (e.g., well locked, loose-fitting cap, measuring point well marked, surface casing disturbed, well casing straight, condition of concrete pad). Indicate condition of well on the sampling form.
3. Remove well cap. If the HASP identifies organic compounds as potential contaminants of concern and requires breathing zone monitoring, screen well headspace and breathing zone headspace for organic vapors using the appropriate field monitoring instrument.

4. All equipment should be decontaminated in accordance with SOPs before introduction to each well. Protective latex or nitrile gloves should be worn during possible water-contact or equipment-contact activities. At a minimum, gloves should be changed between each well or when introduction of potential contaminants to the well is possible.
5. Measure water level using a decontaminated electronic water level meter as described in SOPs. Sounding the bottom of the well using a weighted tape (i.e., for well casing volume calculations) prior to sampling is not recommended due to the potential for resuspension of settled solids in the formation. Well depth information should be obtained from the well logs or collected after sampling activities are complete, if possible.
6. If light non-aqueous phase liquid (LNAPL) is suspected, measure fluid level in accordance with SOPs.
7. Calculate the well casing volume as follows:

   $$\text{well casing volume (gal)} = \pi\,(r^{2})(h)(7.48\ \text{gal/ft}^{3})$$

   Where h = height of water in the well casing (i.e., depth to bottom of the well minus depth to water (in ft), and r = radius of well casing in feet. Record this volume on the well sampling form.
8. Calibrate water quality meters for measuring field parameters as specified by the equipment manufacturer(s). At a minimum, temperature, pH, and specific conductance measurements will be collected during purging and prior to sampling; however, do not immerse water quality meter probes into purge water containing free product. Other field parameters, including dissolved oxygen, Eh (redox, ORP), and turbidity (recommended for inorganics), etc. may be required as specified in the Work Plan. Record equipment calibration and maintenance in the field book. Decontaminate meters between wells by rinsing with distilled water. Manage rinse water used for these measurements in the same manner as purge water, as defined in the Work Plan.

2.2 WELL PURGING METHODS

Monitoring wells will be purged prior to collecting groundwater samples for analyses. Low flow purging procedures (EPA 1996) generally will be followed; however, certain wells or sites may also be sampled by purging three well volumes of groundwater prior to sample collection. The purpose of well purging is to remove stagnant groundwater from the well (which has interacted with air in the well casing). Field parameters (i.e., pH, temperature, and specific conductance) are measured during the purging process to verify that stagnant water has been removed and groundwater conditions are stable prior to sampling. A variety of pumps may be used to purge and sample the monitoring well: the pump type will be specified in the Work Plan. Refer to the manufacturer's instructions for operation of the specified pump. General procedures for purging are outlined below:

1. Lower the pump intake, bailer, or tubing (as applicable) into the water column. The pump intake or tubing should be placed at the middle or slightly above the bottom of the screened interval.
2. For low-flow purging, conduct purging at a rate that will minimize drawdown in the well (i.e., purge at a rate less than or equal to recharge, if possible). Recommended purge

rates are generally less than 0.13 gal/min (0.5 L/min), or a rate that results in minimal drawdown in the well (e.g., less than 1 foot). Actual purge rates will vary based on aquifer material and well construction.

3. Continue purging the well until field parameters have stabilized within 10 percent, according to SOPs. Once field parameters have stabilized, reduce the pump rate to approximately 0.025 to 0.13 gal/min (0.1 L/min to 0.5 L/min). The pump should continue to operate at the lower rate to allow the water collected at that rate to travel to the surface discharge point.
4. In the event that even very low purge rates result in evacuation of the well, groundwater samples for laboratory analyses should be collected as soon as sufficient groundwater accumulates in the well, regardless of field parameters or total volume purged.
5. If the three-volume purge method is utilized, field parameters will be recorded after each well volume of groundwater is purged.

2.3 GROUNDWATER SAMPLING METHODS

Groundwater sampling is conducted following purging of the well. Where possible, groundwater samples for analyses should be collected directly from the pump discharge at the lowest rate possible to minimize cross contamination, suspension of solids, and aeration of the sample. Bladder pumps, peristaltic pumps, and submersible pumps (e.g. Grundfos®, Whale, Typhoon) are generally suitable for purging and sampling of all groundwater parameters. Bailers are generally not recommended for purging or sampling of groundwater monitoring wells due to the potential for agitating solids in and adjacent to the well; however, the three-volume purge method often uses bailers, especially when turbidity of the groundwater is not a concern.

Target analytes, container types, and preservatives are specified in the Work Plan, or QAPP.

The general procedures for groundwater sample collection are as follows:

1. Groundwater samples should be introduced directly from the pump discharge into the proper sample container and filled to capacity.
2. In general, groundwater samples collected for multiple compounds should be collected in the following order (EPA 1992):
   - VOCs
   - Dissolved gases and total organic carbon (TOC)
   - SVOCs
   - Metals and cyanide
   - Major water quality cations and anions
   - Radionuclides
   - Other analytes
3. When collecting samples for VOCs, direct flow from the pump discharge down the interior side of the sample container to minimize aeration. Hold caps in hand to minimize contamination of sample. Fill all VOC sample containers to the top. A

positive meniscus at the top of the container will help ensure that no air is trapped inside when cap is screwed down on the container. No air bubbles should be trapped in the sample when the container is sealed.

4. In some cases, field filtration may be required (recommended for dissolved metals). If applicable, attach a new, disposable filter cartridge (typically 0.45 μm) to the discharge line. Filtered water should be introduced directly into the appropriate sample container. Alternate field filtration methods may be specified in the Work Plan or QAPP. *Although not recommended, the laboratory can sometimes filter the samples if the samples are NOT preserved and are filtered within 24–48 hours of collection.*
5. Collect quality assurance and quality control (QA/QC) samples (i.e., field duplicate, laboratory matrix spike, and laboratory matrix spike duplicate, as applicable) at the same time by filling all bottles from the same flow. Ambient or field blanks should be filled using distilled or de-ionized (DI) water (supplied by the laboratory) in the same area as the primary samples. The number and types of QA/QC samples are specified in the Work Plan or QAPP.
6. Sample bottles must be labeled with date, sample number, time, sampler's name, and type of preservative, as described in the QAPP. Sample bottles must be placed in a cooler or on ice to keep the sample cool (≤6 °C). Samples must be cooled continuously from time of collection to time of receipt at the laboratory.
7. Disconnect the peristaltic pump from the dedicated tubing in the well. If using a submersible pump, remove the pump and tubing from the well. Close and lock the well. Decontaminate the sampling equipment in accordance with SOPs. Purge, wash, and rinse water should be managed as specified in the Work Plan.
8. Complete chain-of-custody forms, package samples for shipment, and ship samples or arrange for courier to laboratory.
9. All field observations made and data generated in conjunction with the sample collection will be documented on the groundwater field sampling form.

3.0 DOCUMENTATION

Documentation during well purging and sampling will be in accordance with the work plan. Documentation of the observations and data acquired in the field will provide information on the activities conducted and also provide a permanent record of field activities. Observations and data will be recorded on a well sampling form and in the field logbook.

3.1 FIELD NOTES

The following groundwater purging and sampling information will be recorded in a bound field logbook using indelible ink:

- Names of sampling personnel
- Weather conditions
- Date and time of sampling
- Sampling locations, including locations of QA/QC samples

- Start and stop time for each well sampled
- Decontamination and calibration records
- Other information as specified in the Work Plan
- Any other pertinent information that may have a bearing on sample quality

3.2 FIELD FORMS

A well sampling form will be completed for each well sampled. The following information will be recorded:

- Project name / number
- Location
- Date
- Sampling personnel
- Monitoring well identification number
- Static water depth
- Well depth and diameter
- Water column thickness and well volume, if necessary
- Depth of pump or tubing intake
- Time of purge monitoring readings
- Sample time
- Identification of QA/QC samples
- Sampling equipment (pump and tubing types, etc.)
- Sampling pump rate

4.0 REFERENCES

EPA. 1992. RCRA Ground-Water Monitoring: Draft Technical Guidance. Office of Solid Waste, Washington, DC EPA/530/R-93/001, NTIS PB 93-139350, November.

EPA. 1996. Low-flow (minimal drawdown) ground-water sampling procedures, by R.W. Puls and M.J. Barcelona. U.S. EPA Ground Water Issue: EPA/540/S-95/504, April.

Attachment 1

Example of Well Sampling Form

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-3 – 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

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 B. Groundwater Field Sampling Forms

AECOM

Monitor Well Gauging Form

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

Site: Chevron Isleta
Date: 10-26-17

Monitor Well	Depth to Product	Depth to Water	Total Depth	Time
MW-8A	—	6.95	14.60	1105
MW-11A	—	6.08	14.98	1030
MW-26	—	6.05	13.18	1000

Notes:

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:**	T. Grulke ~~E. Hubbert~~
Project Number:	60489550	**Sample ID:**	MW-8A
Location:	Albuquerque, NM	**Sample Date:**	10-26-17
Date:	10-26-17	**Sample Time:**	1127

Equipment

Purging Method/Equipment	bailing
Sampling Equipment	new disposable bailer
Filtering Equipment	—

Field Parameters

Initial Water Temp. (C)	24.68
Initial pH	7.31
Initial Conductance (mS/cm)	0.928

Purging Information

Casing ID (in)	2	Length of Static Water Column (ft)	7.65
Unit Casing Volume (gal/ft)	0.16	Casing Water Volume (gal)	1.22
Depth to Water (ft below TOC)	6.95	Total Purge Volume	3.75
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
0.25	24.68	7.31	0.928	-107	2.02	1118	
1.25	24.81	7.25	0.951	-118	1.29	1121	
2.50	24.89	7.22	0.958	-124	1.20	1124	
3.75	24.91	7.20	0.960	-125	1.21	1127	

Total Volumes Removed (gallons): 3.75 **Time:** 1127 **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

Grey-Cloudy water, abundant black Particles
Slight HC odor
No HC Sheen

10-26-17

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:**	J. Grulke ~~E. Hubbert~~
Project Number:	60489550	**Sample ID:**	TG ~~-MW-26~~ MW-11A
Location:	Albuquerque, NM	**Sample Date:**	10-26-17
Date:	10-26-17	**Sample Time:**	1052

Equipment

Purging Method/Equipment	bailing
Sampling Equipment	new disposable bailer
Filtering Equipment	—

Field Parameters

Initial Water Temp. (C)	23.92
Initial pH	7.29
Initial Conductance (mS/cm)	0.902

Purging Information

Casing ID (in)	2	Length of Static Water Column (ft)	8.9
Unit Casing Volume (gal/ft)	0.16	Casing Water Volume (gal)	1.4
Depth to Water (ft below TOC)	6.08	Total Purge Volume	4.5
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
0.25	23.92	7.29	0.902	-63	6.10	1042	
1.5	24.15	7.19	0.902	-89	0.0	1045	
3	24.10	7.17	0.908	-94	0.0	1049	
4.5	24.11	7.14	0.925	-93	0.0	1052	

Total Volumes Removed (gallons): 4.5 **Time:** 1052 **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 - Colorless

No HC Odor

No HC Sheen

10-26-17

AECOM

6501 Americas Pkwy
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:**	T. Grulke ~~E. Hubbert~~
Project Number:	60489550	**Sample ID:**	MW-26
Location:	Albuquerque, NM	**Sample Date:**	10-26-17
Date:	10-26-17	**Sample Time:**	1012

Equipment

Purging Method/Equipment	bailing
Sampling Equipment	new disposable bailer
Filtering Equipment	—

Field Parameters

Initial Water Temp. (C)	24.05
Initial pH:	6.50
Initial Conductance (mS/cm):	1.03

Purging Information

Casing ID (in)	2	Length of Static Water Column (ft)	7.13
Unit Casing Volume (gal/ft)	0.16	Casing Water Volume (gal)	1.14
Depth to Water (ft below TOC)	6.05	Total Purge Volume	~~T63.4~~ 3.5
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
0.25	24.05	6.56	1.03	170	2.44	1005	
1.0	24.29	6.72	1.02	151	1.04	1007	
2.0	24.14	6.83	0.960	140	0.69	1009	
3.5	24.12	6.88	0.944	135	1.02	1012	

Total Volumes Removed (gallons): 3.5 **Time:** 1012 **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 water, some black floating material

No HC odor

No HC sheen

10-26-17

Appendix C. Laboratory Analytical Report

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 01, 2017

Edward Hubbert
AECOM ABQ
6501 Americas Parkway NE Suite 900
Albuquerque, NM 87110
TEL:
FAX

RE: Chevron Isleta OrderNo.: 1710E05

Dear Edward Hubbert:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/26/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AECOM ABQ
Project: Chevron Isleta
Lab ID: 1710E05-001 **Matrix:** AQUEOUS

Client Sample ID: MW-26
Collection Date: 10/26/2017 10:12:00 AM
Received Date: 10/26/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Toluene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Ethylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Naphthalene	ND	2.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1-Methylnaphthalene	ND	4.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
2-Methylnaphthalene	ND	4.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Acetone	ND	10		µg/L	1	10/30/2017 9:21:00 PM	R46753
Bromobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Bromodichloromethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Bromoform	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Bromomethane	ND	3.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
2-Butanone	ND	10		µg/L	1	10/30/2017 9:21:00 PM	R46753
Carbon disulfide	ND	10		µg/L	1	10/30/2017 9:21:00 PM	R46753
Carbon Tetrachloride	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Chlorobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Chloroethane	ND	2.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Chloroform	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Chloromethane	ND	3.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
2-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
4-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
cis-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Dibromochloromethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Dibromomethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,1-Dichloroethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,1-Dichloroethene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,3-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
2,2-Dichloropropane	ND	2.0		µg/L	1	10/30/2017 9:21:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AECOM ABQ
Project: Chevron Isleta
Lab ID: 1710E05-001
Matrix: AQUEOUS
Client Sample ID: MW-26
Collection Date: 10/26/2017 10:12:00 AM
Received Date: 10/26/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Hexachlorobutadiene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
2-Hexanone	ND	10		µg/L	1	10/30/2017 9:21:00 PM	R46753
Isopropylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
4-Isopropyltoluene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
4-Methyl-2-pentanone	ND	10		µg/L	1	10/30/2017 9:21:00 PM	R46753
Methylene Chloride	ND	3.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
n-Butylbenzene	ND	3.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
n-Propylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
sec-Butylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Styrene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
tert-Butylbenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
trans-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Trichlorofluoromethane	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Vinyl chloride	ND	1.0		µg/L	1	10/30/2017 9:21:00 PM	R46753
Xylenes, Total	ND	1.5		µg/L	1	10/30/2017 9:21:00 PM	R46753
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	10/30/2017 9:21:00 PM	R46753
Surr: 4-Bromofluorobenzene	97.6	70-130		%Rec	1	10/30/2017 9:21:00 PM	R46753
Surr: Dibromofluoromethane	106	70-130		%Rec	1	10/30/2017 9:21:00 PM	R46753
Surr: Toluene-d8	95.8	70-130		%Rec	1	10/30/2017 9:21:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT:	AECOM ABQ	**Client Sample ID:**	MW-11A
Project:	Chevron Isleta	**Collection Date:**	10/26/2017 10:52:00 AM
Lab ID:	1710E05-002 **Matrix:** AQUEOUS	**Received Date:**	10/26/2017 12:20:00 PM

EPA METHOD 8260B: VOLATILES Analyst: **RAA**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
Benzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Toluene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Ethylbenzene	5.4	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Naphthalene	79	2.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1-Methylnaphthalene	23	4.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
2-Methylnaphthalene	18	4.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Acetone	ND	10		µg/L	1	10/30/2017 10:32:00 PM	R46753
Bromobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Bromodichloromethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Bromoform	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Bromomethane	ND	3.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
2-Butanone	ND	10		µg/L	1	10/30/2017 10:32:00 PM	R46753
Carbon disulfide	ND	10		µg/L	1	10/30/2017 10:32:00 PM	R46753
Carbon Tetrachloride	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Chlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Chloroethane	ND	2.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Chloroform	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Chloromethane	ND	3.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
2-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
4-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
cis-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Dibromochloromethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Dibromomethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,1-Dichloroethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,1-Dichloroethene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,3-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
2,2-Dichloropropane	ND	2.0		µg/L	1	10/30/2017 10:32:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	AECOM ABQ	**Client Sample ID:**	MW-11A
Project:	Chevron Isleta	**Collection Date:**	10/26/2017 10:52:00 AM
Lab ID:	1710E05-002 **Matrix:** AQUEOUS	**Received Date:**	10/26/2017 12:20:00 PM

Analyses	**Result**	**PQL**	**Qual**	**Units**	**DF**	**Date Analyzed**	**Batch**
EPA METHOD 8260B: VOLATILES						Analyst:	**RAA**
1,1-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Hexachlorobutadiene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
2-Hexanone	ND	10		µg/L	1	10/30/2017 10:32:00 PM	R46753
Isopropylbenzene	22	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
4-Isopropyltoluene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
4-Methyl-2-pentanone	ND	10		µg/L	1	10/30/2017 10:32:00 PM	R46753
Methylene Chloride	ND	3.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
n-Butylbenzene	3.6	3.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
n-Propylbenzene	50	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
sec-Butylbenzene	5.1	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Styrene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
tert-Butylbenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
trans-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Trichlorofluoromethane	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Vinyl chloride	ND	1.0		µg/L	1	10/30/2017 10:32:00 PM	R46753
Xylenes, Total	ND	1.5		µg/L	1	10/30/2017 10:32:00 PM	R46753
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	10/30/2017 10:32:00 PM	R46753
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	10/30/2017 10:32:00 PM	R46753
Surr: Dibromofluoromethane	103	70-130		%Rec	1	10/30/2017 10:32:00 PM	R46753
Surr: Toluene-d8	99.7	70-130		%Rec	1	10/30/2017 10:32:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: AECOM ABQ
Client Sample ID: MW-8A
Project: Chevron Isleta
Collection Date: 10/26/2017 11:27:00 AM
Lab ID: 1710E05-003
Matrix: AQUEOUS
Received Date: 10/26/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	21	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Toluene	4.3	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Ethylbenzene	32	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2,4-Trimethylbenzene	14	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,3,5-Trimethylbenzene	3.9	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Naphthalene	91	2.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1-Methylnaphthalene	17	4.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
2-Methylnaphthalene	14	4.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Acetone	ND	10		µg/L	1	10/30/2017 10:56:00 PM	R46753
Bromobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Bromodichloromethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Bromoform	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Bromomethane	ND	3.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
2-Butanone	ND	10		µg/L	1	10/30/2017 10:56:00 PM	R46753
Carbon disulfide	ND	10		µg/L	1	10/30/2017 10:56:00 PM	R46753
Carbon Tetrachloride	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Chlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Chloroethane	ND	2.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Chloroform	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Chloromethane	ND	3.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
2-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
4-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
cis-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Dibromochloromethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Dibromomethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,1-Dichloroethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,1-Dichloroethene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,3-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
2,2-Dichloropropane	ND	2.0		µg/L	1	10/30/2017 10:56:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: AECOM ABQ
Project: Chevron Isleta
Lab ID: 1710E05-003 **Matrix:** AQUEOUS

Client Sample ID: MW-8A
Collection Date: 10/26/2017 11:27:00 AM
Received Date: 10/26/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Hexachlorobutadiene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
2-Hexanone	ND	10		µg/L	1	10/30/2017 10:56:00 PM	R46753
Isopropylbenzene	18	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
4-Isopropyltoluene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
4-Methyl-2-pentanone	ND	10		µg/L	1	10/30/2017 10:56:00 PM	R46753
Methylene Chloride	ND	3.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
n-Butylbenzene	ND	3.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
n-Propylbenzene	38	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
sec-Butylbenzene	2.7	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Styrene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
tert-Butylbenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
trans-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Trichlorofluoromethane	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Vinyl chloride	ND	1.0		µg/L	1	10/30/2017 10:56:00 PM	R46753
Xylenes, Total	30	1.5		µg/L	1	10/30/2017 10:56:00 PM	R46753
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	10/30/2017 10:56:00 PM	R46753
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	10/30/2017 10:56:00 PM	R46753
Surr: Dibromofluoromethane	107	70-130		%Rec	1	10/30/2017 10:56:00 PM	R46753
Surr: Toluene-d8	98.1	70-130		%Rec	1	10/30/2017 10:56:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: AECOM ABQ
Client Sample ID: Trip Blank
Project: Chevron Isleta
Collection Date:
Lab ID: 1710E05-004
Matrix: TRIP BLANK
Received Date: 10/26/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Toluene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Ethylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Naphthalene	ND	2.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1-Methylnaphthalene	ND	4.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
2-Methylnaphthalene	ND	4.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Acetone	ND	10		µg/L	1	10/30/2017 11:19:00 PM	R46753
Bromobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Bromodichloromethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Bromoform	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Bromomethane	ND	3.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
2-Butanone	ND	10		µg/L	1	10/30/2017 11:19:00 PM	R46753
Carbon disulfide	ND	10		µg/L	1	10/30/2017 11:19:00 PM	R46753
Carbon Tetrachloride	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Chlorobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Chloroethane	ND	2.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Chloroform	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Chloromethane	ND	3.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
2-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
4-Chlorotoluene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
cis-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Dibromochloromethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Dibromomethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,1-Dichloroethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,1-Dichloroethene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,3-Dichloropropane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
2,2-Dichloropropane	ND	2.0		µg/L	1	10/30/2017 11:19:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

CLIENT: AECOM ABQ **Client Sample ID:** Trip Blank
Project: Chevron Isleta **Collection Date:**
Lab ID: 1710E05-004 **Matrix:** TRIP BLANK **Received Date:** 10/26/2017 12:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Hexachlorobutadiene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
2-Hexanone	ND	10		µg/L	1	10/30/2017 11:19:00 PM	R46753
Isopropylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
4-Isopropyltoluene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
4-Methyl-2-pentanone	ND	10		µg/L	1	10/30/2017 11:19:00 PM	R46753
Methylene Chloride	ND	3.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
n-Butylbenzene	ND	3.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
n-Propylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
sec-Butylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Styrene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
tert-Butylbenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
trans-1,2-DCE	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Trichlorofluoromethane	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Vinyl chloride	ND	1.0		µg/L	1	10/30/2017 11:19:00 PM	R46753
Xylenes, Total	ND	1.5		µg/L	1	10/30/2017 11:19:00 PM	R46753
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	10/30/2017 11:19:00 PM	R46753
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	10/30/2017 11:19:00 PM	R46753
Surr: Dibromofluoromethane	106	70-130		%Rec	1	10/30/2017 11:19:00 PM	R46753
Surr: Toluene-d8	97.4	70-130		%Rec	1	10/30/2017 11:19:00 PM	R46753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Client: AECOM ABQ

Project: Chevron Isleta

Sample ID	**100ng lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**LCSW**	Batch ID:	**R46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/30/2017**	SeqNo:	**1489900** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.8	70	130			
Toluene	19	1.0	20.00	0	92.6	70	130			
Chlorobenzene	19	1.0	20.00	0	94.2	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.8		10.00		98.3	70	130			

Sample ID	**1710e05-001ams**	SampType:	**MS**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**MW-26**	Batch ID:	**R46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/30/2017**	SeqNo:	**1489922** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0.1900	106	70	130			
Toluene	20	1.0	20.00	0.2500	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	117	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Sample ID	**1710e05-001amsd**	SampType:	**MSD**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**MW-26**	Batch ID:	**R46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/30/2017**	SeqNo:	**1489923** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0.1900	103	70	130	2.73	20	
Toluene	20	1.0	20.00	0.2500	97.0	70	130	2.67	20	
Chlorobenzene	20	1.0	20.00	0	100	70	130	1.10	20	
1,1-Dichloroethene	23	1.0	20.00	0	113	70	130	3.53	20	
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130	2.98	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		109	70	130	0	0	
Surr: Toluene-d8	9.9		10.00		98.7	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710E05**

01-Nov-17

Client: AECOM ABQ

Project: Chevron Isleta

Sample ID	**100ng lcs2**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**LCSW**	Batch ID:	**A46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/31/2017**	SeqNo:	**1489928** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		97.5	70	130			

Sample ID	**rb2**	SampType:	**MBLK**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**PBW**	Batch ID:	**A46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/31/2017**	SeqNo:	**1489929** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.5	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Sample ID	**RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**PBW**	Batch ID:	**R46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/30/2017**	SeqNo:	**1490325** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710E05**

01-Nov-17

Client: AECOM ABQ

Project: Chevron Isleta

Sample ID	**RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8260B: VOLATILES**
Client ID:	**PBW**	Batch ID:	**R46753**	RunNo:	**46753**
Prep Date:		Analysis Date:	**10/30/2017**	SeqNo:	**1490325** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Client: AECOM ABQ

Project: Chevron Isleta

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R46753**	RunNo: **46753**	
Prep Date:	Analysis Date: **10/30/2017**	SeqNo: **1490325**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.5	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.7		10.00		97.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Page 12 of 12

**HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY**

*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com*

Sample Log-In Check List

Client Name: AECOM ABQ Work Order Number: 1710E05 RcptNo: 1

Received By: **Erin Melendrez** 10/26/2017 12:20:00 PM
Completed By: **Erin Melendrez** 10/26/2017 12:43:47 PM
Reviewed By: 10/26/17

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
Samples were collected the same day and chilled.
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
(If no, notify customer for authorization.)

# of preserved bottles checked for pH: 1
([✓ <2] or >12 unless noted)
Adjusted? no
Checked by: DDS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	15.0	Good	Not Present			

Chain-of-Custody Record

Client: AECOM

Mailing Address: 6501 Americas PKWY STE 900
Albuquerque, NM 87110

Phone #: 505-855-7500

email or Fax#: 505-855-7555

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other ________

☐ EDD (Type) ________

Turn-Around Time:
☒ Standard ☐ Rush ________

Project Name: Chevron Isleta

Project #: 60489550

Project Manager: Eddie Hubbert

Sampler: Tanner Grulke

On Ice: ☒ Yes ☐ No

Sample Temperature: 15.6-0.6(CF) = 15.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 1710E05	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10-26-17	1012	GW	MW-26	40mL-3	$HgCl_2$	-001										X						
10-26-17	1052	GW	TG 10-26-17 ~~MW-8A~~ MW-11A	40mL-3	$HgCl_2$	-002										X						
10-26-17	1127	GW	MW-8A	40mL-3	$HgCl_2$	-003										X						
			Trip Blank	40mL-2	$HgCl_2$	-004										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
10-26-17	1226			10/26/17	1220
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

About AECOM

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.

More information on AECOM and its services can be found at www.aecom.com.

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