Jason Michelson
Project Manager

Chevron Environmental Management Company
1500 Louisiana Street, #38116
Houston, Texas 77002
Work: 832-854-5601
Cell: 281-660-8564
jmichelson@chevron.com

October 29, 2020

Bradford Billings
New Mexico Oil Conservation Division
5200 Oakland Avenue, N.E. Suite 100
Albuquerque, New Mexico 87113

Re: Lovington Paddock Remediation Site
2019 Annual Groundwater Monitoring Report
Case No. 1R272, OGRID No. 4323
Lea County, New Mexico

Dear Mr. Billings,

Please find enclosed the following report:

Lovington Paddock Remediation Site – 2019 Annual Groundwater Monitoring Report, Section 1 – Township 17 South – Range 36 East, Lea County New Mexico.

The Report was prepared by Arcadis U.S., Inc. (Arcadis), on behalf of Chevron Environmental Management Company (CEMC) to document on-going groundwater monitoring activities throughout 2019 at the Site.

If you have any questions regarding this submittal, please contact Scott Foord with Arcadis at (713) 953-4853 or myself at (832) 854-5601.

Sincerely,

Jason Michelson
Project Manager

Encl. Lovington Paddock Remediation Site – 2019 Annual Groundwater Monitoring Report

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

2019 ANNUAL GROUNDWATER MONITORING REPORT

Lovington Paddock Remediation Site

Lea County, New Mexico

Site ID UBU

OGRID No. 4323

Case No. 1R272

October 28, 2020

2019 ANNUAL GROUNDWATER MONITORING REPORT

Lovington Paddock Remediation Site

Morgan Jordan
Scientist II

Scott Foord, P.G.
Certified Project Manager

Prepared for:

Jason Michelson

Project Manager

Chevron Environmental Management Company

1500 Louisiana St. Room 38108
Houston, Texas 77002

Prepared by:

Arcadis U.S., Inc.

1004 North Big Spring Street

Suite 121

Midland

Texas 79701

Tel 432 687 5400

Fax 432 687 5401

Our Ref.:

30051442

Date:

October 28, 2020

CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

Arcadis U.S., Inc. (Arcadis) submits herein, on behalf of Chevron Environmental Management Company (CEMC), which summarizes semi-annual groundwater monitoring activities conducted in 2019 at the Lovington Paddock remediation site (Site). Data presented in this report was collected during two semi-annual groundwater monitoring events conducted in January and November 2019.

The Site is located within the Lovington Paddock Unit, an active oil production field located in Lea County, New Mexico, and approximately 6.2 miles southeast of the City of Lovington (COL). The Site is located in the south ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East in Lea County, New Mexico. The site coordinates are 32° 51' 31.09" N latitude, 103° 18' 05.41" W longitude.

The Site is in the Monument-Draw Watershed in Lea County, New Mexico, which is an area with very low topographic relief that has an overall gentle southward slope. The Site is on the eastern edge of an upland that breaks in slope downward into the Monument Draw valley immediately to the east of the Site. Elevations slope from approximately 3,400 feet above mean sea level (ft AMSL) to approximately 3,360 ft AMSL in the Monument Draw. A Site Location Map is presented as **Figure 1**. A Site Detail Map is presented as **Figure 2**. Additional Site background information is in **Appendix A**.

2 GROUNDWATER MONITORING

Groundwater at the Site is monitored semi-annually from a network of 25 monitoring wells including 3 former bio sparge wells (BW-1, BW-2, and BW-3). Well MW-A has not been gauged or sampled since its casing collapsed in 2008. The monitoring well locations are shown on **Figure 2**. Former consultant, GHD Services Inc. (GHD), performed the first semi-annual groundwater sampling event on January 15-17, 2019, and Arcadis performed the second semi-annual groundwater sampling event on November 21 and 22, 2019. Field methodologies are described in **Appendix B**.

2.1 Groundwater Gauging Data

Groundwater measurements collected during the January and November 2019 semi-annual monitoring events indicate:

- Groundwater elevations ranged from:
  - 3,704.07 ft AMSL (MW-R) to 3,713.70 ft AMSL (MW-S) during the January 2019 event,
  - and
  - 3,696.93 ft AMSL (MW-R) to 3,709.60 ft AMSL (MW-S) during the November 2019 event;
- The groundwater elevations during the 2019 period appear to be consistent with historical levels, with groundwater flow to the southeast;
- Potentiometric elevation data for the 2019 sampling events are presented in **Table 1**. Groundwater potentiometric surface maps for January and November 2019 are presented in **Figure 3**; and

- The calculated gradient was 0.02 feet/foot (ft/ft) for the January 2019 gauging event, and 0.02 ft/ft for the November 2019 gauging event.

A cumulative summary table of groundwater gauging data from 1998 through 2019 is presented in **Appendix C.**

2.2 2019 Groundwater Analytical Results

Eighteen (18) of the 25 monitoring wells located at the Site were sampled during the January 2019 semi-annual monitoring event. Seven Monitor wells (MW-B, MW-D, and MW-E – MW-I) were not sampled due to having insufficient water to collect groundwater samples in January 2019. Nine (9) wells were sampled during the November 2019 semi-annual monitoring event. Fifteen (15) Monitor wells (MW-B, MW-D, MW-E through MW-N, MW-P, MW-Q, MW-W, and BW-3) were not sampled due to having insufficient water to collect groundwater samples and/or (MW-U) ran dry on attempt to sample in November 2019.

Groundwater analytical results for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) were compared to the New Mexico Environment Department Water Quality Control Commission (NMWQCC) Groundwater Standards. No NMWQCC standard exists for Total Petroleum Hydrocarbons (TPH). A summary of the groundwater sample analytical results from the January and November 2019 semi-annual events are presented in **Table 2**. Geochemical indicators concentrations (Methane, Sulfate, Alkalinity, and Nitrates) for the January 2019 event can also be found in **Table 2**. A cumulative summary table of groundwater analytical results from 1998 through 2019 is presented in **Appendix D**. Benzene concentration charts are presented in **Appendix E**. Copies of the certified analytical reports and chain-of-custody documentation from Xenco Laboratories and EurofinsTestAmerica, Inc. are provided in **Appendix F**. Dissolved Hydrocarbons Concentration maps for the 2019 semi-annual sampling events are presented on **Figure 4 & 5**. The Geochemical Indicator map for the January 2019 semi-annual sampling event is presented in **Figure 6**. The analytical results are further summarized below.

2.2.1 Benzene and Toluene

- Benzene concentrations exceeded the NMWQCC standard of 0.01 milligrams per liter (mg/L) in 3 of the 18 wells sampled (BW-2, BW-3, and MW-T) at concentrations ranging from 0.784 mg/L (BW-2) to 11.40 mg/L (MW-T) during the January 2019 semi-annual sampling event;
- Toluene concentrations exceeded the NMWQCC standard of 0.75 mg/L in one well (BW-3) at a concentration of 1.21 mg/L during the January 2019 semi-annual sampling event; and
- Benzene concentrations exceeded the NMWQCC standard in 2 of 9 wells sampled at concentrations ranging from 0.013 mg/L (BW-2) to 7.60 mg/L (MW-T) during the November 2019 event.

2.2.2 TPH

- Total TPH detected concentrations ranged from 2.81 mg/L (BW-3) to 5.92 mg/L (MW-T) in 2 of 18 wells sampled during the January 2019 sampling event;
- Total TPH was detected in 1 of 9 wells sampled with a concentration of 11.00 mg/L in MW-T during the November 2019 sampling event. No NMWQCC standard exists at this time for TPH; and,

- The collection of select monitored natural attenuation (MNA) geochemical indicator parameters from select monitoring wells in addition to the current groundwater sample analysis performed during both semi-annual groundwater sampling events was conducted during the January 2019 event. Geochemical data was collected from 10 select wells (upgradient, impacted, and downgradient) to begin evaluation of trending groundwater conditions (aerobic/anaerobic) needed to promote petroleum hydrocarbon biodegradative processes in groundwater. Geochemical parameters are presented in **Table 2**, and in **Figure 6.**

3 SUMMARY

During the 2019 semi-annual groundwater sampling events:

- The 25 site monitoring wells were gauged during both semi-annual events;
- The overall groundwater flow direction during both 2019 events was toward the southeast and is consistent with historical data since the Goff irrigation wells began pumping in 2001. The falling water levels are believed due to pumping of the Goff wells;
- 18 monitoring wells were sampled during the January 2019 event, and 9 monitoring wells were sampled during the November 2019 event;
- Benzene exceeded NMWQCC standard of 0.01 mg/L in 3 wells during the January 2019 event and 2 wells during the November 2019 event;
- Toluene exceeded the NMWQCC standard of 0.75 mg/L in 1 well during the January 2019 semi-annual groundwater sampling event;
- Total TPH was detected in in 2 wells sampled during the January 2019 event and 1 well during the November 2019 event; and
- Geochemical data was collected from 10 select wells (upgradient, impacted, and downgradient) during the January 2019 event to begin evaluation of trending groundwater conditions (aerobic/anaerobic) needed to promote petroleum hydrocarbon biodegradative processes in groundwater.

4 2020 PLANNED ACTIVITIES

Continue to perform semiannual groundwater monitoring for BTEX and TPH with semi-annual reporting for all Site wells. Due to the relative stability of the dissolved plume, the most appropriate remedial alternative for the Site is currently considered to be MNA. MNA geochemical indicators in groundwater will continue to be tested for and evaluated. Alternate remedial methods are additionally being evaluated for the Site.

TABLES

Table 1
2019 Summary of Groundwater Gauging Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])
BW-1	3816.14	4	25'-125'	1/17/2019 11/20/2019	-- 126.40	107.45 113.78	3708.69 3702.36
BW-2	3816.57	4	25'-125'	1/17/2019 11/20/2019	-- 127.91	107.08 113.02	3709.49 3703.55
BW-3	3815.82	4	25'-125'	1/17/2019 11/20/2019	-- 120.22	107.97 Dry	3707.85 --
MW-A					destroyed- casing collapsed in 2008		
MW-B	3816.09	4	65'-105'	1/17/2019 11/20/2019	-- 110.92	Dry Dry	-- --
MW-CR	3817.99	4	65'-105'	1/17/2019 11/20/2019	-- 136.40	108.17 114.44	3709.82 3703.55
MW-D	3816.08	4	65'-105'	1/17/2019 11/20/2019	-- 112.44	Dry Dry	--
MW-D2	3815.93	4	65'-105'	1/17/2019 11/20/2019	-- >200	107.48 113.50	3708.45 3702.43
MW-E	3816.31	4	65'-105'	1/17/2019 11/20/2019	-- 111.82	Dry Dry	--
MW-F	3816.69	4	65'-105'	1/17/2019 11/20/2019	-- 112.11	Dry Dry	--
MW-G	3818.23	4	65'-105'	1/17/2019 11/20/2019	-- 109.68	Dry Dry	--
MW-H	3816.74	4	65'-105'	1/17/2019 11/20/2019	-- 111.05	Dry Dry	--
MW-I	3816.94	4	65'-105'	1/17/2019 11/20/2019	-- 111.11	Dry Dry	--
MW-J	3817.66	4	65'-105'	1/17/2019 11/20/2019	-- 108.65	104.87 Dry	3712.79 --
MW-L	3818.35	4	65'-105'	1/17/2019 11/20/2019	-- 115.66	106.54 Dry	3711.81 --
MW-M	3817.88	4	65'-105'	1/17/2019 11/20/2019	-- 110.44	104.66 Dry	3713.22 --
MW-N	3817.7	4	65'-105'	1/17/2019 11/20/2019	-- 122.22	107.09 Dry	3710.61 --
MW-O-R	3815.90	4	65'-105'	1/17/2019 11/20/2019	-- 135.45	109.83 117.39	3706.07 3698.51
MW-P	3814.24	4	65'-105'	1/17/2019 11/20/2019	-- 114.5	109.00 Dry	3705.24 --
MW-Q	3814.23	4	65'-105'	1/17/2019 11/20/2019	-- 114.59	107.06 Dry	3707.17 --
MW-R	3810.89	4	65'-105'	1/17/2019 11/20/2019	-- 141.35	106.82 113.96	3704.07 3696.93
MW-S	3816.52	4	20'-120'	1/17/2019 11/20/2019	-- 129.7	102.82 106.92	3713.70 3709.60
MW-T	3816.71	4	20'-120'	1/17/2019 11/20/2019	-- 128.81	106.80 112.62	3709.91 3704.09
MW-U	3814.94	4	80'-120'	1/17/2019 11/20/2019	-- 124.41	107.73 114.70	3707.21 3700.24
MW-V	3815.04	4	80'-120'	1/17/2019 11/20/2019	-- 130.6	108.12 115.35	3706.92 3699.69
MW-W	3815.09	4	80'-120'	1/17/2019 11/20/2019	-- 113.77	108.71 Dry	3706.38 --

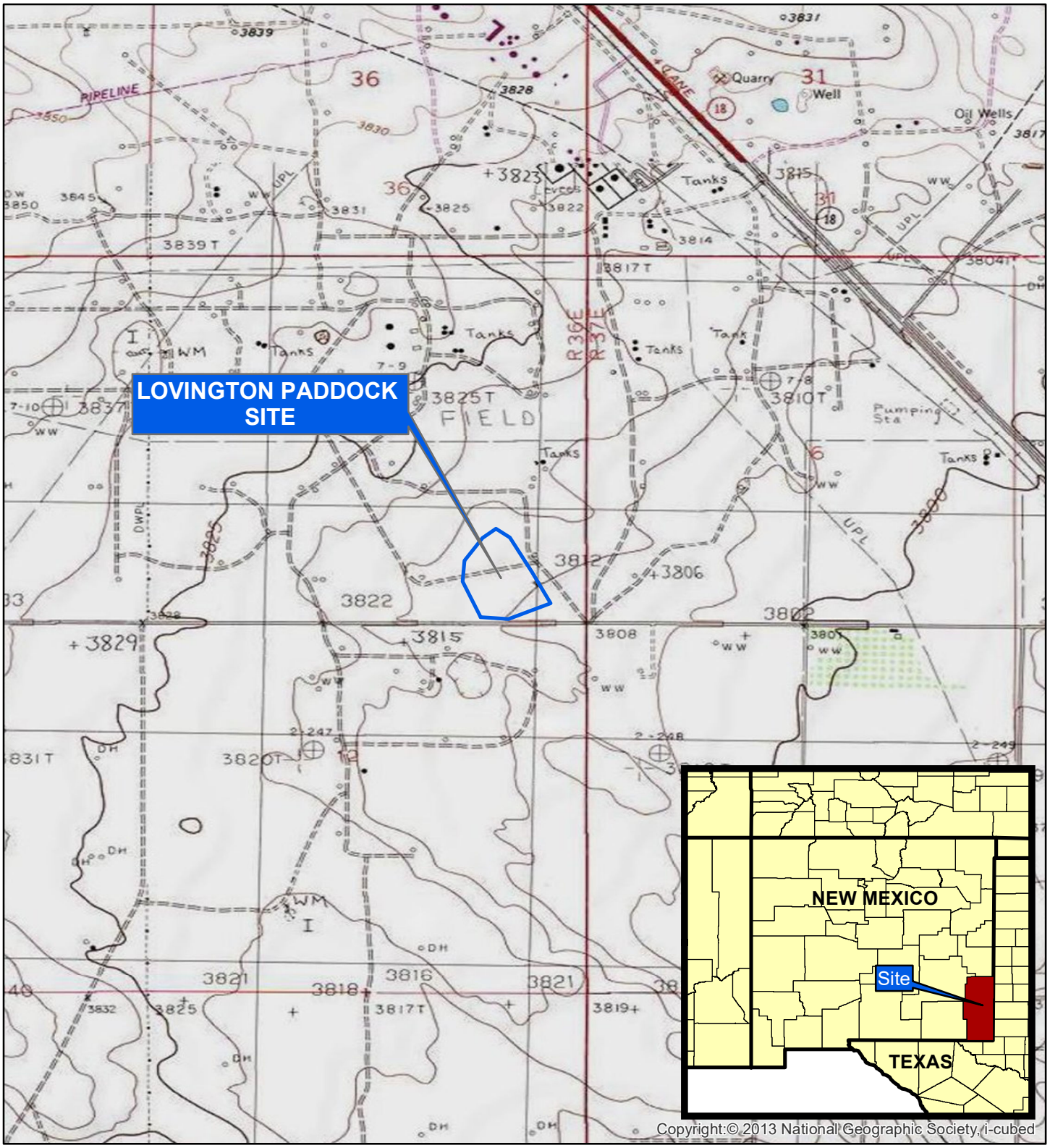
Table 2
2019 Summary of Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	TPH-ORO	Methane	Sulfate	Alkalinity	Nitrate
		NMWQCC Other Standards for Domestic Water Supply[2]										
		0.01	0.75	0.75	0.62	--	--	--	--	--	--	--
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
BW-1	1/16/2019	**0.00724**	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	49.60	236.00	0.944
	11/22/2019	**0.00065**	<0.00020	<0.00021	**0.00096**	<0.049	<0.17	<0.17				
BW-2	1/17/2019	**0.784 D**	0.07960	0.00727	0.02060	<1.50	<1.50	<1.50				
	11/22/2019	**0.013**	**0.0015**	<0.00021	**0.0016**	**0.062**	<0.16	<0.16				
BW-3	1/16/2019	**3.98 D**	**1.21 D**	0.0322	0.109	**2.81**	<1.50	**2.81**	<1.10	64.3	288	<0.100
MW-C-R	1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	49.40	229.00	1.62
	11/22/2019	<0.00018	<0.00020	<0.00021	<0.00037	<0.49	<0.16	<0.16				
MW-D2	1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	58.80	154.00	2.66
	11/22/2019	<0.00018	<0.00020	<0.00021	<0.00037	<0.49	<0.17	<0.17				
MW-J	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-L	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-M	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-N	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-O-R	1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	49.20	250.00	1.13
	11/22/2019	<0.00018	<0.00020	<0.00021	<0.00037	**0.050**	<0.17	<0.17				
MW-P	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
Dup	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-Q	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-R	1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	55.20	202.00	2.26
	11/21/2019	<0.00018	<0.00020	<0.00021	<0.00037	<0.49	**0.47**	<0.16				
MW-S	1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	79.60	171.00	2.57
	11/22/2019	<0.00018	<0.00020	<0.00021	<0.00037	**0.050**	<0.17	<0.17				
MW-T	1/16/2019	**11.4 D**	0.169	0.129	0.217	**5.92**	<1.50	**5.92**	<1.10	4.65	375.00	<0.100
	11/22/2019	**7.6**	**0.077**	**0.13**	0.018	**11**	<0.17	<0.17				
MW-U	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
MW-V	1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	38.00	262.00	1.48
	11/22/2019	<0.00018	<0.00020	<0.00021	<0.00037	<0.049	<0.16	<0.16				
MW-W	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				
Dup	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50				

1) RCRA Metals Analysis by Environment Protections Agency (EPA) Methods 6010B and 7470A.
2) Groundwater Quality by EPA Methods 160.1, 300.0, and 310.1.
3) Highlighted values indicate concentrations above NMWQCC Other Standards for Domestic Water Supply.
4) [1] NMWQCC Human Health Standards Per NMAC 20.6.2.3103A.
5) [2] NMWQCC Other Standards for Domestic Water Supply Per NMAC 20.6.2.3103B.
6) NA= Not analyzed
7) DUP = Duplicate sample
8) D = Dilution factors are included in the final results. The result is from a diluted sample.
9) * = Likely an order of magnitude higher then actual result; however reported value was verified by the laboratory

FIGURES



Legend

Site Boundary

Notes:
1. Datum: D_WGS_1984
2. Source: United States Geological Survey 7.5 Minute Quadrangle Map
3. Site Location: 32.858957, -103.302786

0 1,000 2,000 4,000 Feet

N

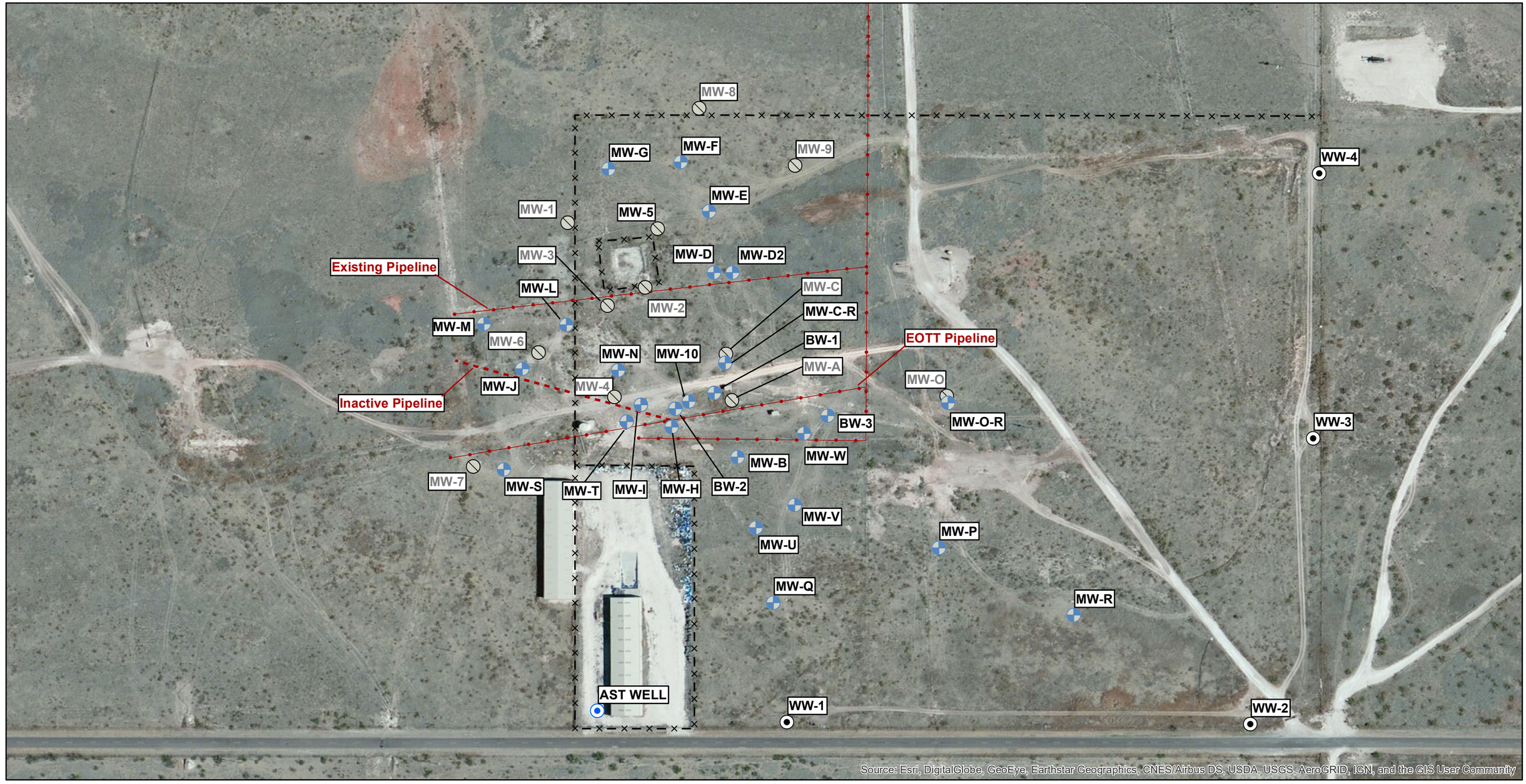
Chevron Environmental Management Company
Lovington Paddock Site
Lea County, New Mexico

SITE LOCATION MAP

ARCADIS

FIGURE 1

Document Path:\\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\HES Transfer\Lovington Paddock\GIS - Lovington Paddock\Fig 1 - Site Location Map 01.14.2020



Legend

- Monitoring Well Location
- Goff Dairy Well Location
- Water Supply Well (AST Well)
- Plugged & Abandoned Well Location
- Pipeline
- Abandoned Pipeline
- Fence Line

N

0 100 200 400 Feet

Note:
1. Datum: D_WGS_1984
2. Site Location: 32.858957, -103.302786

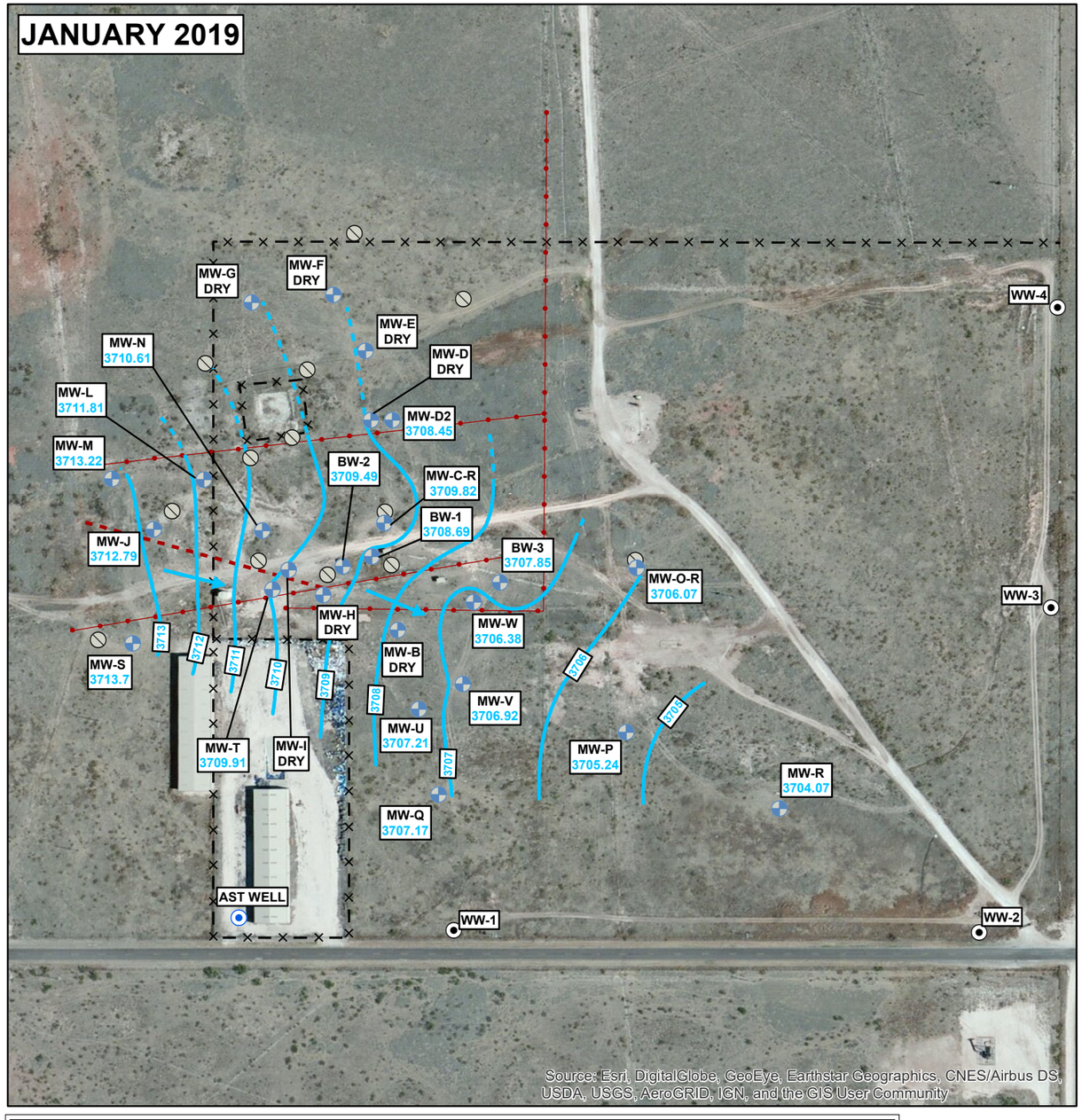
Chevron Environmental Management Company
Lovington Paddock Site
Lea County, New Mexico

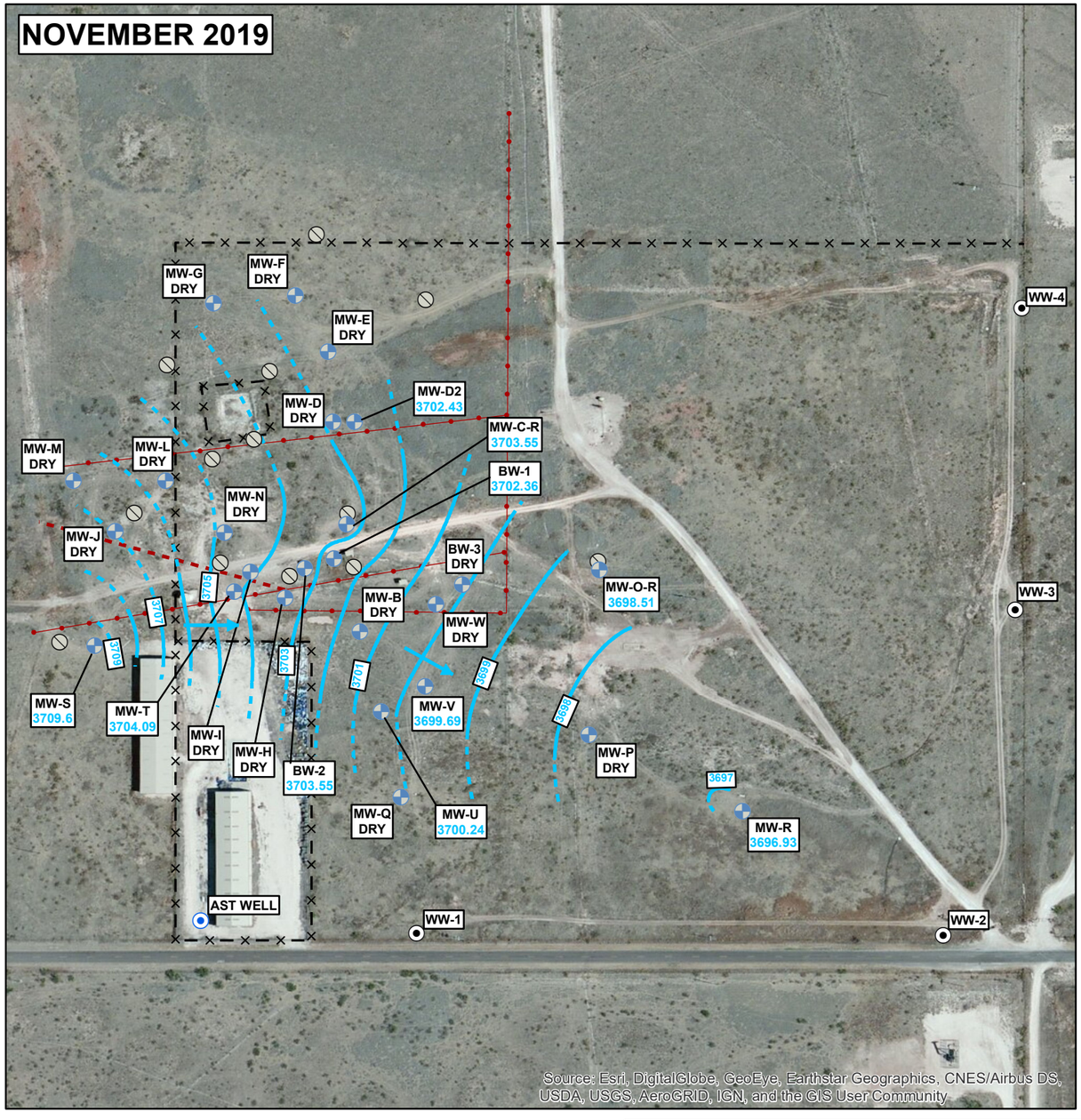
SITE DETAILS MAP

ARCADIS

FIGURE 2

Document Path:\\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\HES Transfer\Lovington Paddock\GIS Files\Figure 2 Site Details Map Lovington Paddock 01.06.2020





Legend

- Monitoring Well Location
- Goff Dairy Well Location
- Water Supply Well (AST Well)
- Plugged & Abandoned Well Location
- 3721 — Potentiometric Contour and Elevation
- Inferred Potentiometric Contour
- 3720.75 — Groundwater Elevation (ft above mean sea level)
- Approximate Groundwater Flow Direction
- Pipeline
- Abandoned Pipeline
- Fence Line

N

0 125 250 500 Feet

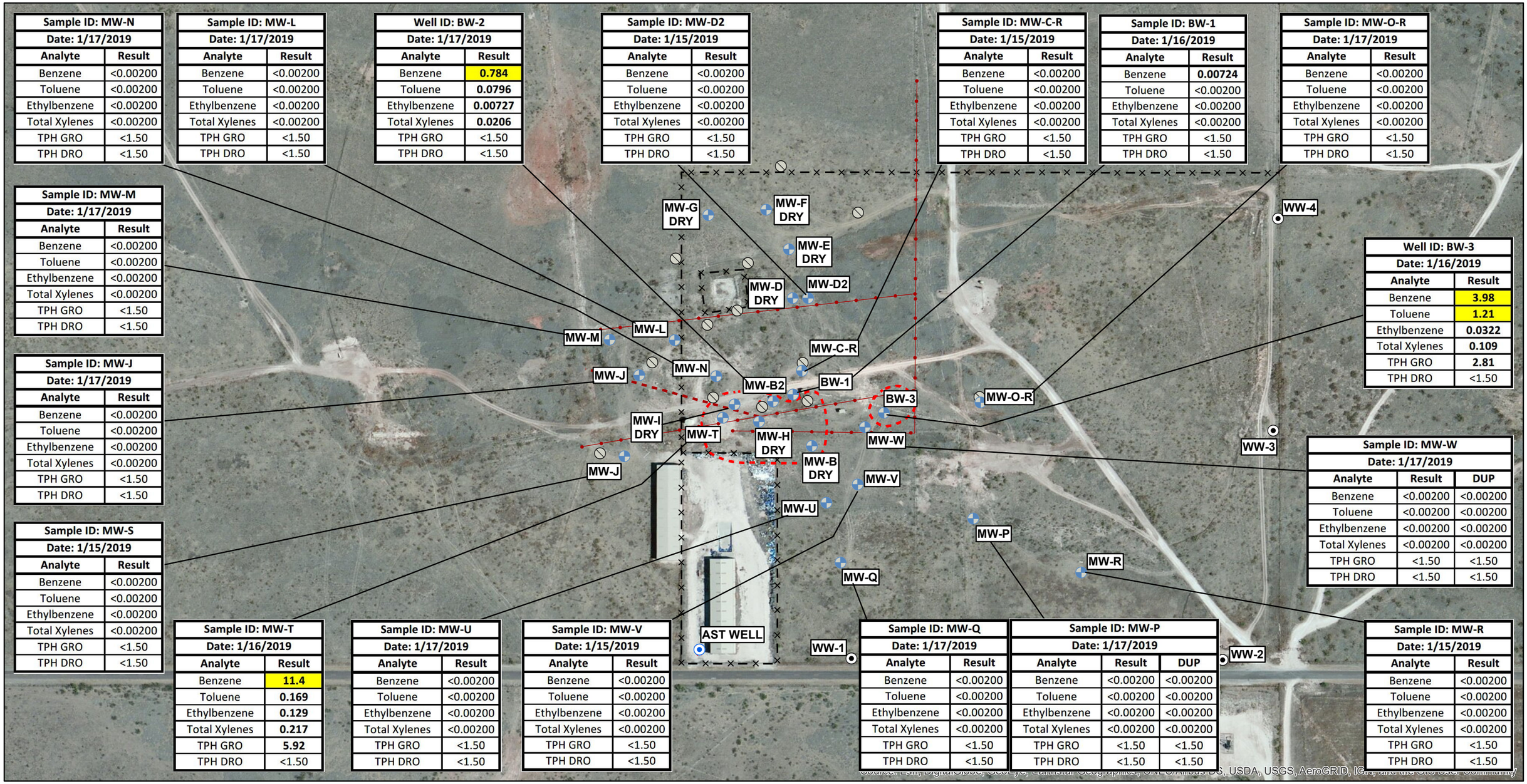
Note:
1. Water Supply Well and Goff Dairy Wells were not sampled.
2. Datum: D_WGS_1984
3. Groundwater gradient = 0.02 ft/ft
4. Site Location: 32.858957, -103.302786

Chevron Environmental Management Company
Lovington Paddock Site
Lea County, New Mexico

SEMI-ANNUAL POTENTIOMETRIC SURFACE MAP 2019

ARCADIS

FIGURE 3



Sample ID: MW-N	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-L	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Well ID: BW-2	
Date: 1/17/2019	
Analyte	Result
Benzene	**0.784**
Toluene	**0.0796**
Ethylbenzene	**0.00727**
Total Xylenes	**0.0206**
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-D2	
Date: 1/15/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-C-R	
Date: 1/15/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: BW-1	
Date: 1/16/2019	
Analyte	Result
Benzene	**0.00724**
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-O-R	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-M	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Well ID: BW-3	
Date: 1/16/2019	
Analyte	Result
Benzene	**3.98**
Toluene	**1.21**
Ethylbenzene	**0.0322**
Total Xylenes	**0.109**
TPH GRO	**2.81**
TPH DRO	<1.50

Sample ID: MW-J	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-W		
Date: 1/17/2019		
Analyte	Result	DUP
Benzene	<0.00200	<0.00200
Toluene	<0.00200	<0.00200
Ethylbenzene	<0.00200	<0.00200
Total Xylenes	<0.00200	<0.00200
TPH GRO	<1.50	<1.50
TPH DRO	<1.50	<1.50

Sample ID: MW-S	
Date: 1/15/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-T	
Date: 1/16/2019	
Analyte	Result
Benzene	**11.4**
Toluene	**0.169**
Ethylbenzene	**0.129**
Total Xylenes	**0.217**
TPH GRO	**5.92**
TPH DRO	<1.50

Sample ID: MW-U	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-V	
Date: 1/15/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-Q	
Date: 1/17/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Sample ID: MW-P		
Date: 1/17/2019		
Analyte	Result	DUP
Benzene	<0.00200	<0.00200
Toluene	<0.00200	<0.00200
Ethylbenzene	<0.00200	<0.00200
Total Xylenes	<0.00200	<0.00200
TPH GRO	<1.50	<1.50
TPH DRO	<1.50	<1.50

Sample ID: MW-R	
Date: 1/15/2019	
Analyte	Result
Benzene	<0.00200
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	<0.00200
TPH GRO	<1.50
TPH DRO	<1.50

Legend

- Monitoring Well Location
- Goff Dairy Well Location
- Water Supply Well (AST Well)
- Plugged & Abandoned Well Location
- Pipeline
- Abandoned Pipeline
- Fence Line
- Extent of Benzene Exceedance (Inferred)
- **BOLD** Analyte Detected
- **BOLD** Analyte Result Above NMWQCC Standard

Analyte	NMWQCC Standard for Groundwater (mg/L)
Benzene	0.01
Ethylbenzene	0.75
Toluene	0.75
Total Xylenes	0.62
TPH GRO	No Standard
TPH DRO	No Standard

N

0 125 250 500 Feet

Note:
1. Water Supply Well and Goff Diary Wells were not sampled.
2. Datum: D_WGS_1984
3. Site Location: 32.858957, -103.302786

Chevron Environmental Management Company
Lovington Paddock Site
Lea County, New Mexico

DISSOLVED HYDROCARBON CONCENTRATIONS MAP JANUARY 2019

ARCADIS

FIGURE 4

Document Path:\\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\HES Transfer\Lovington Paddock\GIS Files\Figure 4 Hydrocarbon Jan 2019 Potentiometric Map

Well ID: BW-2	
Date: 11/22/2019	
Analyte	Result
Benzene	**0.013**
Toluene	**0.0015**
Ethylbenzene	<0.00021
Total Xylenes	**0.0016**
TPH GRO	**0.062**
TPH DRO	<0.16

Sample ID: MW-D2	
Date: 11/22/2019	
Analyte	Result
Benzene	<0.00018
Toluene	<0.00020
Ethylbenzene	<0.00021
Total Xylenes	<0.00037
TPH GRO	<0.49
TPH DRO	<0.17

Sample ID: MW-C-R	
Date: 11/22/2019	
Analyte	Result
Benzene	<0.0018
Toluene	<0.00020
Ethylbenzene	<0.00021
Total Xylenes	<0.00037
TPH GRO	<0.49
TPH DRO	<0.16

Sample ID: BW-1	
Date: 11/22/2019	
Analyte	Result
Benzene	**0.00065**
Toluene	<0.00200
Ethylbenzene	<0.00200
Total Xylenes	**0.00096**
TPH GRO	<0.049
TPH DRO	<0.17

Sample ID: MW-O-R	
Date: 11/22/2019	
Analyte	Result
Benzene	<0.00018
Toluene	<0.00020
Ethylbenzene	<0.00021
Total Xylenes	<0.00037
TPH GRO	**0.050**
TPH DRO	<0.17

Sample ID: MW-S	
Date: 11/22/2019	
Analyte	Result
Benzene	<0.00018
Toluene	<0.00020
Ethylbenzene	<0.00021
Total Xylenes	<0.00037
TPH GRO	**0.050**
TPH DRO	<0.17

Sample ID: MW-T	
Date: 11/22/2019	
Analyte	Result
Benzene	**7.6**
Toluene	**0.077**
Ethylbenzene	**0.13**
Total Xylenes	**0.018**
TPH GRO	**11.00**
TPH DRO	<0.17

Sample ID: MW-V	
Date: 11/22/2019	
Analyte	Result
Benzene	<0.00018
Toluene	<0.00020
Ethylbenzene	<0.00021
Total Xylenes	<0.00037
TPH GRO	<0.049
TPH DRO	<0.16

Sample ID: MW-R	
Date: 11/21/2019	
Analyte	Result
Benzene	<0.00018
Toluene	<0.00020
Ethylbenzene	<0.00021
Total Xylenes	<0.00037
TPH GRO	<0.49
TPH DRO	**0.47**

MW-G DRY, MW-F DRY, MW-E DRY, MW-D DRY, MW-D2, MW-M, MW-L, MW-J, MW-N, MW-C-R, BW-2, BW-1, MW-K, BW-3 DRY, MW-O-R, MW-T, MW-H DRY, MW-W, MW-B DRY, MW-S, MW-V, MW-U, MW-P, MW-Q, MW-R, WW-4, WW-3, AST WELL, WW-1, WW-2

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Monitoring Well Location
- Goff Dairy Well Location
- Water Supply Well (AST Well)
- Plugged & Abandoned Well Location
- Pipeline
- Abandoned Pipeline
- Fence Line
- Extent of Benzene Exceedance (Inferred)
- **BOLD** Analyte Detected
- **BOLD** Analyte Result Above NMWQCC Standard

Analyte	NMWQCC Standard for Groundwater (mg/L)
Benzene	0.01
Ethylbenzene	0.75
Toluene	0.75
Total Xylenes	0.62
TPH GRO	No Standard
TPH DRO	No Standard

N

0 125 250 500 Feet

Note:
1. Water Supply Well and Goff Diary Wells were not sampled.
2. Datum: D_WGS_1984
3. Site Location: 32.858957, -103.302786

Chevron Environmental Management Company
Lovington Paddock Site
Lea County, New Mexico

DISSOLVED HYDROCARBON CONCENTRATIONS MAP NOVEMBER 2019

ARCADIS

FIGURE 5

Well ID: MW-C-R	
Date: 1/15/2019	
Analyte	Result
Alkalinity	229
Methane	<1.10
Nitrate	1.62
Sulfate	49.4

Well ID: MW-D2	
Date: 1/15/2019	
Analyte	Result
Alkalinity	154
Methane	<1.10
Nitrate	2.66
Sulfate	58.8

Well ID: BW-1	
Date: 1/16/2019	
Analyte	Result
Alkalinity	236
Methane	<1.10
Nitrate	0.944
Sulfate	49.6

Well ID: BW-3	
Date: 1/16/2019	
Analyte	Result
Alkalinity	288
Methane	<1.10
Nitrate	<0.10
Sulfate	64.3

Well ID: MW-T	
Date: 1/16/2019	
Analyte	Result
Alkalinity	375
Methane	<1.10
Nitrate	<0.10
Sulfate	4.65

Well ID: MW-O-R	
Date: 1/15/2019	
Analyte	Result
Alkalinity	250
Methane	<1.10
Nitrate	1.13
Sulfate	49.2

Well ID: MW-S	
Date: 1/15/2019	
Analyte	Result
Alkalinity	171
Methane	<1.10
Nitrate	2.57
Sulfate	79.6

Well ID: MW-V	
Date: 1/15/2019	
Analyte	Result
Alkalinity	262
Methane	<1.10
Nitrate	1.48
Sulfate	38

Well ID: MW-R	
Date: 1/15/2019	
Analyte	Result
Alkalinity	202
Methane	<1.10
Nitrate	2.26
Sulfate	55.2

MW-G
MW-F
MW-E
MW-D
MW-M
MW-L
MW-N
MW-J
MW-I
BW-1
MW-A
MW-T
MW-B
MW-W
MW-S
MW-H
BW-2
MW-U
MW-P
MW-Q
MW-R
AST WELL
WW-1
WW-2
WW-3
WW-4

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Monitoring Well Location
- Goff Dairy Well Location
- Water Supply Well (AST Well)
- Plugged & Abandoned Well Location
- Pipeline
- Abandoned Pipeline
- Fence Line

N

0 100 200 400 Feet

Note:
1. Water Supply Well and Goff Dairy Wells were not sampled.
2. Datum: D_WGS_1984
3. Site Location: 32.858957, -103.302786

Chevron Environmental Management Company
Lovington Paddock Site
Lea County, New Mexico

GEOCHEMICAL INDICATOR MAP JANUARY 2019

ARCADIS

FIGURE 6

Document Path:\\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\HES Transfer\Lovington Paddock\GIS Files\Figure 6 Geochem 2019 Map

APPENDIX A

Site Background

SITE BACKGROUND

The Site is located within the Lovington Paddock Unit, an active oil production field located in Lea County, New Mexico and approximately 6.2 miles southeast of the City of Lovington. The Site is located in the south ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East in Lea County, New Mexico. The Site vicinity is presented on Figure 1, and Site details are shown on Figure 2.

There are two currently active pipelines on the Site, as well as multiple inactive pipes. The Site is currently monitored with 25 a network of monitoring wells. The City of Lovington sold the 40-acre tract on which the Site resides to Buster Goff in March 2001. At that time, AST West began leasing the Site for use in the distribution of soaps and detergents. Mr. Goff then sold the Site to Lea County Electric Cooperative (LCEC) in October 2001. Mico Oilfield Services (Mico) of Hobbs, New Mexico, a supplier of frac tanks to the oil and gas business, began leasing the former AST building and southwestern portion of the Site in 2012. The LCEC sold the property to Divine Ventures, LLC in March 2015.

Historical Investigation

Previous investigations conducted from 1998 to 2007 to identify the source and extent of groundwater impacts related to a former pit and possible historic pipeline leak indicated two separate plumes. These field activities have included excavation of sludge from the former pit, the advancement of 11 soil borings (BH-1 through BH-11), installation of 33 monitoring wells (MW-1 through MW-10, MW-A through MW-J, MW-L through MW-W, and MW-D2) and installation of three bio-sparge wells (BW-1 through BW-3). In March 2000, light non-aqueous phase liquid (LNAPL) was observed in MW-4 and MW-10. In March 2001, and on behalf of EOTT Energy, LLC (EOTT), 300 feet (ft) of pipeline in the vicinity of the impacts were uncovered and inspected by Environmental Plus, Inc. (EPI). Based on EPI's observations, no previous repairs or replacement pipeline were evident.

AST West installed a water supply well (AST well) at the southwestern portion of the Site in 2001. Also in 2001, Goff Dairy (Goff) installed four irrigation wells (WW-1, WW-2, WW-3, and WW-4) adjacent to the eastern and southern boundaries of the Site. Each Goff well was designed to pump approximately 600 to 800 gallons per minute (gpm) and pumping from these irrigation wells resulted in groundwater levels in monitoring wells at the Site being lowered by several feet. As a result, the groundwater gradient direction shifted from northeast to southeast, and monitoring wells MW-1 to MW-10 became dry in 2002. LNAPL has not been observed at the Site since these wells became dry.

From 2003 through 2005, Arcadis installed 17 groundwater monitoring wells (MW-A to MW-J, and MW-L to MW-R), one well (MW-D2) to investigate potential impact by chloride, and three biosparge remediation wells (BW-1 through BW-3). Wells MW-A through J were installed to replace MW-1 to MW-10 that became dry due to pumping of the recently installed Goff and AST wells. Wells MW-L to MW-R were also installed to deeper depths to accommodate the lower water levels. Former wells MW-1 through MW-9 were plugged and abandoned.

The collective investigations resulted in the identification of two separate dissolved phase petroleum hydrocarbon plumes in groundwater. No evidence of chloride impact was found in MW-D2.

One plume (east plume) was found below and surrounding an abandoned pit, while another plume (west plume) was observed near the EOTT pipeline. The west plume is located upgradient of the east plume.

After conducting a 180-day study of the expanded bio sparge system, Arcadis concluded in a March 2006 report that the bio sparge system had prevented further downgradient movement of the plumes. SECOR continued operation of the bio sparge system after acquiring the project from Arcadis and installed five additional monitoring wells (MW-S to MW-W) in 2006 and 2007. MW-T was converted to a bio sparge well after failure of BW-2, and MW-U, MW-V and MW-W were installed to better evaluate the bio sparge system. Based on results through 2007, the greatest impact to groundwater was in MW-H and MW-T located near the intersection of the EOTT pipeline and an inactive pipeline.

Based on data collected in 2006 and 2008, Stantec (formerly SECOR) defined the following stratigraphic profile in the Comprehensive Soil Investigation Report dated March 2010.

- A caliche interval extending from near ground surface to approximately 10 to 25 feet below ground surface (ft bgs),
- An underlying fine-grained sand interval extending to approximately 75 to 95 ft bgs, and including a relatively thin (2-ft thickness) sandstone layer between 35 and 50 ft bgs,
- A medium-grained sand interval extending from the base of the fine-grained sand interval to at least 120 ft bgs.

The results of the soil investigation indicated the source of total petroleum hydrocarbons (TPH) in the west plume appeared to be in the vicinity of wells MW-H and MW-T, and near the intersection of the EOTT pipeline and an inactive pipeline. The vertical distribution of chemical concentrations indicated TPH concentrations increased with depth and spread to the maximum lateral extent at 60 to 70 ft bgs where the highest TPH concentrations were located. The magnitude and lateral extent of TPH concentrations rapidly decreased below 70 ft bgs.

The maximum concentrations and lateral extent at 70 ft bgs, and rapidly decreasing concentrations below that depth, are believed to be an artifact of a historical (higher) groundwater elevation at the time of the release. After the AST West and Goff wells were installed in 2001, groundwater levels (measured relative to ground surface in nearby MW-H) declined from 80.18 ft bgs in 2003, to 95.20 ft bgs in 2009, to 99.55 ft bgs in March 2017, a net decline of nearly 20 feet over 12 years. Therefore, it is believed possible that groundwater levels at some time prior to 2001 could have been within the range of 60 to 70 ft bgs, and that the release occurred during that time.

As a result of falling water levels, LNAPL historically observed at the Site (i.e., MW-4 and MW-10) is thought to be retained in soil pores at or near residual (immobile) saturations.

GHD (previous consultant) Investigation

GHD (formerly Conestoga-Rovers & Associates) began providing environmental consulting services at the Site in November 2010. Groundwater monitoring was conducted on a semiannual schedule with annual reporting. The biosparge system has not operated since 2011 when wildfires damaged some of the system's surface equipment, but its effectiveness had significantly diminished prior to that time.

As noted above, the groundwater flow direction at the Site has changed substantially over time due to intermittent pumping from the Goff irrigation wells. Prior to installation of the Goff wells, the groundwater flow

direction remained consistently toward the northeast. Since the Goff wells began pumping in 2001, the groundwater flow direction gradually shifted from northeast to southeast. Continued pumping of the Goff wells through 2012 and 2013 lowered the water table and caused numerous monitoring wells to be dry during monitoring events. Information obtained from the New Mexico Office of State Engineer (NMOSE) website in 2014 indicated that Goff changed their permitted groundwater usage locations (i.e., points of diversion, a.k.a. "PODs") from wells located to the east (WW-3 and WW-4) to wells located further south (WW-1 and WW-2).

A soil vapor extraction (SVE) pilot test was conducted in August 2013 using five wells located in the west plume. MW-H, which was dry at the time, was selected as the extraction well due to high TPH levels in influent vapors. Vacuum communication was established in all observation wells (MW-T, MW-10, BW-2 and MW-I) during the six-hour test period. The observation wells were located at distances ranging from 47 feet (MW-T) to 88 feet (MW-I) from the extraction well (MW-H). The test results indicated that SVE should be an effective remediation method for residual hydrocarbons in soil if the induced vacuum remains below a specified limit and groundwater depths remain at the relatively low levels.

In April 2015, GHD conducted a Fit-for-Service evaluation on the former biosparge air compressors and associated air receivers. The evaluation revealed the equipment could potentially be functional after appropriate repairs (i.e., replacement of oil, belts, pressure safety valve, etc.). However, preliminary cost comparisons indicated new compressors would be less expensive than repairing the existing ones. The remnants of the biosparge system were removed in 2018.

Recovering water levels caused fewer wells to be dry in October 2015 relative to the prior year (October 2014) event, and no wells were dry during the following event of March 2016. However, declining water levels resumed in the subsequent months leading up to the October 2016 monitoring event, resulting in water levels falling an average of 8.45 feet and causing 11 wells to be dry or with insufficient water for sampling. The falling water levels were apparently due to resumed pumping of the Goff irrigation wells.

Arcadis began providing environmental consulting services at the site in 2019.

REGULATORY FRAMEWORK

The NMOCD provides guidance for remediation of contaminants of oil field wastes or products in Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993). These guidelines require remediation of groundwater to human health standards of the NMWQCC established in New Mexico Administrative Code Section 20.6.2.3103. Standards for benzene, toluene, ethylbenzene, and total xylenes (BTEX) are listed below.

Analyte	NMWQCC Standard for Groundwater (mg/L)
Benzene	.01
Toluene	.75
Ethylbenzene	.75
Total Xylenes	.62

Note: mg/L = milligrams per liter

MONITORING WELL ABANDONMENT

Monitor wells MW-C and MW-O, which were frequently dry beginning in 2011, were plugged and abandoned on July 19, 2017. These wells were previously replaced by deeper wells MW-C-R and MW-O-R in June 2016. Plugging reports are provided in Appendix A.

APPENDIX B

Field Methodology

FIELD METHODOLOGY

Field equipment was decontaminated with an Alconox™ wash and distilled water rinse before beginning field activities and between wells. Groundwater gauging was conducted prior to sampling activities. Water levels were measured to the nearest hundredth of a foot from the top of casing using an electronic water level meter.

Wells were sampled using low-flow methodology. During purging, the flow rate was adjusted in order to achieve minimal drawdown from the static water level. Temperature, oxidation reduction potential (ORP), pH, conductivity, and dissolved oxygen (DO) were monitored during purging, which continued until at least three of these parameters were stabilized within a 10 percent range for three consecutive measurements. Samples were then collected, labeled, recorded on a chain of custody form, and placed on ice in an insulated cooler to maintain a temperature of approximately 4°C (40°F).

Groundwater samples were submitted by GHD under chain-of-custody (COC) protocol to Xenco Laboratories (Xenco) in Midland, Texas for analysis of dissolved BTEX by EPA Method 8021B, and TPH in the gasoline range (GRO) and diesel range (DRO) by EPA Method 8015B during the January 2019 groundwater sampling event. During the November 2019 event, Arcadis completed the sampling event and submitted groundwater samples to Eurofins Test America. Groundwater samples were placed on ice in insulated coolers and chilled to a temperature of approximately. The coolers were sealed for shipment with proper chain-of-custody documentation and shipped to Eurofins Test America, located in Houston, Texas, for analysis of dissolved BTEX by EPA Method 8021B, and TPH in the gasoline range (GRO) and diesel range (DRO) by EPA Method 8015B.

APPENDIX C

Cumulative Summary of Groundwater Gauging Data

Appendix C
Cumulative Potentiometric Elevation Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-1	3817.26	4	16'-51'	10/1/1998	--	65.86	3751.40		
				1/6/2000	--	66.56	3750.70		
				10/5/2001	--	68.02	3749.24		
				10/17/2001	--	68.21	3749.05		
				2/12/2002	--	69.57	3747.69		
MW-02	3816.07	4	22'-57'	10/1/1998	--	64.75	3751.32		
				1/6/2000	--	65.45	3750.62		
				10/5/2001	--	66.97	3749.10		
				10/17/2001	--	67.33	3748.74		
				2/12/2002	--	68.69	3747.38		
MW-03	3817.41	4	19'-54'	10/1/1998	--	65.83	3751.58		
				1/6/2000	--	66.56	3750.85		
				10/5/2001	--	68.03	3749.38		
				10/17/2001	--	68.37	3749.04		
				2/12/2002	--	69.72	3747.69		
MW-04	3816.86	4	16'-51'	10/2/1998	--	64.91	3751.95	--	--
				1/6/2000	--	65.65	3751.21	--	0.04
				3/31/2000	--	64.85	-64.85	--	0.03
				10/5/2001	--	67.22	3749.64	67.18	0.04
				10/17/2001	--	67.83	3749.03	67.82	0.01
				2/12/2002	--	--	--	--	trace
MW-05	3816.23	4	15'-50'	1/27/1999	--	65.24	3750.99	--	--
				1/6/2000	--	65.96	3750.27	--	--
				10/5/2001	--	67.44	3748.79	--	--
				10/17/2001	--	67.69	3748.54	--	--
				2/12/2002	--	69.07	3747.16	--	--
MW-06	3817.51	4	10'-45'	1/27/1999	--	65.36	3752.15	--	--
				1/6/2000	--	66.07	3751.44	--	--
				10/5/2001	--	67.54	3749.97	--	--
				10/17/2001	--	67.90	3749.61	--	--
				2/12/2002	--	69.21	3748.30	--	--
							3817.51		
MW-07	3816.25	4	13'-48'	3/24/1999	--	63.28	3752.97	--	--
				1/6/2000	--	63.97	3752.28	--	--
				10/5/2001	--	65.46	3750.79	--	--
				10/17/2001	--	65.98	3750.27	--	--
				2/12/2002	--	67.15	3749.10	--	--
MW-08	3816.38	4	20'-50'	3/24/1999	--	66.09	3750.29	--	--
				1/6/2000	--	66.78	3749.60	--	--
				10/5/2001	--	68.31	3748.07	--	--
				10/17/2001	--	68.45	3747.93	--	--
				2/12/2002	--	69.82	3746.56	--	--
MW-09	3815.72	4	20'-50'	3/24/1999	--	65.55	3750.17	--	--
				1/6/2000	--	66.24	3749.48	--	--
				10/5/2001	--	67.80	3747.92	--	--
				10/17/2001	--	68.08	3747.64	--	--
				2/12/2002	--	69.45	3746.27	--	--
MW-10	3815.74	4	30'-60'	3/31/2000	--	66.78	3748.96	66.45	0.33
				10/5/2001	--	74.19	3741.55	64.45	9.74
				10/17/2001	--	75.46	3740.28	65.33	10.13
				2/12/2002	--	--	--	--	--
WW-1	--	4	40'-80'	10/5/2001	--	62.22	--	--	--
				10/17/2001	--	85.10	--	--	--
				2/12/2002	--	64.35	--	--	--
WW-2	--	4	40'-80'	10/5/2001	--	62.51	--	--	--
				10/7/2001	--	82.70	--	--	--
				2/12/2002	--	64.90	--	--	--
WW-3	--	4	40'-80'	10/5/2001	--	65.00	--	--	--
				10/17/2001	--	85.45	--	--	--
				2/12/2002	--	67.20	--	--	--
WW-4	--	4	40'-80'	10/5/2001	--	67.55	--	--	--
				10/17/2001	--	69.42	--	--	--
				2/12/2002	--	69.30	--	--	--

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
BW-1	3816.14	4	25'-125'	6/16/2005	--	86.75	3729.39	--	--
				7/27/2005	--	92.32	3723.82	--	--
				9/21/2005	--	90.41	3725.73	--	--
				12/9/2005	--	88.38	3727.76	--	--
				5/9/2007	NM				
				6/13/2008	--	94.25	3721.89	--	--
				9/17/2008	--	97.51	3718.63	--	--
				1/26/2009	--	91.08	3725.06	--	--
				7/9/2009	--	98.83	3717.31	--	--
				1/25/2010	--	95.08	3721.06	--	--
				7/6/2010	--	100.81	3715.33	--	--
				1/25/2011	--	98.03	3718.11	--	--
				7/11/2011	--	107.50	3708.64	--	--
				10/15/2012	--	110.31	3705.83	--	--
				1/21/2013	--	102.92	3713.22	--	--
				7/22/2013	--	109.41	3706.73	--	--
				3/4/2014	--	100.75	3715.39	--	--
				10/15/2014	--	109.21	3706.93	--	--
				3/20/2015	--	99.83	3716.31	--	--
				10/12/2015	--	106.81	3709.33	--	--
				3/14/2016	--	101.45	3714.69	--	--
				10/3/2016	--	110.06	3706.08	--	--
				3/13/2017	--	103.00	3713.14	--	--
				9/11/2017	--	114.04	3702.10	--	--
				3/12/2018	--	105.72	3710.42	--	--
				9/10/2018	--	117.34	3698.80	--	--
				1/17/2019	--	107.45	3708.69	--	--
				11/20/2019	126.40	113.78	3702.36	--	--
BW-2	3816.57	4	25'-125'	6/16/2005		86.38	3730.19	--	--
				7/27/2005		90.70	3725.87	--	--
				9/21/2005		89.99	3726.58	--	--
				12/9/2005		88.21	3728.36	--	--
				5/9/2007	NM				
				6/13/2008		95.16	3721.41	--	--
				9/17/2008		96.92	3719.65	--	--
				1/26/2009		91.13	3725.44	--	--
				7/9/2009		98.47	3718.10	--	--
				7/6/2010		100.10	3716.47	--	--
				1/27/2011		97.76	3718.81	--	--
				7/11/2011		107.91	3708.66	--	--
				10/15/2012		109.20	3707.37	--	--
				1/21/2013		102.53	3714.04	--	--
				7/22/2013		108.42	3708.15	--	--
				3/4/2014		100.51	3716.06	--	--
				10/15/2014		108.39	3708.18	--	--
				3/16/2015		99.65	3716.92	--	--
				10/12/2015		106.23	3710.34	--	--
				3/14/2016		101.13	3715.44	--	--
				10/3/2016		109.72	3706.85	--	--
				3/13/2017		102.65	3713.92	--	--
				9/11/2017		112.91	3703.66	--	--
				3/12/2018		105.72	3710.85	--	--
				9/10/2018		116.12	3700.45	--	--
				1/17/2019		107.08	3709.49	--	--
				11/20/2019	127.91	113.02	3703.55	--	--
								--	--
BW-3	3815.82	4	25'-125'	6/16/2005	123.09	87.39	3728.43	--	--
				7/27/2005	--	92.72	3723.10	--	--
				9/22/2005	--	91.07	3724.75	--	--
				12/9/2005	--	88.46	3727.36	--	--
				5/9/2007	--	--	--	--	--
				9/17/2008	--	98.57	3717.25	--	--
				1/26/2009	--	92.44	3723.38	--	--
				7/9/2009	--	100.44	3715.38	--	--
				7/6/2010	--	101.96	3713.86	--	--
				1/25/2011	NM				
				7/11/2011	--	108.64	3707.18	--	--
				10/15/2012	--	111.87	3703.95	--	--
				1/21/2013	--	103.38	3712.44	--	--
				7/22/2013	--	110.71	3705.11	--	--
				3/4/2014	--	101.10	3714.72	--	--
				10/15/2014	--	110.22	3705.60	--	--
				3/16/2015	--	100.18	3715.64	--	--
				10/12/2015	--	102.88	3712.94	--	--
				3/14/2016	--	102.10	3713.72	--	--
				10/3/2016	--	112.00	3703.82	--	--
				3/13/2017	--	103.60	3712.22	--	--
				9/11/2017	--	115.90	3699.92	--	--
				3/12/2018	--	106.43	3709.39	--	--
				9/10/2018	--	119.40	3696.42	--	--
				1/17/2019	--	107.97	3707.85	--	--
				11/20/2019	120.22	Dry	--	--	--

Appendix C
Cumulative Potentiometric Elevation Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-A	3816.04	4	65'-105'	6/16/2005	100.51	86.75	3729.29	--	--
				7/25/2005	NM				
				9/19/2005	--	90.41	3725.63	--	--
				12/5/2005	--	88.38	3727.66	--	--
				5/9/2007	NM				
				7/1/2008	NM				
MW-B	3816.09	4	65'-105'	6/16/2005	108.11	87.15	3728.94	--	--
				7/25/2005	--	92.55	3723.54	--	--
				9/19/2005	--	90.82	3725.27	--	--
				12/5/2005	--	88.73	3727.36	--	--
				5/9/2007	--	91.78	3724.31	--	--
				10/2/2007	--	92.94	3723.15	--	--
				6/13/2008	--	95.05	3721.04	--	--
				9/15/2008	--	98.39	3717.70	--	--
				1/26/2009	--	91.36	3724.73	--	--
				7/9/2009	--	99.76	3716.33	--	--
				1/25/2010	107.65	95.21	3720.88	--	--
				7/6/2010	--	101.50	3714.59	--	--
				1/27/2011	--	98.36	3717.73	--	--
				7/11/2011	NM				
				10/15/2012	NM				
				1/21/2013	--	103.00	3713.09	--	--
				7/22/2013	NM				
				3/4/2014	--	100.78	3715.31	--	--
				10/15/2014	NM				
				3/16/2015	--	100.02	3716.07	--	--
				10/12/2015	--	107.35	3708.74	--	--
				3/14/2016		101.95	3714.14	--	--
				10/3/2016	NM				
				3/13/2017	--	103.20	3712.89	--	--
				9/11/2017	--	114.04	3702.05	--	--
				3/12/2018	--	105.75	3710.34	--	--
				9/10/2018	NM				
				1/17/2019	NM				
				11/20/2019	110.92	Dry	--	--	--
MW-C	3817.04	4	65'-105'	6/15/2005	108.05	87.83	3729.21	--	--
				7/25/2005	--	92.53	3724.51	--	--
				9/19/2005	--	91.54	3725.50	--	--
				12/5/2005	--	89.50	3727.54	--	--
				5/9/2007	--	92.56	3724.48	--	--
				10/2/2007	--	93.66	3723.38	--	--
				6/13/2008	--	95.21	3721.83	--	--
				9/15/2008	--	98.75	3718.29	--	--
				1/26/2009	--	92.10	3724.94	--	--
				7/9/2009	--	99.78	3717.26	--	--
				1/25/2010	106.35	96.09	3720.95	--	--
				7/6/2010	--	101.78	3715.26	--	--
				1/27/2011	--	98.92	3718.12	--	--
				7/11/2011	NM				
				10/15/2012	NM				
				1/21/2013	--	103.93	3713.11	--	--
				7/22/2013	NM				
				3/4/2014	--	101.92	3715.12	--	--
				10/15/2014	NM				
				3/16/2015	--	100.85	3716.19	--	--
				10/12/2015	NM				
				3/14/2016	--	102.46	3714.58	--	--
				10/3/2016	NM				
				3/13/2017	NM				
				9/11/2017	NM				
				3/12/2018	NM				
				9/10/2018	NM				
				plugged					
MW-CR	3817.99	4	65'-105'	10/3/2016	--	111.13	3706.86	--	--
				3/13/2017	--	103.80	3714.19	--	--
				9/11/2017	--	114.65	3703.34	--	--
				3/12/2018	--	106.55	3711.44	--	--
				9/10/2018	--	118.01	3699.98	--	--
				1/17/2019	--	108.17	3709.82	--	--
				11/20/2019	136.40	114.44	3703.55	--	--

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-D	3816.08	4	65'-105'	3/2/2005	107.92	82.68	3733.40	--	--
				9/19/2005	--	90.48	3725.60	--	--
				12/5/2005	--	88.44	3727.64	--	--
				5/9/2007	--	91.49	3724.59	--	--
				9/27/2007	--	92.62	3723.46	--	--
				6/13/2008	--	94.43	3721.65	--	--
				9/15/2008	--	97.49	3718.59	--	--
				1/26/2009	--	91.08	3725.00	--	--
				7/9/2009	--	98.82	3717.26	--	--
				1/25/2010	106.90	95.40	3720.68	--	--
				7/6/2010	--	100.57	3715.51	--	--
				1/25/2011	--	97.68	3718.40	--	--
				7/11/2011	NM				
				10/15/2012	NM				
				1/21/2013	--	102.71	3713.37	--	--
				7/22/2013	NM				
				3/4/2014	--	101.00	3715.08	--	--
				10/15/2014	NM				
				3/16/2015	--	99.80	3716.28	--	--
				10/12/2015	--	105.99	3710.09	--	--
				3/14/2016	--	101.63	3714.45	--	--
				10/3/2016	NM				
				3/13/2017	--	103.15	3712.93	--	--
				9/11/2017	NM				
				3/12/2018	--	105.96	3710.12	--	--
				9/10/2018	NM				
				1/17/2019	NM				
				11/20/2019	112.44	Dry	--	--	--
MW-D2	3815.93	4	62'-242'	5/9/2007	204.00	91.63	3724.30	--	--
				9/26/2007	--	92.79	3723.14	--	--
				6/13/2008	--	94.93	3721.00	--	--
				9/15/2008	--	97.77	3718.16	--	--
				1/26/2009	--	91.12	3724.81	--	--
				7/9/2009	--	99.30	3716.63	--	--
				1/25/2010	--	95.27	3720.66	--	--
				7/6/2010	--	100.93	3715.00	--	--
				1/26/2011	--	97.76	3718.17	--	--
				7/11/2011	--	109.10	3706.83	--	--
				10/15/2012	--	110.30	3705.63	--	--
				1/21/2013	--	102.80	3713.13	--	--
				7/22/2013	--	110.01	3705.92	--	--
				3/4/2014	--	101.18	3714.75	--	--
				10/15/2014	--	108.69	3707.24	--	--
				3/16/2015	--	99.96	3715.97	--	--
				10/12/2015	--	106.27	3709.66	--	--
				3/14/2016	--	102.10	3713.83	--	--
				10/3/2016	--	109.72	3706.21	--	--
				3/13/2017	--	103.51	3712.42	--	--
				9/11/2017	--	113.95	3701.98	--	--
				3/12/2018	--	106.52	3709.41	--	--
				9/18/2018	NM				
				1/17/2019	--	107.48	3708.45	--	--
				11/20/2019	>200	113.50	3702.43	--	--
MW-E	3816.31	4	65'-105'	9/19/2005	107.99	90.39	3725.92	--	--
				12/5/2005	--	88.40	3727.91	--	--
				5/9/2007	--	91.47	3724.84	--	--
				9/27/2007	--	92.60	3723.71	--	--
				7/1/2008	--	95.54	3720.77	--	--
				9/15/2008	--	97.21	3719.10	--	--
				1/26/2009	--	91.11	3725.20	--	--
				7/9/2009	--	98.81	3717.50	--	--
				1/25/2010	107.01	95.20	3721.11	--	--
				7/6/2010	--	100.37	3715.94	--	--
				1/26/2011	--	97.50	3718.81	--	--
				7/11/2011	NM				
				10/15/2012	NM				
				1/21/2013	--	102.52	3713.79	--	--
				7/22/2013	NM				
				3/4/2014	--	101.16	3715.15	--	--
				10/15/2014	NM				
				3/16/2015	--	99.84	3716.47	--	--
				10/12/2015	--	105.48	3710.83	--	--
				3/14/2016	--	101.89	3714.42	--	--
				10/3/2016	NM				
				3/13/2017	--	103.30	3713.01	--	--
				9/11/2017	NM				
				3/12/2018	--	106.04	3710.27	--	--
				9/10/2018	NM				
				1/17/2019	NM				
				11/20/2019	111.82	Dry	--	--	--

ARCADIS Design & Consultancy for natural and built assets

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-F	3816.69	4	65'-105'	9/19/2005	108.09	89.86	3726.83	--	--
				12/5/2005	--	88.09	3728.60	--	--
				5/9/2007	--	91.21	3725.48	--	--
				9/27/2007	--	92.26	3724.43	--	--
				7/1/2008	--	93.93	3722.76	--	--
				9/15/2008	--	96.49	3720.20	--	--
				1/26/2009	--	91.10	3725.59	--	--
				7/9/2009	--	98.00	3718.69	--	--
				1/25/2010	106.70	94.89	3721.80	--	--
				7/6/2010	--	99.50	3717.19	--	--
				1/25/2011	--	97.20	3719.49	--	--
				7/11/2011	--	106.29	3710.40	--	--
				10/15/2012			NM		
				1/21/2013	--	102.16	3714.53	--	--
				7/22/2013			NM		
				3/4/2014	--	101.02	3715.67	--	--
				10/15/2014			NM		
				3/16/2015	--	99.81	3716.88	--	--
				10/12/2015	--	104.79	3711.90	--	--
				3/14/2016	--	101.55	3715.14	--	--
				10/3/2016			NM		
				3/13/2017	--	103.00	3713.69	--	--
				9/11/2017			NM		
				3/12/2018	--	105.74	3710.95	--	--
				9/10/2018			NM		
				1/17/2019			NM		
				11/20/2019	112.11	Dry	--	--	--
MW-G	3818.23	4	65'-105'	9/19/2005	108.05	89.46	3728.77	--	--
				12/5/2005	--	88.18	3730.05	--	--
				5/9/2007	--	91.19	3727.04	--	--
				10/1/2007	--	92.08	3726.15	--	--
				7/1/2008	--	95.54	3722.69	--	--
				9/15/2008	--	95.70	3722.53	--	--
				1/26/2009	--	91.48	3726.75	--	--
				7/9/2009	--	96.72	3721.51	--	--
				1/25/2010	106.55	95.01	3723.22	--	--
				7/6/2010	--	98.50	3719.73	--	--
				1/25/2011	--	97.35	3720.88	--	--
				7/11/2011	--	103.60	3714.63	--	--
				10/15/2012			NM		
				1/21/2013	--	102.14	3716.09	--	--
				7/22/2013			NM		
				3/4/2014	--	101.10	3717.13	--	--
				10/15/2014			NM		
				3/16/2015	--	100.21	3718.02	--	--
				10/15/2015	--	104.32	3713.91	--	--
				3/14/2016	--	101.15	3717.08	--	--
				10/3/2016			NM		
				3/13/2017	--	102.70	3715.53	--	--
				9/11/2017			NM		
				3/12/2018	--	4/14/1900	3713.12	--	--
				9/10/2018			NM		
				1/17/2019			NM		
				11/20/2019	109.68	Dry	--	--	--
MW-H	3816.74	4	65'-105'	6/15/2005	108.10	86.46	3730.28	--	--
				7/25/2005	--	91.05	3725.69	--	--
				9/19/2005	--	90.15	3726.59	--	--
				12/5/2005	--	88.30	3728.44	--	--
				5/9/2007	--	91.30	3725.44	--	--
				10/2/2007	--	92.37	3724.37	--	--
				6/13/2008	--	93.94	3722.80	--	--
				9/15/2008	--	97.28	3719.46	--	--
				1/26/2009	--	91.14	3725.60	--	--
				7/9/2009	--	98.30	3718.44	--	--
				1/25/2010	105.53	94.91	3721.83	--	--
				7/6/2010	--	101.28	3715.46	--	--
				1/27/2011	--	97.87	3718.87	--	--
				7/11/2011			NM		
				10/15/2012			NM		
				1/21/2013	--	102.59	3714.15	--	--
				7/22/2013			NM		
				3/4/2014	--	100.53	3716.21	--	--
				10/15/2014			NM		
				3/16/2015	--	99.77	3716.97	--	--
				10/12/2015			NM		
				3/14/2016	--	101.22	3715.52	--	--
				10/3/2016			NM		
				3/13/2017	--	102.65	3714.09	--	--
				9/11/2017			NM		
				3/12/2018	--	4/13/1900	3711.77	--	--
				9/10/2018			NM		
				1/17/2019			NM		
				11/20/2019	111.05	Dry	--	--	--

Appendix C
Cumulative Potentiometric Elevation Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-I	3816.94	4	65'-105'	6/15/2005	108.07	85.90	3731.04	--	--
				7/25/2005	--	89.94	3727.00	--	--
				9/19/2005	--	89.50	3727.44	--	--
				12/5/2005	--	87.88	3729.06	--	--
				5/9/2007	--	90.83	3726.11	--	--
				10/1/2007	--	91.82	3725.12	--	--
				6/13/2008	--	93.03	3723.91	--	--
				9/15/2008	--	96.38	3720.56	--	--
				1/26/2009	--	90.78	3726.16	--	--
				7/9/2009	--	97.19	3719.75	--	--
				1/25/2010	103.79	94.52	3722.42	--	--
				7/6/2010	--	99.29	3717.65	--	--
				1/27/2011	--	97.39	3719.55	--	--
				7/11/2011	--	106.76	3710.18	--	--
				10/15/2012	NM				
				1/21/2013	--	102.14	3714.80	--	--
				7/22/2013	NM				
				3/4/2014	--	100.26	3716.68	--	--
				10/15/2014	NM				
				3/16/2015	--	99.44	3717.50	--	--
				10/12/2015	--	105.52	3711.42	--	--
				3/14/2016	--	100.71	3716.23	--	--
				10/3/2016	NM				
				3/13/2017	--	102.30	3714.64	--	--
				9/11/2017	NM				
				3/12/2018	--	104.80	3712.14	--	--
				9/10/2018	NM				
				1/17/2019	NM				
				11/20/2019	111.11	Dry	--	--	--
MW-J	3817.66	4	65'-105'	9/19/2005	108.05	87.24	3730.42	--	--
				12/5/2005	--	86.23	3731.43	--	--
				5/9/2007	--	89.07	3728.59	--	--
				10/1/2007	--	89.86	3727.80	--	--
				6/13/2008	--	90.51	3727.15	--	--
				9/15/2008	--	93.44	3724.22	--	--
				1/26/2009	--	89.58	3728.08	--	--
				7/9/2009	--	93.95	3723.71	--	--
				1/25/2010	105.97	93.03	3724.63	--	--
				7/6/2010	--	96.05	3721.61	--	--
				1/25/2011	--	95.59	3722.07	--	--
				7/11/2011	--	100.22	3717.44	--	--
				10/15/2012	--	103.82	3713.84	--	--
				1/21/2013	--	100.13	3717.53	--	--
				7/22/2013	--	103.40	3714.26	--	--
				3/4/2014	--	98.82	3718.84	--	--
				10/15/2014	--	104.29	3713.37	--	--
				3/16/2015	--	98.21	3719.45	--	--
				10/12/2015	--	102.61	3715.05	--	--
				3/14/2016	--	98.85	3718.81	--	--
				10/3/2016	--	105.01	3712.65	--	--
				3/13/2017	--	100.45	3717.21	--	--
				9/11/2017	NM				
				3/12/2018	--	102.68	3714.98	--	--
				9/10/2018	NM				
				1/17/2019	--	104.87	3712.79	--	--
				11/20/2019	108.65	Dry	--	--	--
MW-L	3818.35	4	65'-105'	9/19/2005	108.07	86.95	3731.40	--	--
				12/5/2005	--	87.80	3730.55	--	--
				5/9/2007	--	90.70	3727.65	--	--
				10/1/2007	--	91.54	3726.81	--	--
				6/13/2008	--	92.29	3726.06	--	--
				9/15/2008	--	95.36	3722.99	--	--
				1/26/2009	--	91.03	3727.32	--	--
				7/9/2009	--	95.76	3722.59	--	--
				1/25/2010	107.20	94.57	3723.78	--	--
				7/6/2010	--	98.03	3720.32	--	--
				1/27/2011	--	97.60	3720.75	--	--
				7/11/2011	--	102.58	3715.77	--	--
				10/15/2012	--	106.09	3712.26	--	--
				1/21/2013	--	101.90	3716.45	--	--
				7/22/2013	--	105.75	3712.60	--	--
				3/4/2014	--	100.96	3717.39	--	--
				10/15/2014	--	106.35	3712.00	--	--
				3/16/2015	--	99.73	3718.62	--	--
				10/12/2015	--	104.44	3713.91	--	--
				3/14/2016	--	100.46	3717.89	--	--
				10/3/2016	--	107.00	3711.35	--	--
				3/13/2017	--	102.05	3716.30	--	--
				9/11/2017	NM				
				3/12/2018	--	104.41	3713.94	--	--
				9/10/2018	NM				
				1/17/2019	--	106.54	3711.81	--	--
				11/20/2019	115.66	Dry	--	--	--
								--	--

ARCADIS Design & Consultancy for natural and built assets

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-M	3817.88	4	65'-105'	9/19/2005	108.04	86.95	3730.93	--	--
				12/5/2005	--	86.06	3731.82	--	--
				5/9/2007	--	88.89	3728.99	--	--
				10/1/2007	--	89.63	3728.25	--	--
				6/13/2008	--	90.18	3727.70	--	--
				9/15/2008	--	92.97	3724.91	--	--
				1/26/2009	--	89.49	3728.39	--	--
				7/9/2009	--	93.50	3724.38	--	--
				1/25/2010	--	92.89	3724.99	--	--
				7/6/2010	--	95.53	3722.35	--	--
				1/25/2011	--	95.35	3722.53	--	--
				7/11/2011	--	99.53	3718.35	--	--
				10/15/2012	--	103.15	3714.73	--	--
				1/21/2013	--	99.90	3717.98	--	--
				7/22/2013	--	102.89	3714.99	--	--
				3/4/2014	--	98.75	3719.13	--	--
				10/15/2014	--	103.77	3714.11	--	--
				3/16/2015	--	98.17	3719.71	--	--
				10/12/2015	--	102.10	3715.78	--	--
				3/14/2016	--	98.65	3719.23	--	--
				10/3/2016	--	104.35	3713.53	--	--
				3/13/2017	--	100.30	3717.58	--	--
				9/11/2017	--	106.20	3711.68	--	--
				3/12/2018	--	102.44	3715.44	--	--
				9/10/2018	NM				
				1/17/2019	--	104.66	3713.22	--	--
				11/20/2019	110.44	Dry	--	--	--
MW-N	3817.7	4	65'-105'	6/16/2005	108.08	86.25	3731.45	--	--
				7/25/2005	--	89.85	3727.85	--	--
				9/19/2005	--	89.73	3727.97	--	--
				12/5/2005	--	88.19	3729.51	--	--
				5/9/2007	--	91.17	3726.53	--	--
				10/2/2007	--	92.12	3725.58	--	--
				6/13/2008	--	93.14	3724.56	--	--
				9/15/2008	--	96.44	3721.26	--	--
				1/26/2009	--	91.24	3726.46	--	--
				7/9/2009	--	97.16	3720.54	--	--
				1/25/2010	108.67	94.94	3722.76	--	--
				7/6/2010	--	99.07	3718.63	--	--
				1/26/2011	--	97.22	3720.48	--	--
				7/11/2011	--	104.40	3713.30	--	--
				10/15/2012	--	107.82	3709.88	--	--
				1/21/2013	--	102.50	3715.20	--	--
				7/22/2013	--	107.27	3710.43	--	--
				3/4/2014	--	100.80	3716.90	--	--
				10/15/2014	--	107.64	3710.06	--	--
				3/16/2015	--	99.91	3717.79	--	--
				10/12/2015	--	105.57	3712.13	--	--
				3/14/2016	--	101.02	3716.68	--	--
				10/3/2016	NM				
				3/13/2017	--	102.60	3715.10	--	--
				9/11/2017	NM				
				3/12/2018	--	105.02	3712.68	--	--
				3/12/2018	--	105.02	3712.68	--	--
				9/10/2018	NM				
				1/17/2019	--	107.09	3710.61	--	--
				11/20/2019	122.22	Dry	--	--	--
MW-O	3814.74	4	65'-105'	7/25/2005	113.05	96.58	3718.16	--	--
				9/19/2005	--	93.71	3721.03	--	--
				12/5/2005	--	90.80	3723.94	--	--
				5/9/2007	--	93.97	3720.77	--	--
				10/2/2007	--	95.44	3719.30	--	--
				6/13/2008	--	92.82	3721.92	--	--
				9/15/2008	--	102.30	3712.44	--	--
				1/26/2009	--	92.41	3722.33	--	--
				7/9/2009	--	103.69	3711.05	--	--
				1/25/2010	112.47	97.04	3717.70	--	--
				7/6/2010	--	104.52	3710.22	--	--
				1/27/2011	--	100.46	3714.28	--	--
				7/11/2011	NM				
				10/15/2012	NM				
				1/21/2013	--	105.35	3709.39	--	--
				7/22/2013	NM				
				3/4/2014	--	102.89	3711.85	--	--
				10/15/2014	NM				
				3/16/2015	--	101.66	3713.08	--	--
				10/12/2015	--	111.03	3703.71	--	--
				3/14/2016	--	104.10	3710.64	--	--
				10/3/2016	NM				
				3/13/2017	NM				
				9/11/2017	NM				
				3/12/2018	NM				
				9/10/2018	NM				
				plugged					

Appendix C
Cumulative Potentiometric Elevation Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-O-R	3815.90	4	65'-105'	10/3/2016	--	115.51	3700.39	--	--
				3/13/2017	--	105.40	3710.50	--	--
				9/11/2017	--	121.25	3694.65	--	--
				3/12/2018	--	108.73	3707.17	--	--
				9/10/2018	--	124.91	3690.99	--	--
				1/17/2019	--	109.83	3706.07	--	--
				11/20/2019	135.45	117.39	3698.51	--	--
MW-P	3814.24	4	65'-105'	6/15/2005	113.05	88.88	3725.36	--	--
				7/25/2005	--	96.83	3717.41	--	--
				9/19/2005	--	92.73	3721.51	--	--
				12/5/2005	--	89.84	3724.40	--	--
				5/9/2007	--	93.07	3721.17	--	--
				9/27/2007	--	94.58	3719.66	--	--
				6/13/2008	--	98.30	3715.94	--	--
				9/15/2008	--	101.73	3712.51	--	--
				1/26/2009	--	91.62	3722.62	--	--
				7/9/2009	--	103.99	3710.25	--	--
				1/25/2010	112.90	96.05	3718.19	--	--
				7/6/2010	--	104.93	3709.31	--	--
				1/27/2011	--	99.60	3714.64	--	--
				7/11/2011	--	111.72	3702.52	--	--
				10/15/2012	NM				
				1/21/2013	--	103.90	3710.34	--	--
				7/22/2013	--	112.72	3701.52	--	--
				3/4/2014	--	101.45	3712.79	--	--
				10/15/2014	--	112.19	3702.05	--	--
				3/16/2015	--	100.93	3713.31	--	--
				10/12/2015	--	109.91	3704.33	--	--
				3/14/2016	--	103.66	3710.58	--	--
				10/3/2016	--	112.75	3701.49	--	--
				3/13/2017	--	104.91	3709.33	--	--
				9/11/2017	NM				
				3/12/2018	--	108.43	3705.81	--	--
				9/10/2018	NM				
				1/17/2019	--	109.00	3705.24	--	--
				11/20/2019	114.5	Dry	--	--	--
MW-Q	3814.23	4	65'-105'	7/25/2005	108.07	96.81	3717.42	--	--
				9/19/2005	--	90.00	3724.23	--	--
				12/5/2005	--	87.53	3726.70	--	--
				5/9/2007	--	90.43	3723.80	--	--
				9/27/2007	--	92.23	3722.00	--	--
				6/13/2008	--	98.61	3715.62	--	--
				9/15/2008	--	98.08	3716.15	--	--
				1/26/2009	--	90.52	3723.71	--	--
				7/9/2009	--	103.51	3710.72	--	--
				1/25/2010	108.41	94.13	3720.10	--	--
				7/6/2010	--	101.92	3712.31	--	--
				1/27/2011	--	97.60	3716.63	--	--
				7/11/2011	NM				
				10/15/2012	NM				
				1/21/2013	--	100.64	3713.59	--	--
				7/22/2013	--	107.82	3706.41	--	--
				3/4/2014	--	99.02	3715.21	--	--
				10/15/2014	--	107.90	3706.33	--	--
				3/16/2015	--	99.72	3714.51	--	--
				10/12/2015	--	105.95	3708.28	--	--
				3/14/2016	--	104.60	3709.63	--	--
				10/3/2016	NM				
				3/13/2017	--	105.70	3708.53	--	--
				9/11/2017	--	107.94	3706.29	--	--
				3/12/2018	--	107.80	3706.43	--	--
				9/10/2018	NM				
				1/17/2019	--	107.06	3707.17	--	--
				11/20/2019	114.59	Dry	--	--	--

Appendix C
Cumulative Potentiometric Elevation Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-R	3810.89	4	65'-105'	9/19/2005	152.93	91.19	3719.70	--	--
				12/5/2005	--	87.71	3723.18	--	--
				5/9/2007	--	90.83	3720.06	--	--
				9/27/2007	--	92.83	3718.06	--	--
				6/13/2008	--	98.18	3712.71	--	--
				9/15/2008	--	100.76	3710.13	--	--
				1/26/2009	--	88.57	3722.32	--	--
				7/9/2009	--	105.25	3705.64	--	--
				1/25/2010	152.29	93.88	3717.01	--	--
				7/6/2010	--	103.95	3706.94	--	--
				1/26/2011	--	97.58	3713.31	--	--
				7/11/2011	--	108.64	3702.25	--	--
				10/15/2012	--	114.39	3696.50	--	--
				1/21/2013	--	101.10	3709.79	--	--
				7/22/2013	--	111.79	3699.10	--	--
				3/4/2014	--	99.49	3711.40	--	--
				10/15/2014	--	109.57	3701.32	--	--
				3/16/2015	--	98.83	3712.06	--	--
				10/12/2015	--	107.52	3703.37	--	--
				3/14/2016	--	102.61	3708.28	--	--
				10/3/2016	--	113.15	3697.74	--	--
				3/13/2017	--	103.60	3707.29	--	--
				9/11/2017	--	121.50	3689.39	--	--
				3/12/2018	--	107.80	3703.09	--	--
				9/10/2018	--	125.00	3685.89	--	--
				1/17/2019	--	106.82	3704.07	--	--
				11/20/2019	141.35	113.96	3696.93	--	--
MW-S	3816.52	4	20'-120'	5/9/2007	122.73	87.07	3729.45	--	--
				10/1/2007	--	87.85	3728.67	--	--
				6/13/2008	--	88.58	3727.94	--	--
				9/15/2008	--	91.27	3725.25	--	--
				1/26/2009	--	87.74	3728.78	--	--
				7/9/2009	--	91.86	3724.66	--	--
				1/25/2010	122.77	91.11	3725.41	--	--
				7/6/2010	--	93.92	3722.60	--	--
				1/25/2011	--	93.60	3722.92	--	--
				7/11/2011	--	98.00	3718.52	--	--
				10/15/2012	--	101.41	3715.11	--	--
				1/21/2013	--	97.91	3718.61	--	--
				7/22/2013	--	100.96	3715.56	--	--
				3/4/2014	--	96.75	3719.77	--	--
				10/15/2014	--	102.00	3714.52	--	--
				3/16/2015	--	96.29	3720.23	--	--
				10/12/2015	--	100.54	3715.98	--	--
				3/14/2016	--	97.03	3719.49	--	--
				10/3/2016	--	102.92	3713.60	--	--
				3/13/2017	--	98.60	3717.92	--	--
				9/11/2017	--	104.90	3711.62	--	--
				3/12/2018	--	100.72	3715.80	--	--
				9/10/2018	--	107.40	3709.12	--	--
				1/17/2019	--	102.82	3713.70	--	--
				11/20/2019	129.7	106.92	3709.60	--	--
MW-T	3816.71	4	20'-120'	5/9/2007	--	N/A[2]	--	--	--
				7/7/2008	--	94.43	3722.28	--	--
				9/15/2008	--	96.81	3719.90	--	--
				1/26/2009	122.17	92.39	3724.32	--	--
				7/9/2009	--	97.92	3718.79	--	--
				7/6/2010	--	99.58	3717.13	--	--
				1/27/2011	--	97.69	3719.02	--	--
				7/11/2011	--	105.15	3711.56	--	--
				10/15/2012	--	105.43	3711.28	--	--
				1/21/2013	--	102.20	3714.51	--	--
				7/22/2013	--	107.70	3709.01	--	--
				3/4/2014	--	100.24	3716.47	--	--
				10/15/2014	--	107.84	3708.87	--	--
				3/16/2015	--	99.45	3717.26	--	--
				10/12/2015	--	105.79	3710.92	--	--
				3/14/2016	--	100.86	3715.85	--	--
				10/3/2016	--	109.18	3707.53	--	--
				3/13/2017	--	102.40	3714.31	--	--
				9/11/2017	--	112.12	3704.59	--	--
				3/12/2018	--	104.98	3711.73	--	--
				9/10/2018	--	115.31	3701.40	--	--
				1/17/2019	--	106.80	3709.91	--	--
				11/20/2019	128.81	112.62	3704.09	--	--

Appendix C
Cumulative Potentiometric Elevation Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well	TOC elev[1]	Well Diameter (inches)	Screen Interval (bgs[3])	Date	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Corrected Groundwater Elevation (ft above MSL[2])	Depth to LNAPL (ft below TOC)	Thickness of LNAPL (ft)
MW-U	3814.94	4	80'-120'	5/9/2007	123.10	91.76	3723.18	--	--
				9/27/2007	--	93.09	3721.85	--	--
				6/13/2008	--	96.34	3718.60	--	--
				9/15/2008	--	99.07	3715.87	--	--
				1/26/2009	--	91.19	3723.75	--	--
				7/9/2009	--	101.27	3713.67	--	--
				1/25/2010	123.09	95.12	3719.82	--	--
				7/6/2010	--	102.33	3712.61	--	--
				1/25/2011	--	98.38	3716.56	--	--
				7/11/2011	--	109.63	3705.31	--	--
				10/15/2012	--	112.01	3702.93	--	--
				1/21/2013	--	102.60	3712.34	--	--
				7/22/2013	--	110.61	3704.33	--	--
				3/4/2014	--	100.45	3714.49	--	--
				10/15/2014	--	109.89	3705.05	--	--
				3/16/2015	--	100.04	3714.90	--	--
				10/12/2015	--	107.66	3707.28	--	--
				3/14/2016	--	102.65	3712.29	--	--
				10/3/2016	--	112.40	3702.54	--	--
				3/13/2017	--	103.81	3711.13	--	--
				9/11/2017	NM				
				3/12/2018	--	106.88	3708.06	--	--
				9/10/2018	NM				
				1/17/2019	--	107.73	3707.21	--	--
				11/20/2019	124.41	114.70	3700.24	--	--
MW-V	3815.04	4	80'-120'	5/9/2007	122.79	92.17	3722.87	--	--
				9/27/2007	--	93.48	3721.56	--	--
				6/13/2008	--	96.14	3718.90	--	--
				9/15/2008	--	99.61	3715.43	--	--
				1/26/2009	--	91.31	3723.73	--	--
				7/9/2009	--	101.25	3713.79	--	--
				1/25/2010	122.84	95.45	3719.59	--	--
				7/6/2010	--	102.80	3712.24	--	--
				1/25/2011	--	98.75	3716.29	--	--
				7/11/2011	--	109.80	3705.24	--	--
				10/15/2012	--	113.00	3702.04	--	--
				1/21/2013	--	103.40	3711.64	--	--
				7/22/2013	--	111.58	3703.46	--	--
				3/4/2014	--	100.92	3714.12	--	--
				10/15/2014	--	110.80	3704.24	--	--
				3/16/2015	--	100.20	3714.84	--	--
				10/12/2015	--	108.37	3706.67	--	--
				3/14/2016	--	102.49	3712.55	--	--
				10/3/2016	--	113.02	3702.02	--	--
				3/13/2017	--	103.80	3711.24	--	--
				9/11/2017	--	117.97	3697.07	--	--
				3/12/2018	--	106.87	3708.17	--	--
				9/10/2018	--	121.30	3693.74	--	--
				1/17/2019	--	108.12	3706.92	--	--
				11/20/2019	130.6	115.35	3699.69	--	--
MW-W	3815.09	4	80'-120'	5/9/2007	122.05	92.76	3722.33	--	--
				9/27/2007	--	94.06	3721.03	--	--
				6/13/2008	--	96.37	3718.72	--	--
				9/15/2008	--	100.23	3714.86	--	--
				1/26/2009	--	91.72	3723.37	--	--
				7/9/2009	--	101.58	3713.51	--	--
				1/25/2010	133.15	95.98	3719.11	--	--
				7/6/2010	--	103.41	3711.68	--	--
				1/26/2011	--	99.24	3715.85	--	--
				7/11/2011	--	110.25	3704.84	--	--
				10/15/2012	--	114.13	3700.96	--	--
				1/21/2013	--	104.11	3710.98	--	--
				7/22/2013	--	112.89	3702.20	--	--
				3/4/2014	--	101.65	3713.44	--	--
				10/15/2014	--	111.77	3703.32	--	--
				3/16/2015	--	100.59	3714.50	--	--
				10/12/2015	--	109.08	3706.01	--	--
				3/14/2016	--	102.75	3712.34	--	--
				10/3/2016	--	113.76	3701.33	--	--
				3/13/2017	--	104.40	3710.69	--	--
				9/11/2017	--	118.61	3696.48	--	--
				3/12/2018	--	107.33	3707.76	--	--
				9/10/2018	NM				
				1/17/2019	--	108.71	3706.38	--	--
				11/20/2019	113.77	Dry	--	--	--

Notes:
[1] TOC - Top of Casing
[2] MSL - Mean Sea Level
[3] bgs - below ground surface
Professional Survey conducted by West Company of Midland, Inc. in March 2013 and January 2015.

APPENDIX D

Cumulative Summary of Groundwater Analytical Results

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-1		11/5/1998	<0.001	<0.001	<0.001	<0.001									
		1/28/1999	<0.001	<0.001	<0.001	<0.001	<0.100	<5							
		1/6/2000	<0.005	<0.005	<0.005	<0.005									
		2/12/2002	<0.001	<0.001	<0.001	<0.001									
MW-2		11/5/1998	<0.001	<0.001	<0.001	<0.001									
		1/28/1999	<0.001	<0.001	<0.001	<0.001	<0.100	<5							
		1/6/2000	<0.005	<0.005	<0.005	<0.005									
		2/12/2002	0.032	<0.001	<0.001	<0.001									
MW-3		11/5/1998	0.147	<0.001	<0.001	<0.001									
		1/28/1999	0.102	<0.001	<0.001	<0.001	<0.100	<5							
		1/6/2000	0.593	<0.005	<0.005	<0.005									
		2/12/2002	0.557	<0.010	<0.010	<0.010									
MW-4		11/5/1998	0.882	0.808	0.085	0.214									
		1/28/1999	1.85	1.89	0.123	0.682	8.07	<5							
		1/6/2000	0.569	0.331	0.055	0.109									
		2/12/2002	0.422	0.379	0.044	0.126									
MW-5		1/28/1999	2.73	0.001	0.002	0.12	5.18	<5							
		1/6/2000	3.1	<0.005	<0.005	0.057									
		2/12/2002	3.06	<0.020	<0.020	<0.020									
MW-6		1/28/1999	2.58	0.003	0.39	0.108	5.38	<5							
		1/6/2000	2.07	<0.005	0.439	0.087									
		2/12/2002	7.03	<0.100	0.7	0.152									
MW-7		3/25/1999	<0.001	<0.001	<0.001	<0.001	<0.100	<5							
		1/6/2000	<0.005	<0.005	<0.005	<0.005									
		2/12/2002	<0.005	<0.005	<0.005	<0.005									
MW-8		3/25/1999	<0.001	<0.001	<0.001	<0.001	<0.100	<5							
		1/6/2000	<0.005	<0.005	<0.005	<0.005									
		2/12/2002	<0.001	<0.001	<0.001	<0.001									
MW-9		3/25/1999	0.104	<0.001	<0.001	0.002	0.155	<5							
		4/14/1999	<0.001	<0.001	<0.001	<0.001	<0.100	<5							
		1/6/2000	<0.005	<0.005	<0.005	<0.005									
		2/12/2002	0.0474	<0.001	<0.001	<0.001									
WW-1		10/17/2001	<0.001	<0.001	<0.001	<0.001								655	1,790
		2/12/2002	<0.001	<0.001	<0.001	<0.001								77.5	
WW-2		10/17/2001	<0.001	<0.001	<0.001	<0.001								45.5	389
		2/12/2002	<0.000	<0.000	<0.000	<0.000									
WW-3		10/17/2001	<0.001	<0.001	<0.001	<0.001								102	478
		2/12/2002	<0.001	<0.001	<0.001	<0.001								125	
WW-4		10/17/2001	<0.001	<0.001	<0.001	<0.001								58	446
		2/12/2002	<0.001	<0.001	<0.001	<0.001								56.5	
AST WW		10/17/2001	<0.001	<0.001	<0.001	<0.001								43.6	396
		2/12/2002	<0.001	<0.001	<0.001	<0.001								39.4	

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
BW-1		6/16/2005	<0.005	<0.005	<0.005	<0.005									
		7/27/2005	<0.001	<0.001	<0.001	<0.001									
		9/21/2005	<0.001	<0.001	<0.001	<0.001									
		12/9/2005	0.184	0.24	0.0458	0.172									
		7/2/2008	0.0052	0.0018	0.0007	0.0018	0.027	0.077							
		9/18/2008	0.0022	0.0014	0.0007 J	0.0015 J	<0.02	0.076 J							
		2/11/2009	0.0004	0.0002 J	0.0002 J	<0.0006	<0.02	0.031							
		7/14/2009	<0.0002	<0.0002	0.0003 J	<0.0006	0.035 J	0.13							
		1/26/2010	<0.0002	0.0002 J	<0.0002	<0.0006	<0.02	0.073 J							
		7/7/2010	<0.0002	0.0003 J	<0.0002	<0.0006	<0.02	0.070 J							
		1/25/2011	<0.001	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/13/2011	<0.001	<0.0020	<0.0010	<0.0010	<1.5	<1.5							
		10/16/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50							
		1/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50							
		7/23/2013	<0.00182	<0.00200	<0.00123	<0.00100	<1.44	<1.44							
		3/4/2014	0.239	<0.00200	<0.00100	0.00644	<1.34	<1.34							
		10/16/2014	0.00113	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/20/2015	0.381	0.00251	<0.00100	0.00805	<1.50	<1.50	<1.50						
		10/15/2015	0.0625	<0.00200	<0.00100	0.00581	<1.41	<1.41	<1.41						
	Dup-3 (BW-1)	10/15/2015	0.0506	<0.00200	<0.00100	0.00425	<1.40	<1.40	<1.40						
		3/17/2016	0.35	0.00253	0.00315	0.0123	<2.34	<2.34	<2.34						
		10/5/2016	0.13	0.00347	<0.00200	0.0138	<1.50	<1.50	<1.50						
		3/14/2017	1.25	<0.0500	<0.0500	<0.0500	<1.50	<1.50	<1.50						
		9/13/2017	0.0364	<0.00200	<0.00200	<0.00400	<1.50	<1.50	<1.50						
		3/16/2018	0.2060	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/11/2018	<0.0437	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/16/2019	0.00724	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	49.60	236.00	0.944		
		11/22/2019	<0.00100	<0.00100	<0.00100	<0.00200	<0.10	<0.50	<0.50						
BW-2		6/16/2005	0.0039	0.0026	<0.001	0.001									
		7/27/2005	<0.001	<0.001	<0.001	<0.001									
		9/21/2005	<0.001	<0.001	<0.001	<0.001									
		12/9/2005	0.076	0.117	0.0272	0.0981									
		7/2/2008	0.0099	0.0025	0.0009	0.0022	0.043	0.11							
		9/18/2008	0.0016	0.0011	0.0003 J	0.0009 J	<0.02	<0.033							
		2/11/2009	0.0002 J	<0.0002	<0.0002	<0.0006	<0.02	<0.031							
		7/16/2009	0.018	0.0002 J	0.0019	0.0009 J	0.087	0.64							
		7/13/2010	0.13	0.038	0.0061	0.013	0.37	0.13							
		1/27/2011	0.005	0.0028	<0.0010	<0.0030	<0.0500	0.025 J							
		7/14/2011	0.00139	<0.0020	<0.0010	<0.0010	<1.5	<1.5							
	DUP-2 (BW-2)	7/14/2011	0.001	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/17/2012	0.00695	0.00613	<0.00100	<0.00100	<1.50	<1.50							
		1/23/2013	0.0503	0.0128	<0.00100	<0.00100	<1.50	<1.50							
		7/24/2013	0.00289	<0.00200	<0.00100	<0.00100	<1.41	<1.41							
		3/5/2014	0.03470	0.00420	<0.00100	<0.00100	<1.34	<1.34							
		10/17/2014	0.00786	0.00451	<0.00100	<0.00100	<1.48	<1.48	<1.48						
	Dup (BW-2)	10/17/2014	0.00867	0.00391	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/26/2015	0.00276	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
	Dup-3 (BW-2)	3/26/2015	0.00293	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/14/2015	0.0101	0.00510	<0.00100	<0.00100	<1.40	<1.40	<1.40						
	Dup-2 (BW-2)	10/14/2015	0.0136	0.00473	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/17/2016	0.0860	0.0266	<0.00200	0.00364	<2.35	<2.35	<2.35						
		10/5/2016	0.0512	0.0188	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/14/2017	0.00938	0.00241	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	0.0414	0.00365	<0.00200	0.00200	<1.50	<1.50	<1.50						
		3/15/2018	0.0022	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		9/11/2018	0.0214	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	0.784 D	0.07960	0.00727	0.02060	<1.50	<1.50	<1.50						
		11/22/2019	0.0130	0.00150	<0.00100	<0.0020	<0.10	<0.48	<0.48						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
BW-3		6/16/2005	4.25	0.11	<0.1	<0.1									
		7/27/2005	<0.001	<0.001	<0.001	<0.001									
		9/22/2005	<0.001	<0.001	<0.001	<0.001									
		12/9/2005	0.0508	0.0769	0.0182	0.0724									
		7/2/2008	0.0073	0.0024	0.001	0.0023	0.035	0.095							
		9/18/2008	0.0029	0.0017	0.0004 J	0.0012 J	<0.02	<0.033							
		2/11/2009	0.0003 J	0.0002 J	<0.0002	<0.0006	<0.02	<0.031							
		7/16/2009	0.012	<0.0002	0.0016	0.0007 J	0.063	0.13							
		1/27/2011		dry											
		7/14/2011	0.0151	0.00774	0.00156	<0.00100	<1.5	<1.5							
		10/17/2012	0.0215	0.00969	<0.00100	<0.00100	<1.50	<1.50							
		1/23/2013	0.00283	0.00313	<0.00100	<0.00100	<1.50	<1.50							
		7/24/2013	0.209	0.0797	<0.00640	0.0177	<1.44	<1.44							
		3/5/2014	1.500	0.4420	0.0489	0.1610	3.710	<1.34							
		10/17/2014	0.026	0.0094	<0.00100	0.0021	<1.48	<1.48							
		3/20/2015	0.073	0.0246	<0.00100	0.00597	<1.50	<1.50	<1.50						
	Dup-2 (BW-3)	3/20/2015	0.0710	0.0239	<0.00100	0.00613	<1.50	<1.50	<1.50						
		10/15/2015	0.206	0.0752	0.00381	0.0177	<1.41	<1.41	<1.41						
		3/17/2016	0.028	0.00591	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016	0.105	0.0335	<0.00200	0.0122	<1.50	<1.50	<1.50						
		3/14/2017	0.0282	0.00889	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/13/2017	0.387	0.0113	<0.00200	0.0193	<1.50	<1.50	<1.50						
		3/13/2018	0.08150	0.00708	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		9/12/2018		dry											
		1/16/2019	3.98 D	1.21 D	0.0322	0.109	2.81	<1.50	2.81	<1.10	64.3	288	<0.100		
MW-A		6/16/2005	0.0348	0.0034	<0.001	<0.001									
		7/26/2005		dry											
		9/20/2005		dry											
		12/8/2005	0.0206	0.0887	0.0159	0.0858									
		7/1/2008		dry											
MW-B		6/16/2005	0.713	0.0266	<0.02	<0.02									
		7/26/2005	0.546	0.917	0.0902	0.485									
		9/20/2005	0.312	0.454	0.0344	0.236									
		12/8/2005	0.103	0.172	<0.02	0.115									
		5/17/2007	0.086	0.0076	0.0005	0.003	0.3	0.088							
		10/2/2007	0.068	0.003	0.0003	0.0009			1.3						
		6/30/2008	0.67	0.025	0.0028	0.02	1.7	0.087**							
		9/17/2008	0.11	0.0041 J	0.0019 J	0.0081 J	0.34	<0.032							
		2/3/2009	0.041	0.0019	0.0004 J	0.0014 J	0.095	<0.056							
		7/15/2009	0.034	<0.0002	0.0013	<0.0006	0.14	0.09 J							
		1/27/2010	0.048	0.0032	<0.0002	0.0016 J	0.28	0.1							
		7/12/2010	0.077	0.0029	<0.0002	0.0016 J	0.26	0.063 J							
		1/27/2011	0.36	0.0096	<0.0010	0.0064	0.914	0.073							
		7/13/2011		dry											
		10/15/2012		dry											
		1/23/2013	2.41	<0.0500	<0.0250	<0.0250	4.97	<1.50	4.97						
		7/23/2013		dry											
		3/5/2014	0.348	<0.00200	<0.00100	0.00273	4.51	<1.34	4.51						
		10/16/2014		dry											
		3/20/2015	4.01	<0.040	<0.0200	0.0568	8.01	<1.50	8.01						
		10/12/2015		dry											
		3/16/2016	4.82	<0.00150	<0.00200	<0.00200	5.27	<2.34	5.27						
		10/5/2016		dry											
		3/15/2017	0.125	0.00243	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		dry											
		3/13/2018	2.0500	<0.100	<0.100	<0.100	5.50	3.02	8.52						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-C	DUP11 (MW-C)	6/15/2005	<0.005	<0.005	<0.005	<0.005									
		7/26/2005	0.414	0.543	0.0885	0.266									
		9/21/2005	0.239	0.317	0.0599	0.17									
		12/8/2005	0.0472	0.0741	0.0162	0.0592									
		5/17/2007	0.012	0.0049	0.0006	0.0019	0.062	0.095							
		10/2/2007	0.029	0.011	0.0011	0.003			<0.095						
		6/30/2008	0.019	0.0053	0.0011	0.0016	0.075	0.26							
		9/17/2008	0.0029	0.0014	0.0006 J	0.0015 J	0.025 J	0.068 J							
		2/5/2009	0.0086	0.0036	0.0007 J	0.0019 J	0.039 J	<0.032							
		7/14/2009	0.0071	0.0002 J	0.0014	0.0006 J	0.093	0.09 J							
		1/27/2010	0.0021	0.0003 J	<0.0002	<0.0006	<0.02	0.061 J							
		7/12/2010	0.0005 J	0.0004 J	<0.0002	<0.0006	0.033 J	0.096 J							
		1/25/2011	0.0024 J	0.0010 J	<0.0010	<0.0030	0.050 J	0.036 J	0.036 J						
		1/27/2011	0.0025	0.0011	<0.0010	<0.0030	<0.0500	0.024 J							
		7/13/2011		---------- dry ----------											
		10/15/2012		---------- dry ----------											
		1/23/2013	0.00434	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/5/2014	0.05820	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/20/2015	0.102	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/12/2015		---------- dry ----------											
		3/16/2016	0.0711	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		plugged													
MW-C-R		10/4/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/14/2017	0.0177	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/11/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	49.40	229.00	1.62		
		11/22/2019	<0.00100	<0.00100	<0.00100	<0.00200	<0.10	<0.49	<0.49						
MW-D	DUP1 (MW-D)	5/15/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006			<0.094						
		6/30/2008	0.039	0.0073	0.0013	0.0013	0.095	0.13							
		9/16/2008	0.0013	0.001 J	0.0005 J	0.0012 J	<0.02	0.088 J							
		2/4/2009	0.0081	0.0023	0.0007 J	0.0019 J	0.034 J	<0.031							
		7/13/2009	<0.0002	<0.0002	<0.0002	<0.0006	0.044 J	0.13							
		1/27/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.046 J							
		7/8/2010	<0.0002	0.0004 J	<0.0002	<0.0006	0.028 J	0.16							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.050						
		7/13/2011		---------- dry ----------											
		10/15/2012		---------- dry ----------											
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/5/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/17/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/15/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016		---------- dry ----------											
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/16/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-D2		5/15/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.026	0.0046	0.0009	0.0009	0.061	0.036							
		9/17/2008	0.0011	0.0008 J	0.0007 J	0.0015 J	<0.02	0.052 J							
		2/4/2009	0.0067	0.0031	0.0006 J	0.0016 J	0.030 J	<0.031							
		7/13/2009	<0.0002	<0.0002	<0.0002	<0.0006	0.023 J	0.086 J							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.049 J							
		7/7/2010	<0.0002	0.0002 J	<0.0002	<0.0006	<0.02	0.060 J							
		1/26/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.050						
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/16/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/24/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		3/5/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/17/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/16/2015	---------- not sampled ----------												
		10/14/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/4/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		9/11/2018	<0.0020	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/15/2019	<0.0020	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50	<1.10	58.80	154.00	2.66		
		11/22/2019	<0.00100	<0.00100	<0.00100	<0.0020	<0.10	<0.49	<0.49						
MW-E		6/15/2005	<0.005	<0.005	<0.005	<0.005									
		5/16/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006			<0.094						
		7/1/2008	0.017	0.005	0.001	0.0011	0.049	0.041							
		9/17/2008	0.01	0.0059	0.0006 J	0.0034	0.055	<0.03							
		2/11/2009	0.0008 J	0.0004 J	0.0003 J	0.0007 J	<0.02	<0.031							
		7/15/2009	<0.0002	<0.0002	0.0002 J	<0.0006	0.044 J	0.33							
		1/27/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.062 J							
		7/8/2010	<0.0002	0.0004 J	<0.0002	<0.0006	<0.02	0.080 J							
		1/26/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/13/2011		---------- dry ----------											
		10/15/2012		---------- dry ----------											
		1/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/17/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016		---------- dry ----------											
		3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/13/2018		---------- dry ----------											
		9/12/2018		---------- dry ----------											

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-F		6/15/2005	<0.005	<0.005	<0.005	<0.005									
		5/16/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006			<0.096						
		7/2/2008	0.013	0.0036	0.0007	0.0008	0.039	0.044							
		9/17/2008	0.0074	0.0042	0.0005 J	0.0025 J	0.039 J	<0.031							
		2/11/2009	0.0004 J	0.0002 J	<0.0002	<0.0006	<0.02	<0.031							
		7/14/2009	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.079 J							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.063 J							
		7/7/2010	0.0002 J	0.0003 J	<0.0002	<0.0006	<0.02	0.11							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/13/2011		---------- insufficient water ----------											
		10/15/2012		---------- dry ----------											
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/17/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016		---------- dry ----------											
		3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	Dup-2 (MW-F)	3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/16/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
MW-G		6/15/2005	<0.005	<0.005	<0.005	<0.005									
		5/16/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		10/1/2007	<0.002	<0.002	<0.002	<0.006			<0.096						
		7/2/2008	0.0081	0.0025	0.0006	0.0006	0.026	<0.029							
		9/17/2008	0.024	0.013	0.001	0.0057	0.11	<0.031							
		2/11/2009	0.0012	0.0005 J	0.0003 J	0.0009 J	<0.02	<0.031							
		7/15/2009	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.11							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.054 J							
		7/7/2010	0.0002 J	0.0003 J	<0.0002	<0.0006	<0.02	0.073 J							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.5	<1.5							
		10/15/2012		---------- dry ----------											
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/17/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
		10/5/2016		---------- dry ----------											
		3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/16/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
	MW-G (Dup)	3/16/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-H		6/15/2005	0.492	0.0219	<0.02	<0.02									
		7/26/2005	1.93	2.01	0.144	0.677									
		9/20/2005	2.35	2.54	0.188	0.932									
		12/6/2005	3.89	2.72	0.202	0.815									
		5/17/2007	0.73	0.082	0.0089	0.031	2.4	0.2							
		10/2/2007	0.2	0.037	0.0027	0.01			<0.094						
		7/2/2008	0.14	0.022	0.0018	0.006	0.36	0.036							
		9/17/2008	0.26	0.077	0.0032	0.022	0.86	0.036 J							
		2/3/2009	0.49	0.056	0.0075	0.022	1.2	0.078 J							
		7/15/2009	0.25	0.0018	0.027	0.012	0.64	0.068 J							
		1/27/2010	0.6	0.061	0.0025	0.017	1.7	0.16							
		7/13/2010	0.71	0.032	0.0016 J	0.0079 J	1.5	0.094 J							
		1/27/2011	4.6	0.28	0.0066	0.055	8.48	0.15							
		7/13/2011		dry											
		10/15/2012		dry											
		1/23/2013	5.93	0.446	0.0373	0.0528	7.55	<1.50	<1.50						
		7/23/2013		dry											
		3/5/2014	5.540	0.784	0.02560	0.08020	7.060	<1.34	<1.34						
		10/16/2014		dry											
		3/26/2015	6.57	0.808	<0.0250	<0.0250	10.1	1.59	11.7						
		10/12/2015		dry											
		3/17/2016	5.08	0.704	<0.00200	<0.00200	6.88	<2.34	<2.34						
		10/5/2016		dry											
		3/14/2017	2.65	0.299	<0.100	<0.100	2.09	1.99	4.08						
		9/12/2017		dry											
		3/13/2018		dry											
MW-I		6/15/2005	0.378	0.0124	<0.01	<0.01									
		7/26/2005	1.1	1.4	0.067	0.491									
		9/20/2005	0.555	0.801	0.0253	0.375									
		12/6/2005	0.496	0.611	0.0287	0.238									
		5/17/2007	0.067	0.032	0.0009	0.007	0.26	0.053							
		10/1/2007	0.033	0.01	<0.002	0.002			<0.097						
		7/1/2008	0.086	0.034	0.0017	0.0059	0.3	0.063							
		9/17/2008	0.0042	0.0022	0.0007 J	0.0019 J	0.029 J	0.091 J							
		2/5/2009	0.012	0.0056	0.0005 J	0.0021 J	0.058	<0.031							
		7/14/2009	0.011	0.0002 J	0.004	0.001 J	0.091	0.1							
		1/27/2010	0.03	0.012	0.0004 J	0.0025 J	0.13	0.065 J							
		7/12/2010	0.041	0.0028	0.0003 J	0.0014 J	0.14	0.047 J							
		1/27/2011	0.0025	0.0018	<0.0010	<0.0030	0.0448 J	<0.050							
		7/14/2011	4.19	0.994	0.049	0.356	6.12	<1.50	<1.50						
		10/15/2012		dry											
		1/23/2013	0.338	0.00613	<0.00100	0.00232	<1.50	<1.50	<1.50						
		7/23/2013		dry											
		3/5/2014	1.110	0.0601	<0.00500	0.00667	1.910	<1.34	<1.34						
		10/16/2014		dry											
		3/26/2015	1.64	0.0934	<0.0200	<0.0200	3.55	<1.50	3.55						
		10/15/2015	0.642	0.045	<0.0200	<0.400	2.19	<1.41	2.190						
		3/17/2016	1.27	0.0585	<0.00200	<0.00200	<2.34	3.76	3.76						
		10/5/2016		dry											
		3/15/2017		insufficient water											
		9/12/2017		dry											
		3/14/2018	0.2960	0.00472	<0.0020	<0.0020	1.75	<1.50	1.75						
	MW-I (Dup)	3/14/2018	0.267	0.004	<0.0020	<0.0020	1.51	<1.50	1.51						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-J		12/6/2005	<0.005	<0.005	<0.005	<0.005									
		5/15/2007	0.0015	<0.002	<0.002	<0.006	<0.02	<0.028							
		10/1/2007	0.0005	<0.002	<0.002	<0.006			<0.096						
		6/30/2008	0.038	0.0073	0.0014	0.0014	0.093	0.28							
		9/16/2008	0.0012	0.0008 J	0.0005 J	0.0011 J	<0.02	0.093 J							
		2/4/2009	0.0078	0.0022	0.0007 J	0.0019 J	0.032 J	<0.031							
		7/13/2009	<0.0002	<0.0002	<0.0002	<0.0006	0.035 J	0.11							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.056 J							
		7/7/2010	<0.0002	0.0002 J	<0.0002	<0.0006	<0.02	0.062 J							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.5	<1.5							
		10/15/2012		---------- insufficient water ----------											
		1/22/2013		---------- insufficient water ----------											
		7/23/2013	<0.0010	<0.0020	<0.0010	<0.0010	1.44	1.44	1.44						
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- insufficient water ----------											
		3/17/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
		10/5/2016		---------- insufficient water ----------											
		3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/14/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
MW-L		6/15/2005	<0.005	<0.005	<0.005	<0.005									
		5/15/2007	<0.002	<0.002	<0.002	<0.006	<0.02	0.038	<0.093						
		10/1/2007	<0.002	<0.002	<0.002	<0.006									
		7/1/2008	0.018	0.0031	0.001	0.0025	0.063	0.089							
		9/16/2008	0.0019	0.0012	<0.0006	<0.0015	<0.02	0.13							
		2/4/2009	0.011	0.003	0.0009 J	0.0024 J	0.041 J	0.042 J							
		7/14/2009	0.0003 J	<0.0002	0.0002 J	<0.0006	0.033 J	0.079 J							
		1/27/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.037 J							
		7/12/2010	<0.0002	0.0003 J	<0.0002	<0.0006	<0.02	0.051 J							
		1/27/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.5	<1.5							
		10/15/2012		---------- insufficient water ----------											
		1/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/17/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
		10/5/2016		---------- insufficient water ----------											
		3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/14/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-M		6/15/2005	<0.005	<0.005	<0.005	<0.005			<0.096						
		5/15/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		10/1/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.042	0.004	0.0011	0.0032	0.11	0.034**							
		9/16/2008	0.0023	0.0013	0.0006 J	0.0014 J	0.022	0.13							
		2/4/2009	0.013	0.0031 J	0.001 J	0.0025 J	0.053	0.036 J							
		7/15/2009	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.071 J							
		1/25/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.25							
		7/6/2010	0.0003 J	0.0003 J	<0.0002	<0.0006	<0.02	0.1							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.050	<0.050							
		7/13/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/16/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<!.50						
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.44	<1.44	<1.44						
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/19/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
	Dup-1 (MW-M)	3/15/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
		10/5/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/16/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- insufficient water ----------											
		3/14/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
MW-N		6/15/2005	<0.001	<0.001	<0.001	<0.001									
		7/26/2005	0.0059	<0.005	<0.005	<0.005									
		9/21/2005	0.0076	<0.001	<0.001	<0.001									
		12/6/2005	<0.001	<0.001	<0.001	<0.001			<0.095						
		5/17/2007	0.0013	0.0007	0.0002	<0.006	0.032	0.067							
		10/2/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.011	0.0031	0.0008	0.0009	0.056	0.05							
		9/17/2008	0.0014	0.0011	0.0007 J	0.0016 J	<0.02	0.073							
		2/5/2009	0.0051	0.0025	0.0006 J	0.0014 J	0.031 J	0.034 J							
		7/13/2009	<0.0002	<0.0002	<0.0002	<0.0006	0.079	0.32							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.041 J							
		7/8/2010	<0.0002	0.0003 J	<0.0002	<0.0006	<0.02	0.062 J							
		1/26/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.050						
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
	DUP-1 (MW-N)	7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/15/2012		---------- dry ----------											
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00351	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/19/2015	0.00295	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.0010	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016		---------- dry ----------											
		3/14/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/14/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-O		7/25/2005	0.0035	<0.001	<0.001	<0.001									
		9/21/2005	0.0102	<0.001	<0.001	<0.001			<0.093						
		12/8/2005	0.0045	<0.001	<0.001	<0.001									
		5/14/2007	0.0072	<0.002	<0.002	<0.006	0.043	0.13							
		10/2/2007	0.0012	0.001	<0.002	<0.006									
		6/30/2008	0.04	0.01	0.0065	0.011	0.15	0.280**							
		9/16/2008	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	<0.031							
		2/2/2009	<0.0002	0.0012	0.0005 J	0.0011 J	<0.02	0.063 J							
		7/13/2009	<0.0002	<0.0002	0.0003 J	<0.0006	0.1	0.36							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	<0.031							
		7/8/2010	<0.0002	0.0003 J	<0.0002	<0.0006	<0.02	0.053 J							
		1/27/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.0500						
		7/13/2011		---------- dry ----------											
		10/15/2012		---------- dry ----------											
		1/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/19/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/12/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/17/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
	Dup-3 (MW-O)	3/17/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		plugged													
MW-O-R		10/4/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/14/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	49.20	250.00	1.13		
		11/22/2019	<0.00100	<0.00100	<0.00100	<0.00200	<0.10	<0.50	<0.50						
MW-P		6/15/2005	1.92	<0.05	<0.05	<0.05									
		7/25/2005	0.179	<0.001	<0.001	<0.001			<0.094						
		9/19/2005	<0.001	<0.001	<0.001	<0.001									
		12/8/2005	<0.001	<0.001	<0.001	<0.001									
		5/14/2007	<0.002	<0.002	<0.002	<0.006	<0.02	0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/17/2008	<0.002	0.003	<0.002	<0.006	<0.037	<0.062							
		9/16/2008	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	<0.031							
		2/2/2009	<0.0002	0.0033	0.0005 J	0.0011 J	<0.02	0.049 J							
		7/13/2009	0.0011	<0.0002	0.0003 J	<0.0006	0.31	4.7							
		1/27/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	<0.031							
		7/12/2010	<0.0002	0.0004 J	<0.0002	<0.0006	0.024 J	0.074 J							
		1/27/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.050						
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/15/2012		---------- dry ----------											
		1/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/19/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
	Dup-1 (MW-P)	10/13/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016		---------- dry ----------											
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/13/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	Dup (MW-P)	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-Q		7/25/2005	<0.001	<0.001	<0.001	<0.001			<0.094						
		9/21/2005	<0.001	<0.001	<0.001	<0.001									
		12/6/2005	<0.001	<0.001	<0.001	<0.001									
		5/14/2007	<0.002	<0.002	<0.002	<0.006	<0.02	<0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/17/2008	0.005	0.006	0.003	0.006	<0.043	<0.062							
		9/16/2008	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	<0.031							
		2/2/2009	<0.0002	0.0021	0.0003 J	0.0007 J	<0.02	0.048 J							
		7/14/2009	<0.0002	<0.0002	0.0003 J	<0.0006	0.16	0.68							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.031 J							
		7/12/2010	<0.0002	0.0004 J	<0.0002	<0.0006	0.046 J	0.420 J							
		1/27/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.050						
		7/13/2011		---------- dry ----------											
		10/15/2012		---------- dry ----------											
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013		---------- dry ----------											
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014		---------- dry ----------											
		3/19/2015	<0.0010	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
	Dup-1 (MW-Q)	3/19/2015	<0.0010	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/15/2015	<0.0010	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
	Dup-2 (MW-Q)	3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.35	<2.35	<2.35						
		10/5/2016		---------- no access ----------											
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- insufficient water ----------											
		3/13/2018		---------- dry ----------											
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
MW-R		8/12/2005	<0.001	<0.001	<0.001	<0.001									
		9/19/2005	<0.001	<0.001	<0.001	<0.001									
		12/8/2005	<0.001	<0.001	<0.001	<0.001									
		5/14/2007	<0.002	<0.002	<0.002	<0.006	<0.02	0.028							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/17/2008	<0.002	<0.002	<0.002	<0.006	<0.061	<0.110							
		9/15/2008	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	<0.039							
		2/2/2009	0.0002 J	0.0005 J	0.0008 J	0.0016 J	0.028 J	0.074 J							
		7/14/2009	<0.0002	<0.0002	0.0002 J	<0.0006	0.049 J	0.13							
		1/27/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.041 J							
		7/8/2010	<0.0002	0.0004 J	<0.0002	<0.0006	<0.02	0.076 J							
		1/26/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.050	<0.050	<0.050						
		7/13/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/17/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		1/23/2013	<0.00100	<0.00200	<0.00100	0.00267	<1.50	<1.50	<1.50						
		7/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/19/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/14/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/17/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/4/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	MW-R (Dup)	9/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	55.20	202.00	2.26		
		11/21/2019	<0.00100	<0.00100	<0.00100	<0.00200	<0.10	<0.48	<0.48						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-S		7/27/2006	<0.0005	<0.0007	<0.0008	<0.0008	0.028	0.053							
		5/14/2007	<0.002	<0.002	<0.002	<0.006	<0.02	0.39							
		10/1/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.039	0.0032	0.0005	0.0021	0.11	<0.043							
		9/16/2008	0.004	0.0018	0.0008 J	0.0019 J	0.029 J	0.35							
		2/4/2009	0.022	0.0048	0.0011	0.0031	0.072	0.044 J							
		7/15/2009	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.050 J							
		1/25/2010	<0.0002	<0.0002	<0.0002	<0.0006	0.023 J	0.18 J							
		7/6/2010	0.0003 J	0.0002 J	<0.0002	<0.0006	<0.02	0.074 J							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050							
		7/13/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.5	<1.5							
		10/16/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50							
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50							
		7/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.42	<1.42							
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34							
	DUP-1 (MW-S)	3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/19/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/15/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/5/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	Dup (MW-S)	10/5/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	Dup (MW-S)	9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/14/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/11/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	79.60	171.00	2.57		
		11/22/2019	<0.00100	<0.00100	<0.00100	<0.00200	<0.10	<0.50	<0.50						
MW-T		7/27/2006	0.36	0.12	0.037	0.15	1.3	0.86							
		9/18/2008	0.0049	0.0028	0.0008 J	0.002 J	0.027 J	0.11							
		2/11/2009	0.0004 J	0.0003 J	<0.0002	<0.0006	<0.02	0.033 J							
		7/16/2009	0.0071	<0.0002	0.0013	0.0008 J	0.044 J	0.13							
		7/13/2010	0.84	0.18	0.026	0.055	2.4	0.070 J							
		1/27/2011	12	1.5	0.2	0.61	22.6	0.41							
		7/13/2011	4.49	0.448	0.0208	0.0576	8.17	<1.5	<0.093						
		10/17/2012	12.8	<0.200	0.260	0.418	15.5	<1.50	15.5						
		1/23/2013	10.5	<0.100	0.104	0.195	12.2	<1.50	12.2						
		7/24/2013	13.1	0.168	0.284	0.519	21.3	<1.43	21.3						
		3/5/2014	3.95	0.0311	0.09950	0.17700	12.3	<1.34	12.3						
		10/17/2014	12.3	<0.100	0.17000	0.35100	15.3	<1.48	15.3						
		3/26/2015	13.4	<0.100	0.234	0.480	16.4	<1.50	16.4						
		10/15/2015	14.9	0.1570	0.34000	0.6590	15.4	<1.41	15.4						
		3/17/2016	11.5	0.0970	0.189	0.316	15.4	<1.41	15.4						
		10/5/2016	9.54	0.0170	0.181	0.329	12.1	<1.50	12.1						
		3/14/2017	11.7	<0.200	0.613	0.670	1.98	<1.50	1.98						
		9/12/2017	2.23	0.2980	<0.0456	0.735	2.18	<1.50	<1.50						
		3/15/2018	9.42	<0.400	<0.400	<0.400	18.80	<1.50	18.80						
		9/11/2018	12.2 D	0.0670	0.242	0.330	15.30	<1.50	15.30						
		1/16/2019	11.4 D	0.1690	0.129	0.217	5.92	<1.50	5.92	<1.10	4.65	375.00	<0.100		
		11/22/2019	7.60	0.0770	0.130	0.018	11.00	<0.50	11.00						

ARCADIS Design & Consultancy for natural and built assets

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-U		4/24/2007	<0.005	0.009	<0.008	<0.008	0.027	0.180*							
		5/16/2007	<0.0002	<0.0002	<0.0002	<0.0006	0.027	0.18							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.004	0.0018	0.0009	0.0019	0.028	0.057**							
		9/17/2008	<0.0002	0.0003 J	0.0002 J	<0.0006	0.025 J	<0.032							
		2/3/2009	<0.0002	0.0021	0.0006 J	0.0013 J	<0.02	0.060 J							
		7/14/2009	<0.0002	<0.0002	<0.0002	<0.0006	0.034 J	0.1							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.049 J							
		7/7/2010	<0.0002	0.0003 J	<0.0002	<0.0006	<0.02	0.070 J							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.0500						
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/16/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.42	<1.42	<1.42						
		3/4/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/16/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/19/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/14/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.40	<1.40	<1.40						
		3/16/2016	<0.00200	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/6/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	Dup-1 (MW-U)	3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017		---------- dry ----------											
		3/15/2018	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.0020	<0.0020	<0.0020	<1.50	<1.50	<1.50						
MW-V		4/24/2007	<0.005	<0.007	<0.008	<0.008	0.028*	0.310*							
		5/16/2008	<0.001	<0.0002	<0.0002	<0.0006	0.028	0.31							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.011	0.0027	0.0012	0.0025	0.044	0.093**							
		9/16/2008	0.0045	<0.0002	<0.0002	<0.0006	0.023 J	0.064 J							
		2/2/2009	<0.0002	0.0078	0.0003 J	0.0007 J	0.023 J	0.066 J							
		7/13/2009	<0.0002	<0.0002	<0.0002	<0.0006	0.027 J	0.14							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.062 J							
		7/7/2010	<0.0002	0.0002 J	<0.0002	<0.0006	<0.02	0.070 J							
		1/25/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.094						
		7/14/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/16/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		1/22/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/24/2013	0.0105	<0.00200	<0.00100	<0.00100	<1.45	<1.45	<1.45						
		3/5/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
	DUP-2 (MW-V)	3/5/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/17/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/16/2015		---------- not sampled ----------											
		10/14/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/16/2016	0.314	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/6/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2017	0.0339	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/15/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50	<1.10	38.00	262.00	1.48		
		11/22/2019	<0.00100	<0.00100	<0.00100	<0.00200	<0.10	<0.49	<0.49						

Appendix D
Cumulative Groundwater Analytical Data
Chevron Environmental Management Company
Lovington Paddock Remediation Site
South ½ of the southeast ¼ of Section 1, Township 17 South, Range 36 East
Lea County, New Mexico

Sample I.D. No.	Replecate Sample I.D.	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-GRO	TPH-DRO	Total TPH	Methane	Sulfate	Alkalinity	Nitrate	Chloride	TDS
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Other Standards for Domestic Water Supply[2]												
			0.01	0.75	0.75	0.62	--	--	--	--	--	--	--	250	1,000
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					mg/L	mg/L
MW-W		4/24/2007	<0.005	<0.007	<0.008	<0.008	0.037*	0.450*							
		5/16/2007	<0.001	<0.0002	<0.0002	<0.0006	0.037	0.45							
		9/27/2007	<0.002	<0.002	<0.002	<0.006									
		6/30/2008	0.031	0.0035	0.0015	0.0032	0.092	0.130**							
		9/16/2008	0.0025	<0.0002	<0.0002	<0.0002	0.021 J	0.068 J							
		2/2/2009	<0.0002	0.0029	0.0004 J	0.0009 J	<0.02	0.078 J							
		7/13/2009	<0.0002	<0.0002	0.0003 J	<0.0006	0.093	0.33							
		1/26/2010	<0.0002	<0.0002	<0.0002	<0.0006	<0.02	0.039 J							
		7/7/2010	<0.0002	0.0003 J	<0.0002	<0.0006	<0.02	0.087 J	<0.096						
		1/26/2011	<0.0010	<0.0010	<0.0010	<0.0030	<0.0500	<0.050	<0.050						
		7/13/2011	<0.0010	<0.0020	<0.0010	<0.0010	<1.50	<1.50	<1.50						
		10/17/2012	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		1/23/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		7/24/2013	<0.00100	<0.00200	<0.00100	<0.00100	<1.46	<1.46	<1.46						
		3/5/2014	0.00141	<0.00200	<0.00100	<0.00100	<1.34	<1.34	<1.34						
		10/17/2014	<0.00100	<0.00200	<0.00100	<0.00100	<1.48	<1.48	<1.48						
		3/20/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.50	<1.50	<1.50						
		10/14/2015	<0.00100	<0.00200	<0.00100	<0.00100	<1.41	<1.41	<1.41						
		3/16/2016	0.0648	<0.00150	<0.00200	<0.00200	<2.34	<2.34	<2.34						
		10/4/2016	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/15/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		9/12/2017	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		3/13/2018	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
		1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						
	Dup (MW-W)	1/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<1.50	<1.50	<1.50						

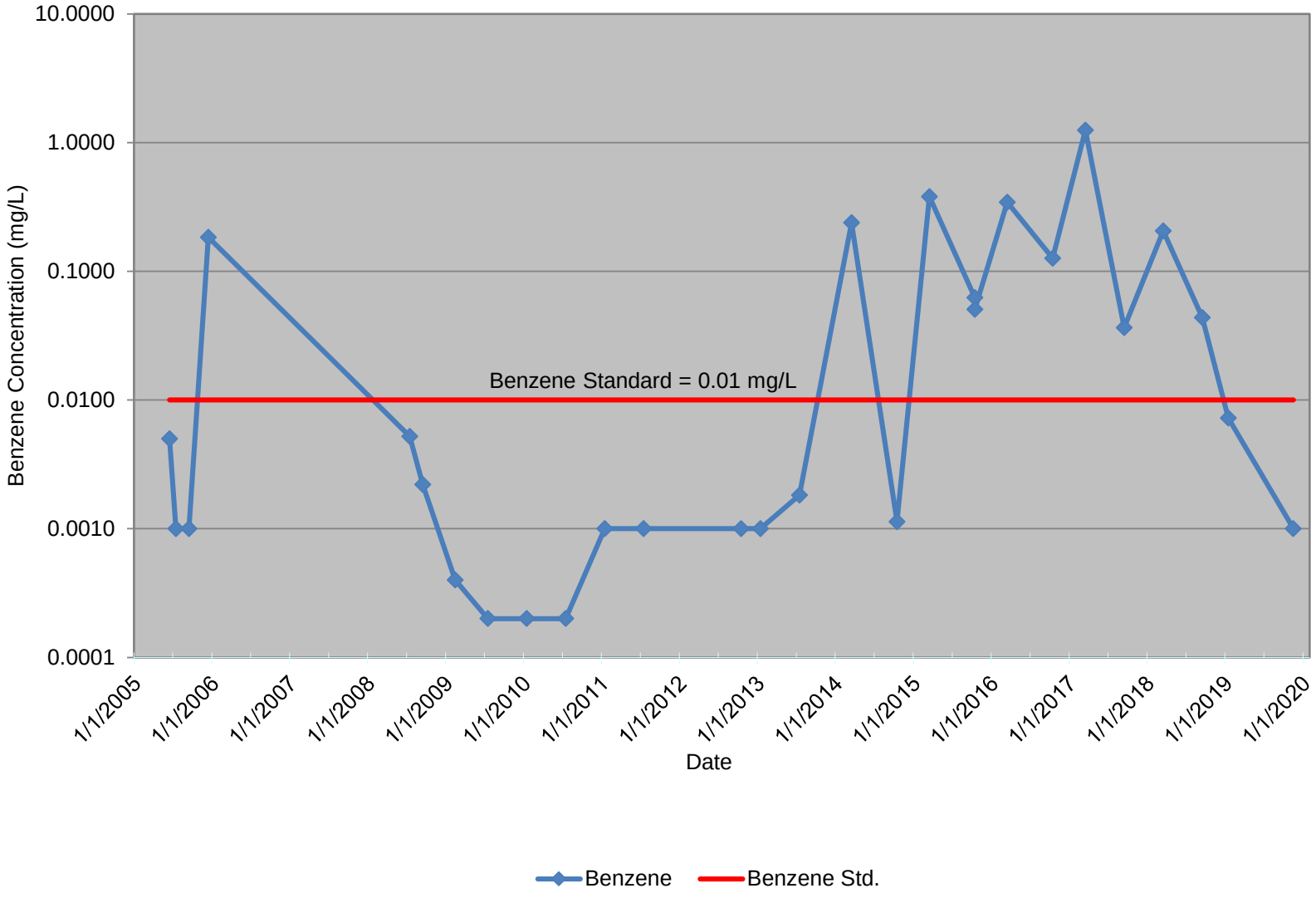
Notes:

1) RCRA Metals Analysis by Environment Protections Agency (EPA) Methods 6010B and 7470A.
2) Groundwater Quality by EPA Methods 160.1, 300.0, and 310.1.
3) Highlighted values indicate concentrations above NMWQCC Other Standards for Domestic Water Supply.
4) [1] NMWQCC Human Health Standards Per NMAC 20.6.2.3103A.
5) [2] NMWQCC Other Standards for Domestic Water Supply Per NMAC 20.6.2.3103B.
6) NA= Not analyzed
7) DUP = Duplicate sample
8) D = Dilution factors are included in the final results. The result is from a diluted sample.
9) * = Likely an order of magnitude higher then actual result; however reported value was verified by the laboratory

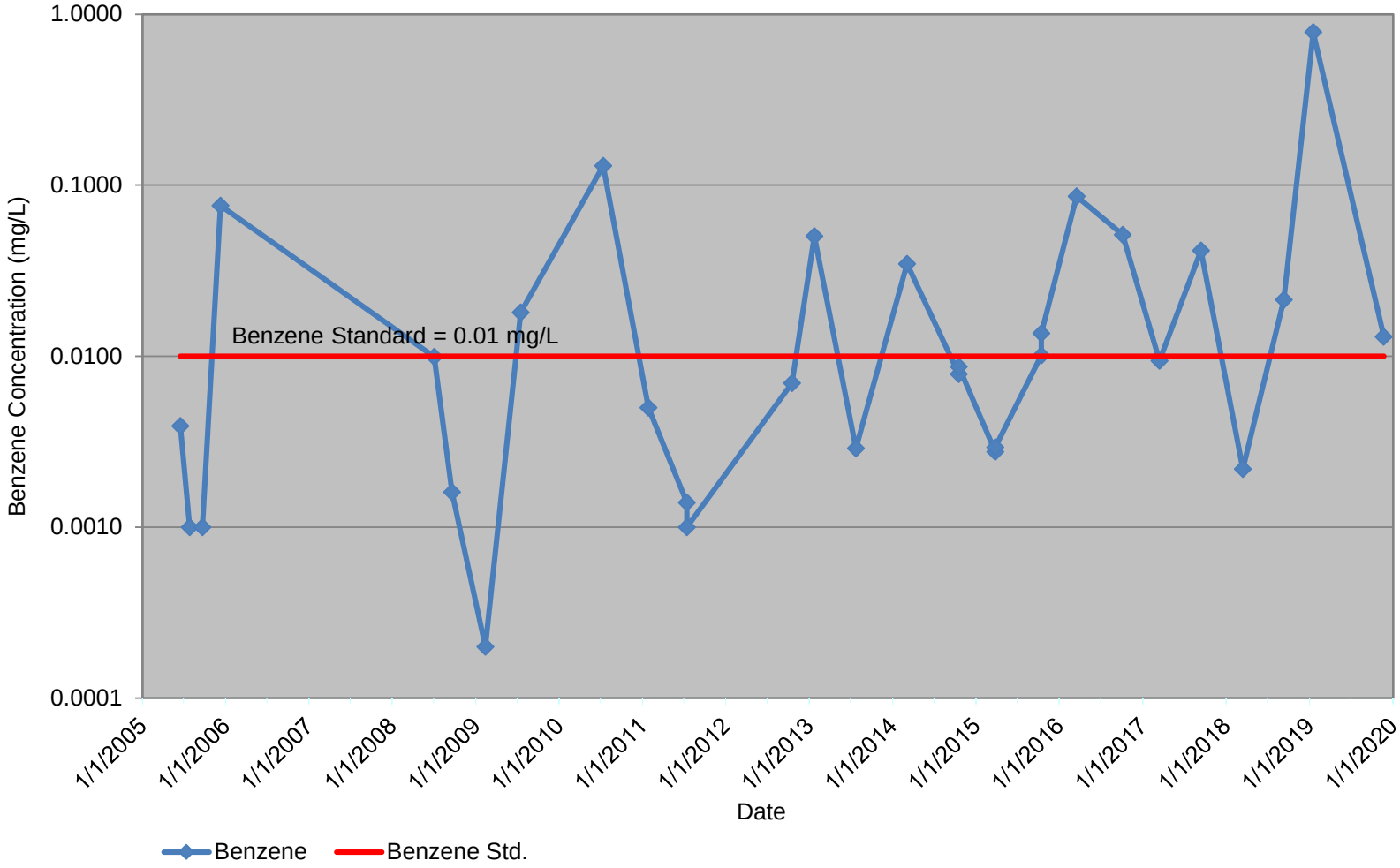
APPENDIX E

Charts of Benzene Concentration Trends

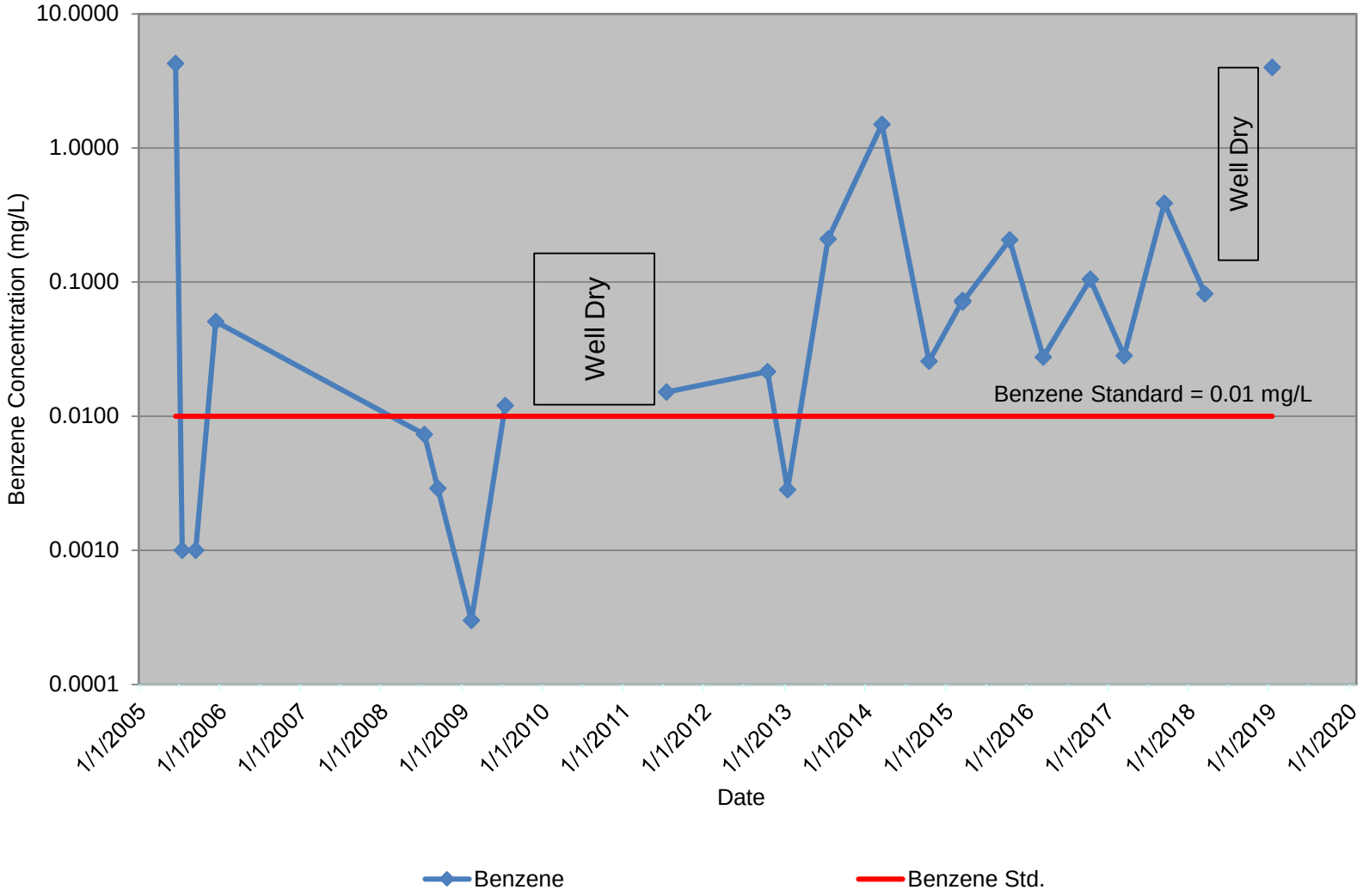
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
BW-1



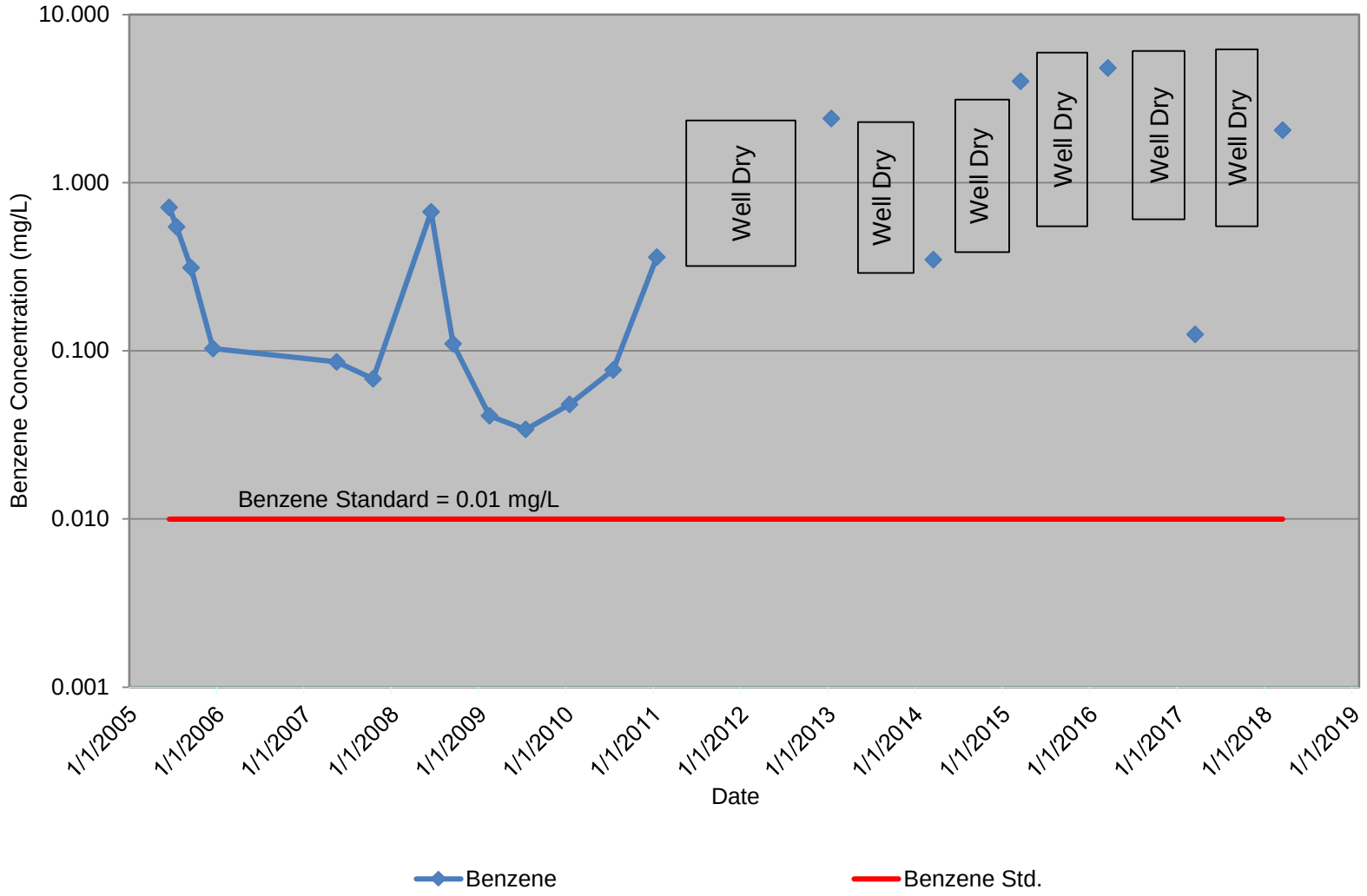
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
BW-2



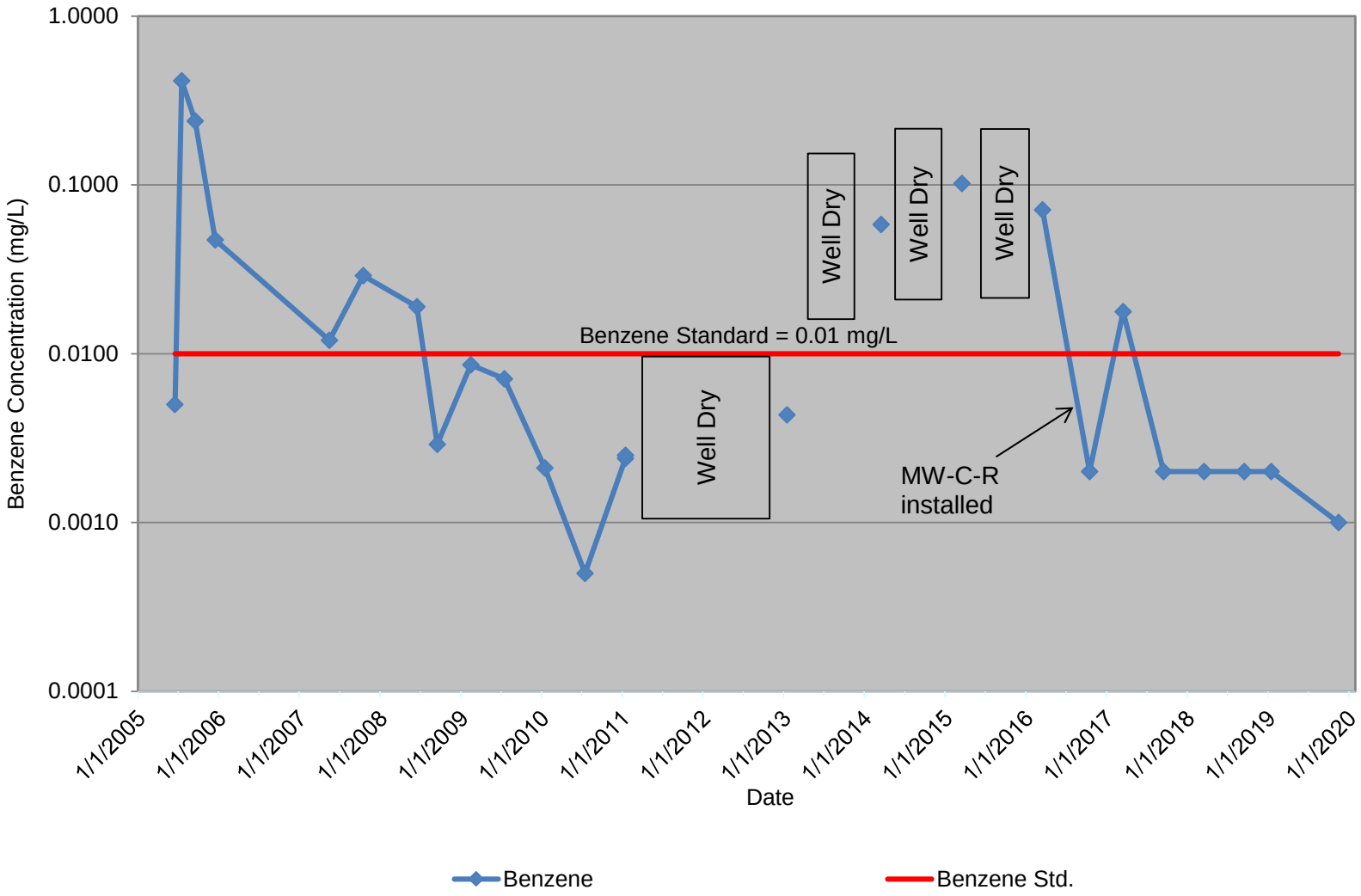
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
BW-3



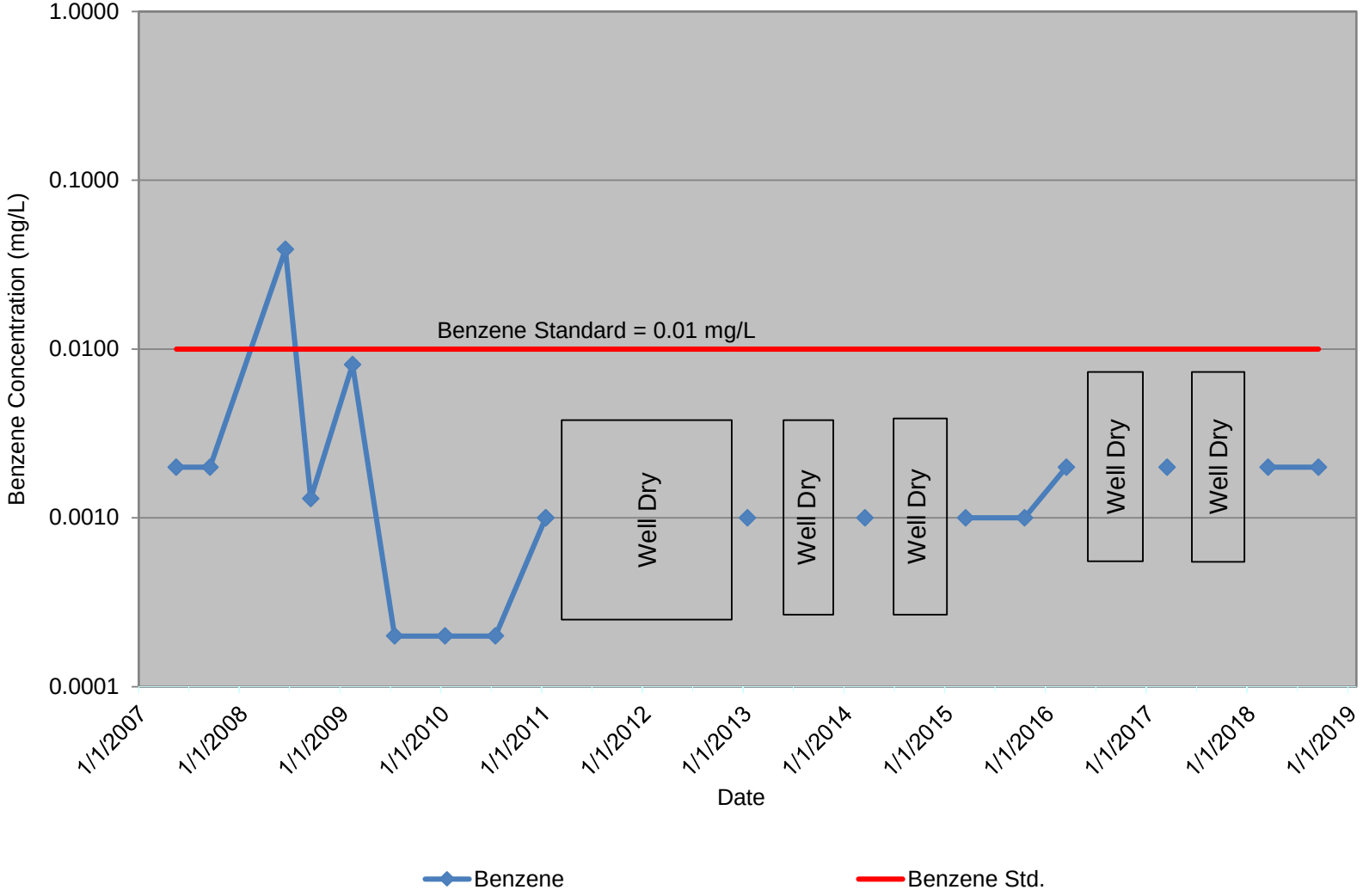
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-B



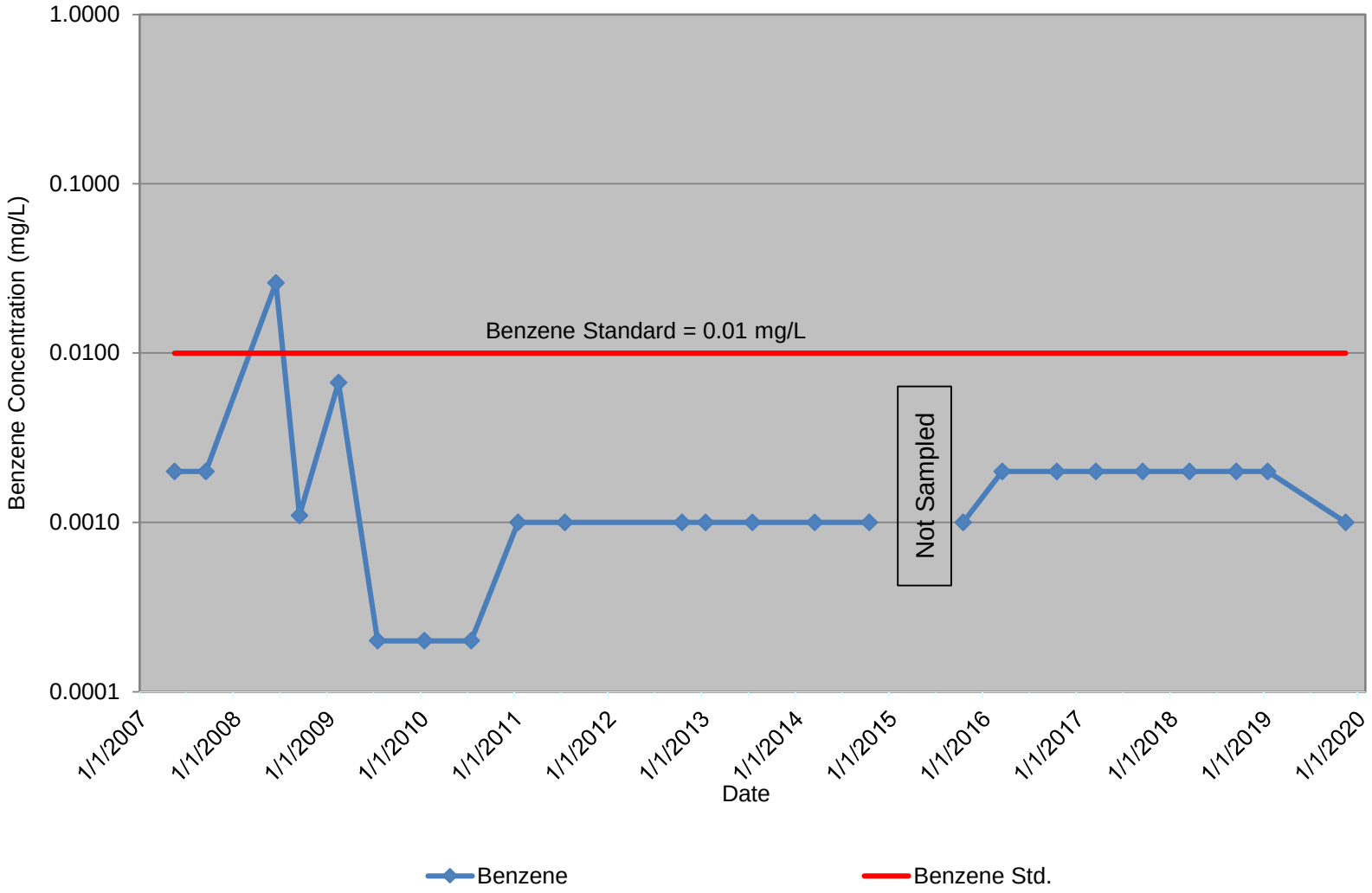
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-C and MW-C-R



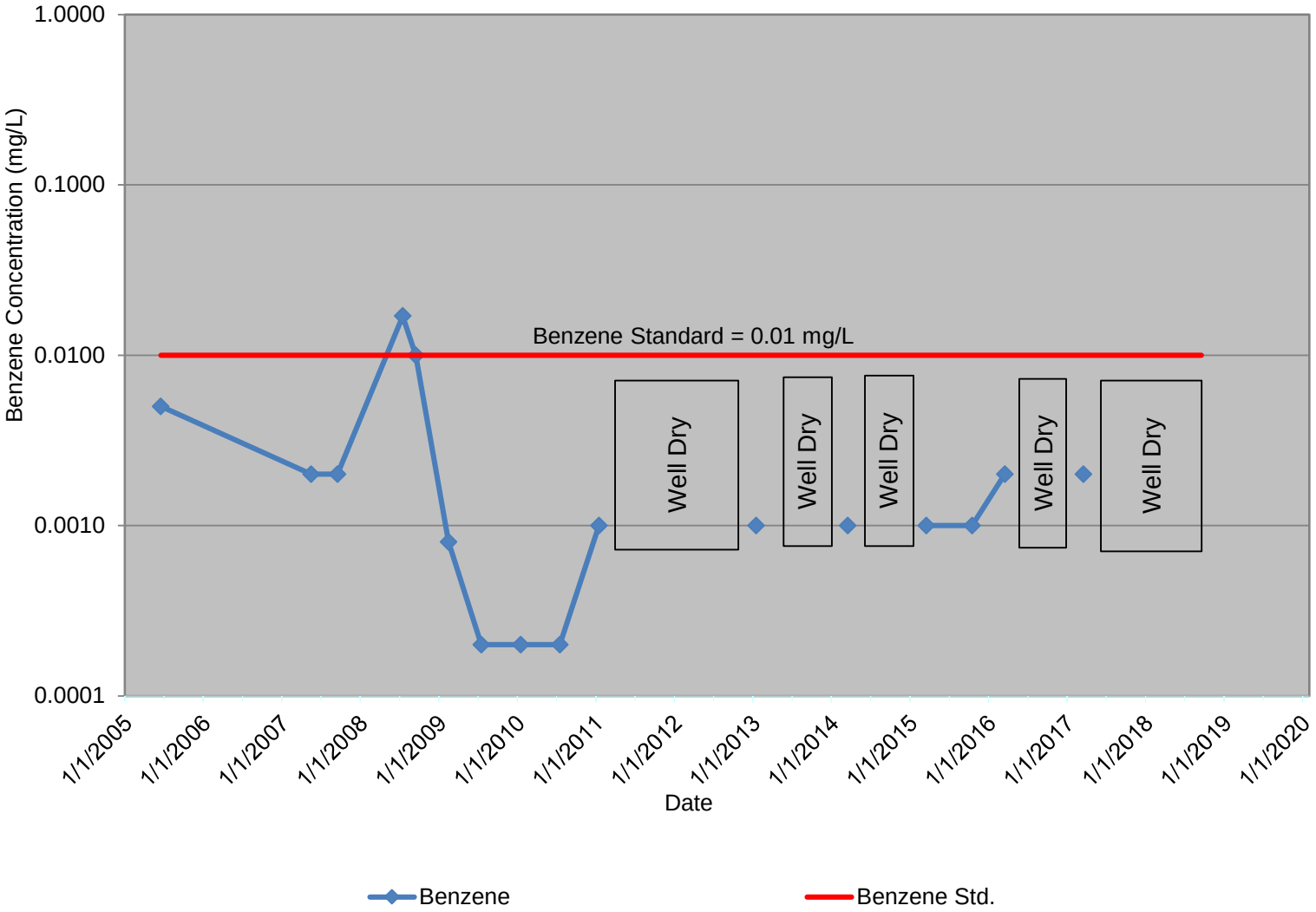
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzen in Groundwater
MW-D



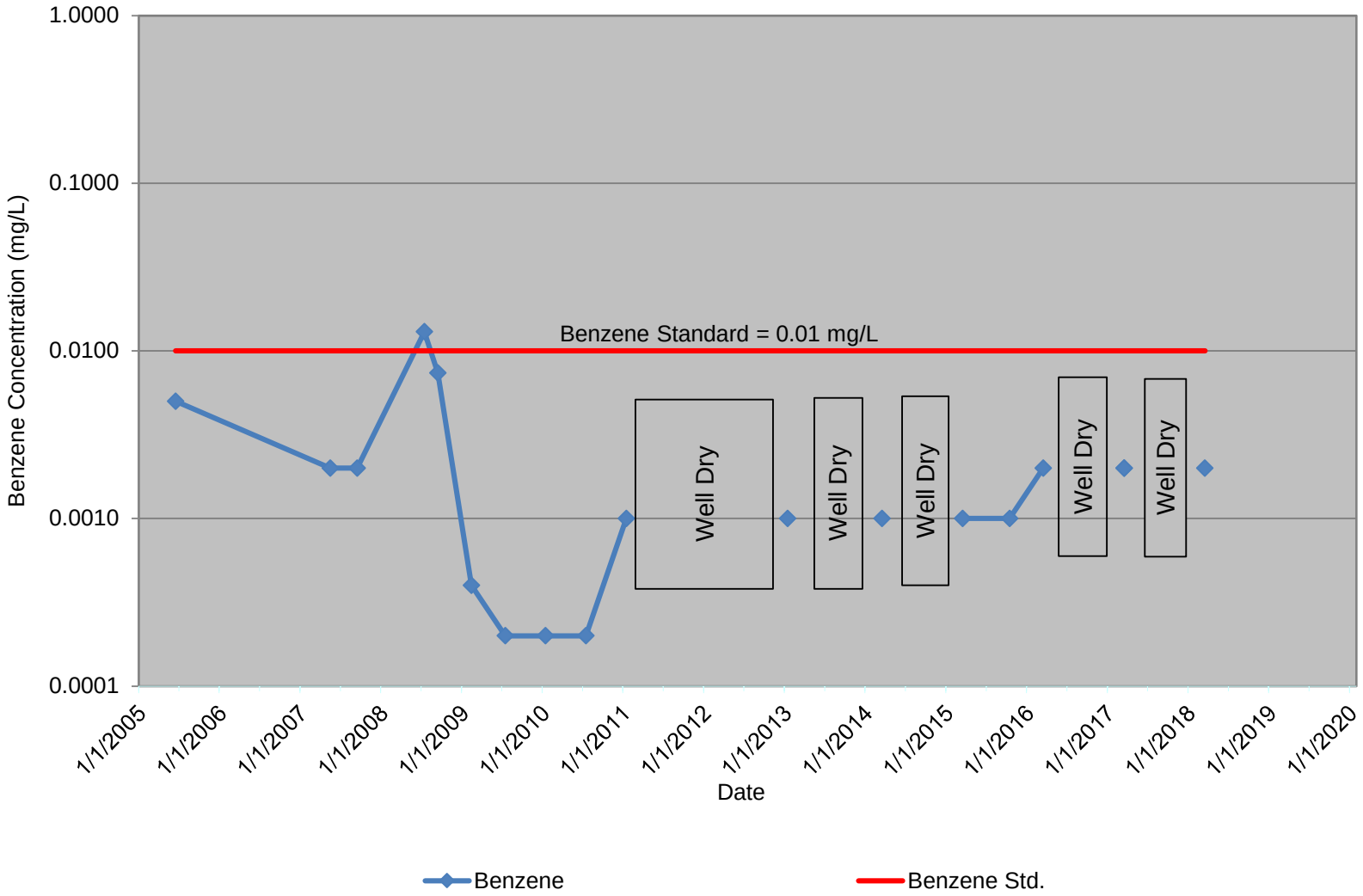
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Benzene in Groundwater
Lea County, NM
MW-D2



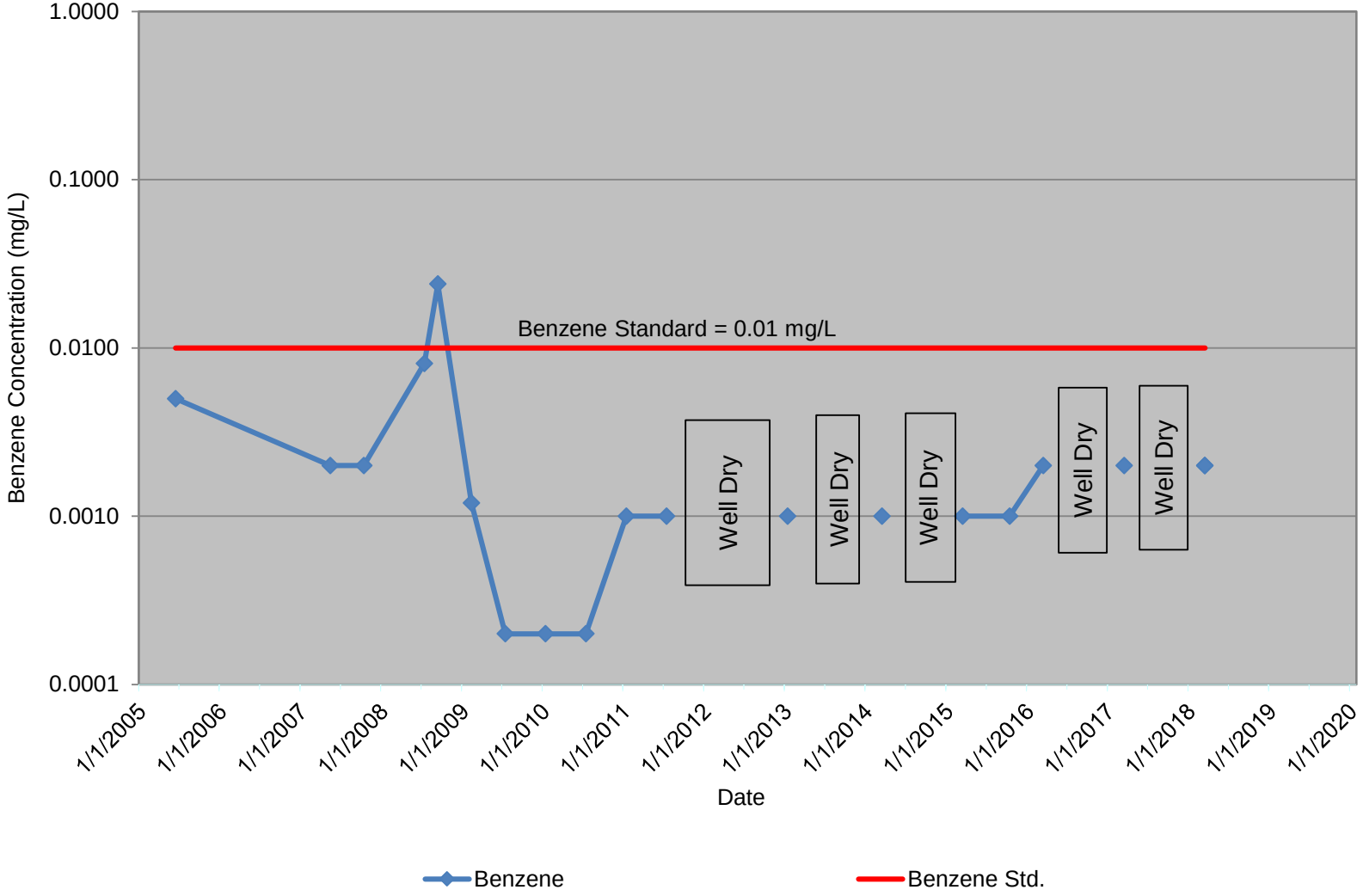
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-E



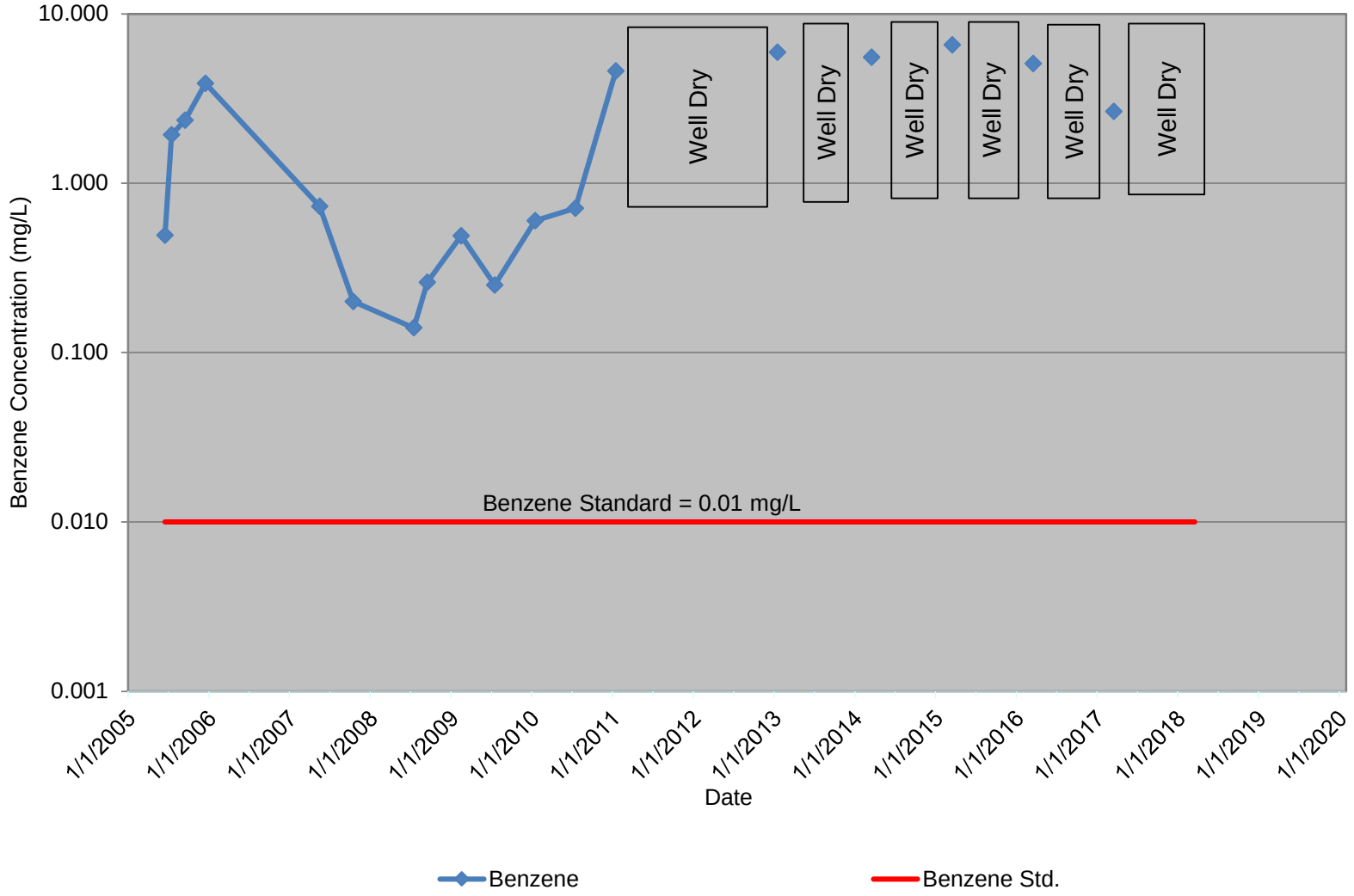
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-F



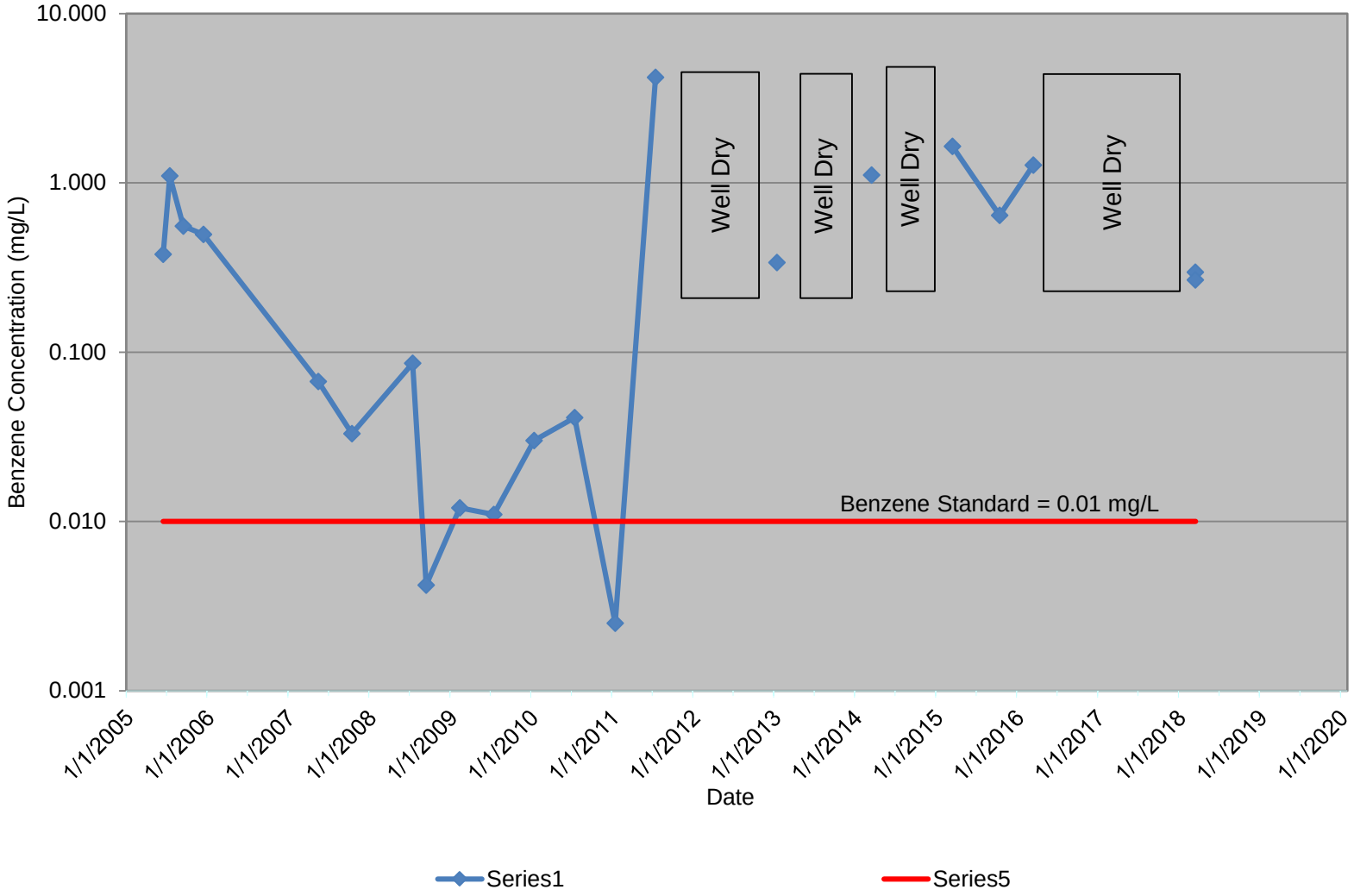
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-G



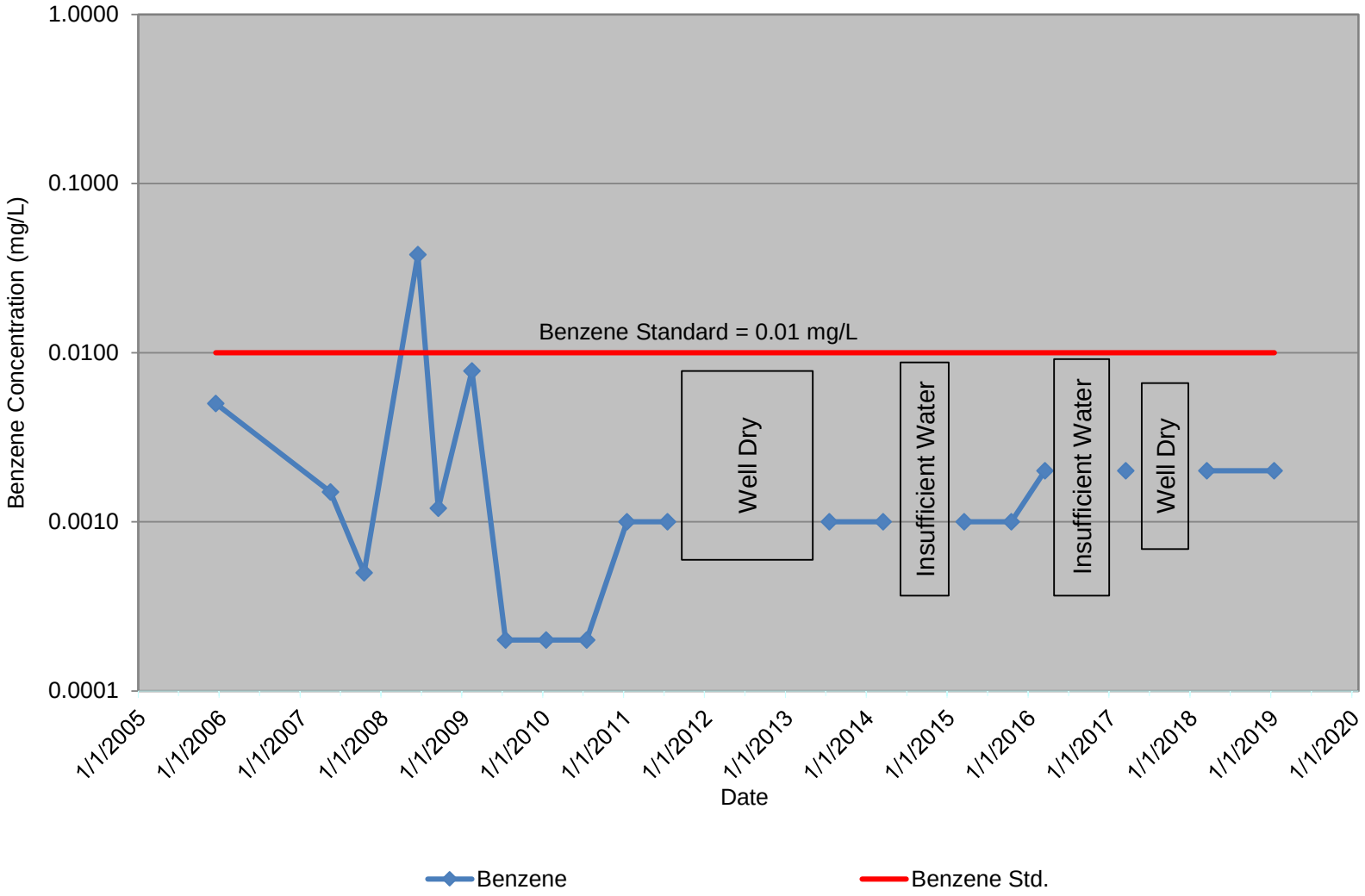
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Benzene in Grouundwater
Lea County, NM
MW-H



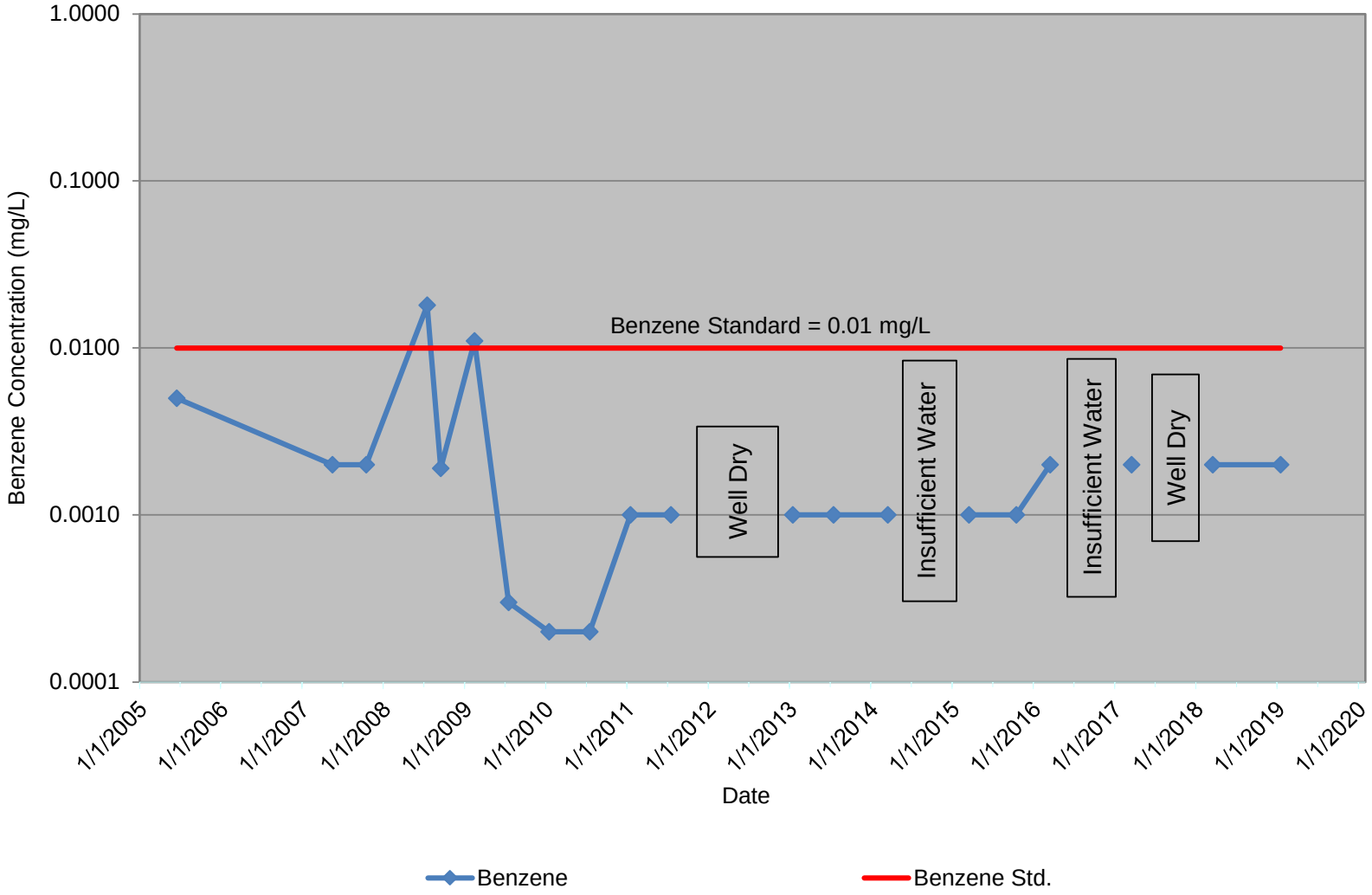
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzen in Groundwater
MW-I



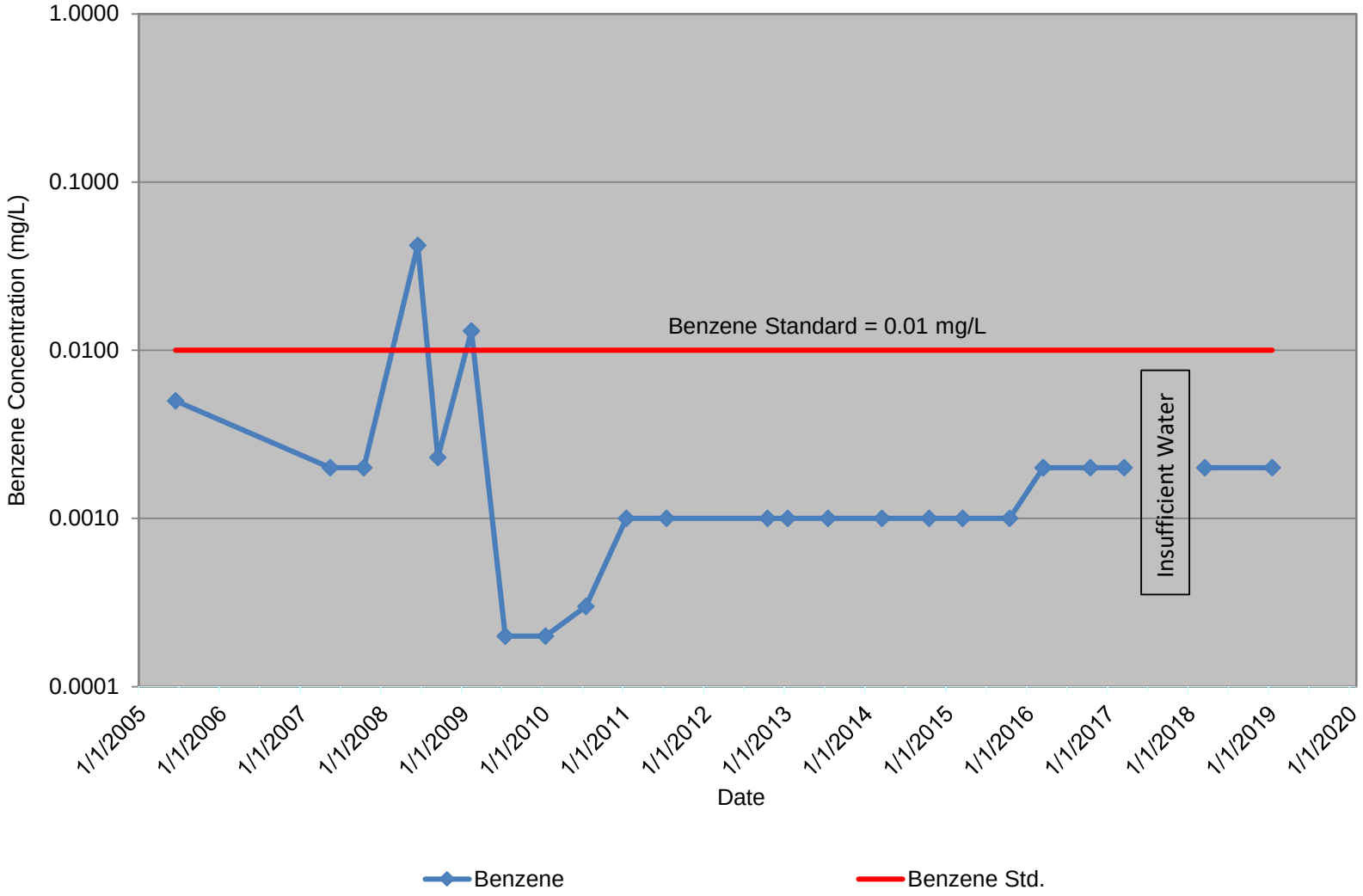
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-J



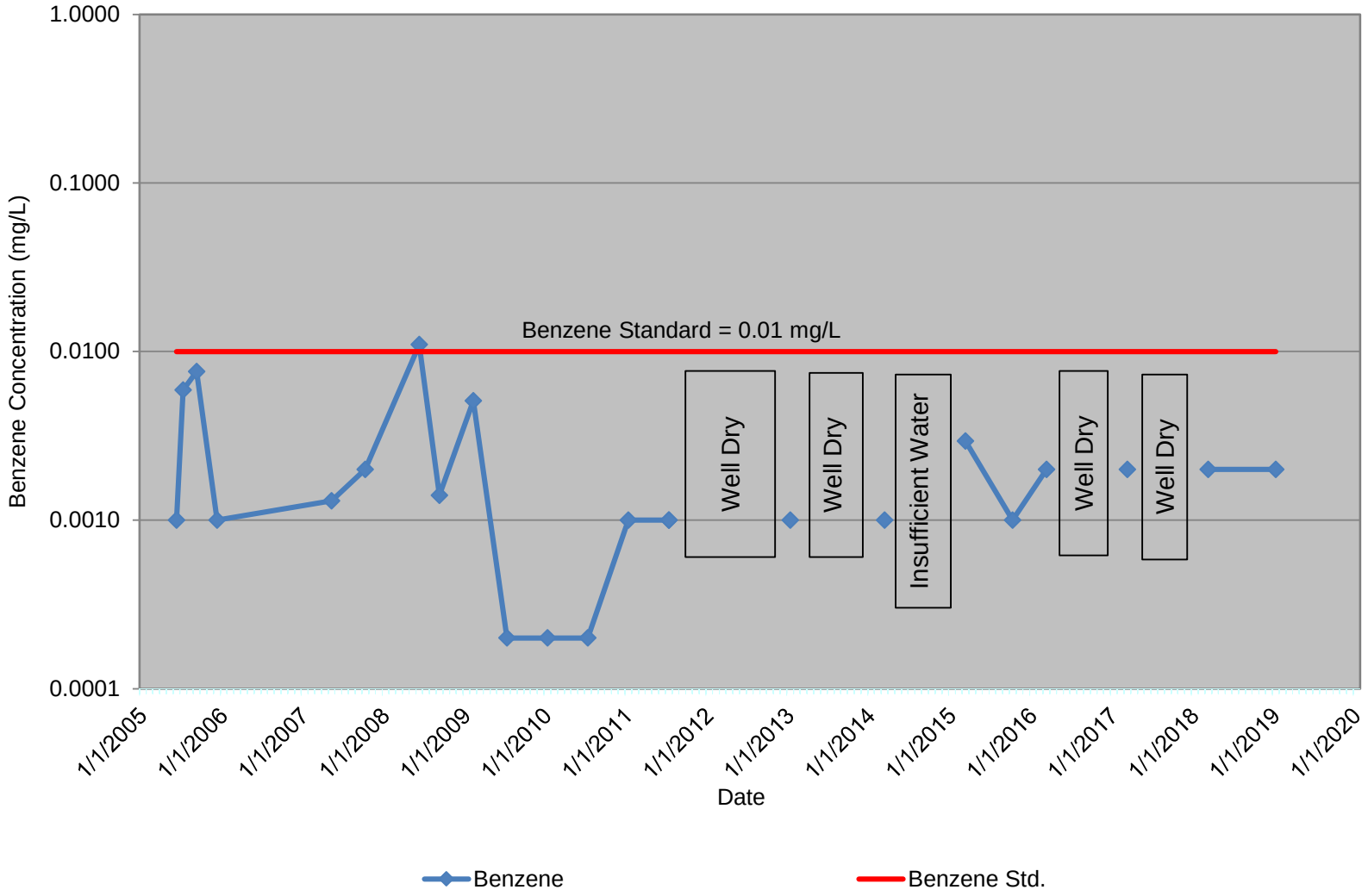
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-L



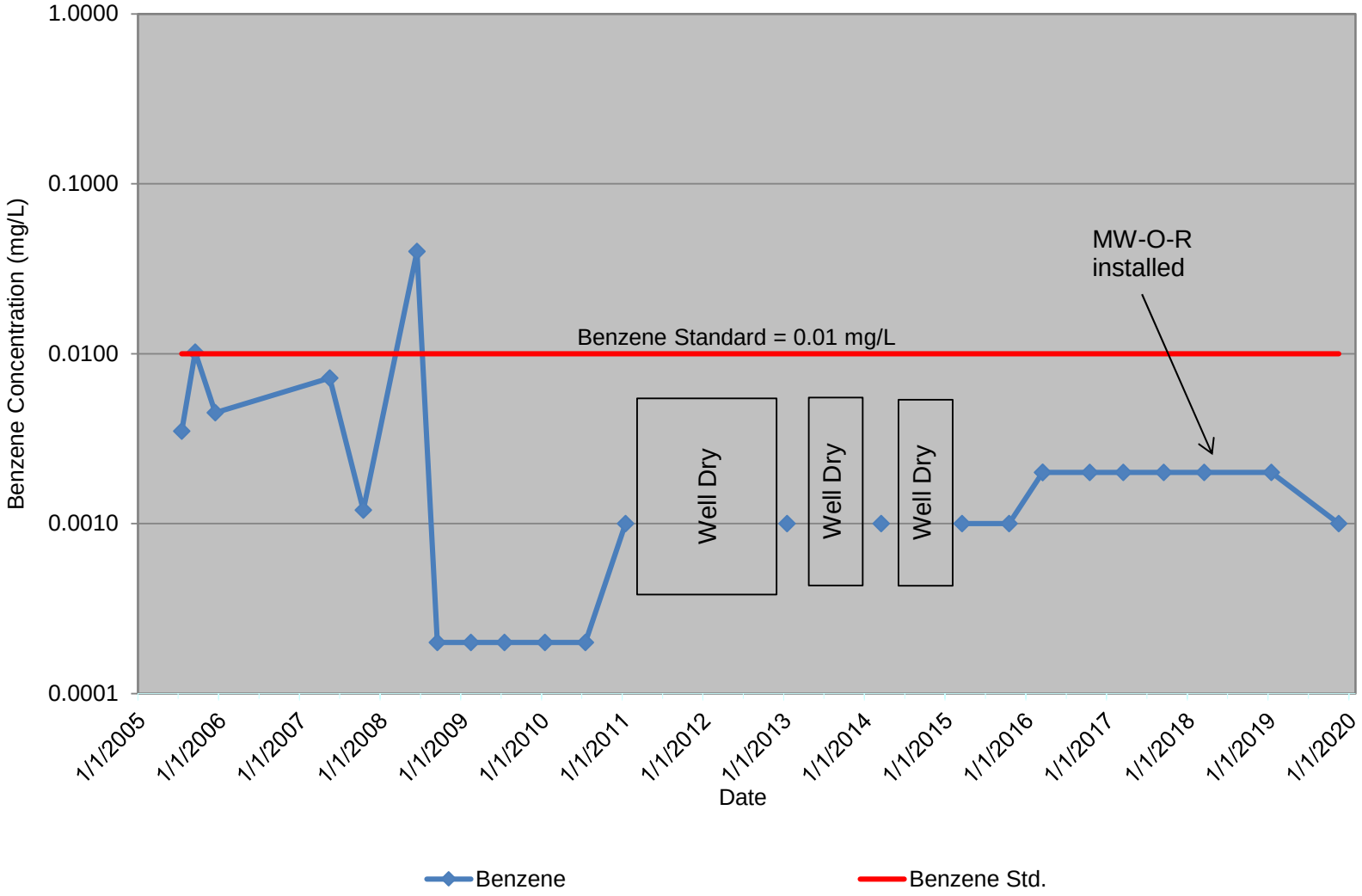
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-M



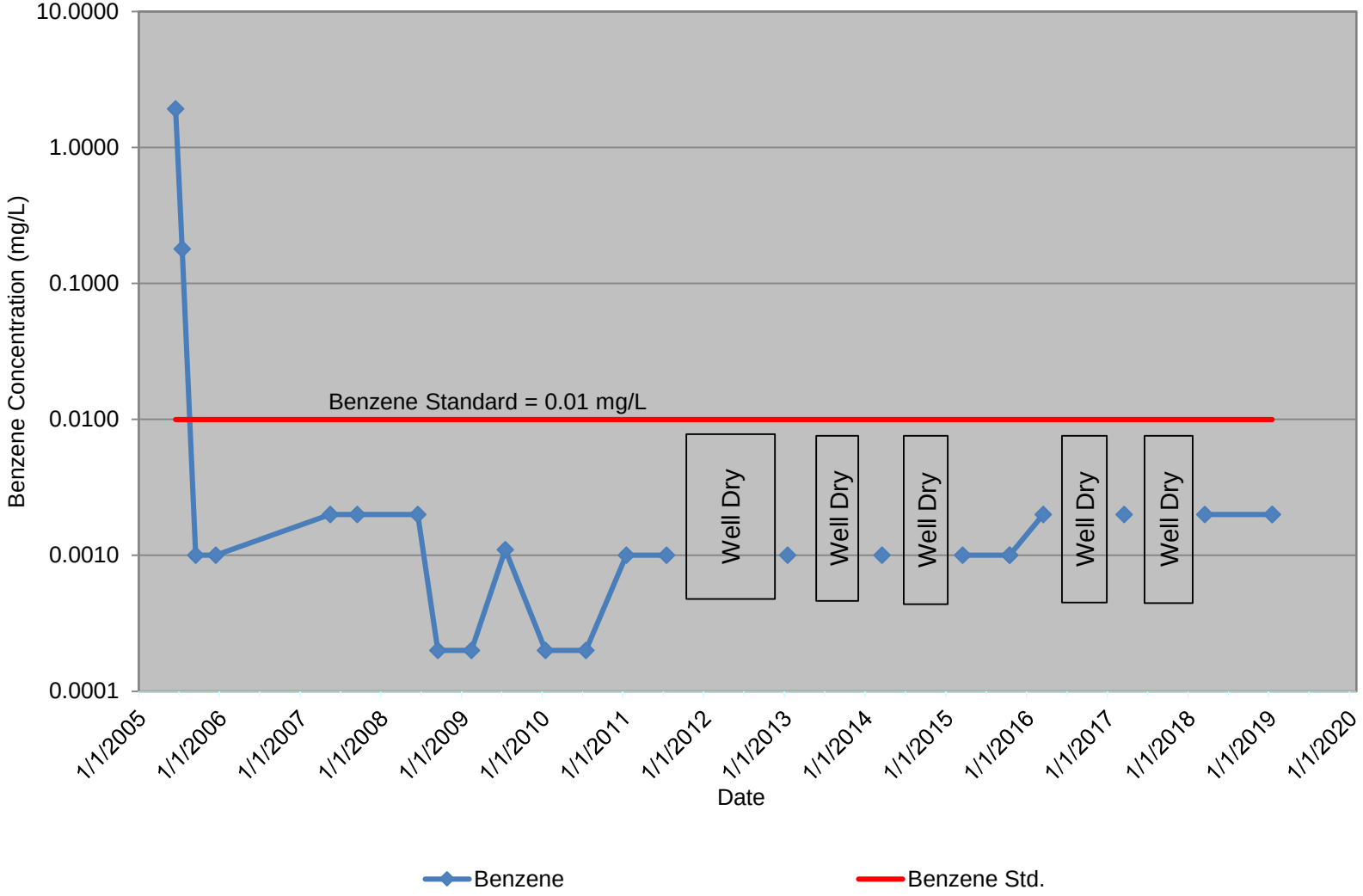
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-N



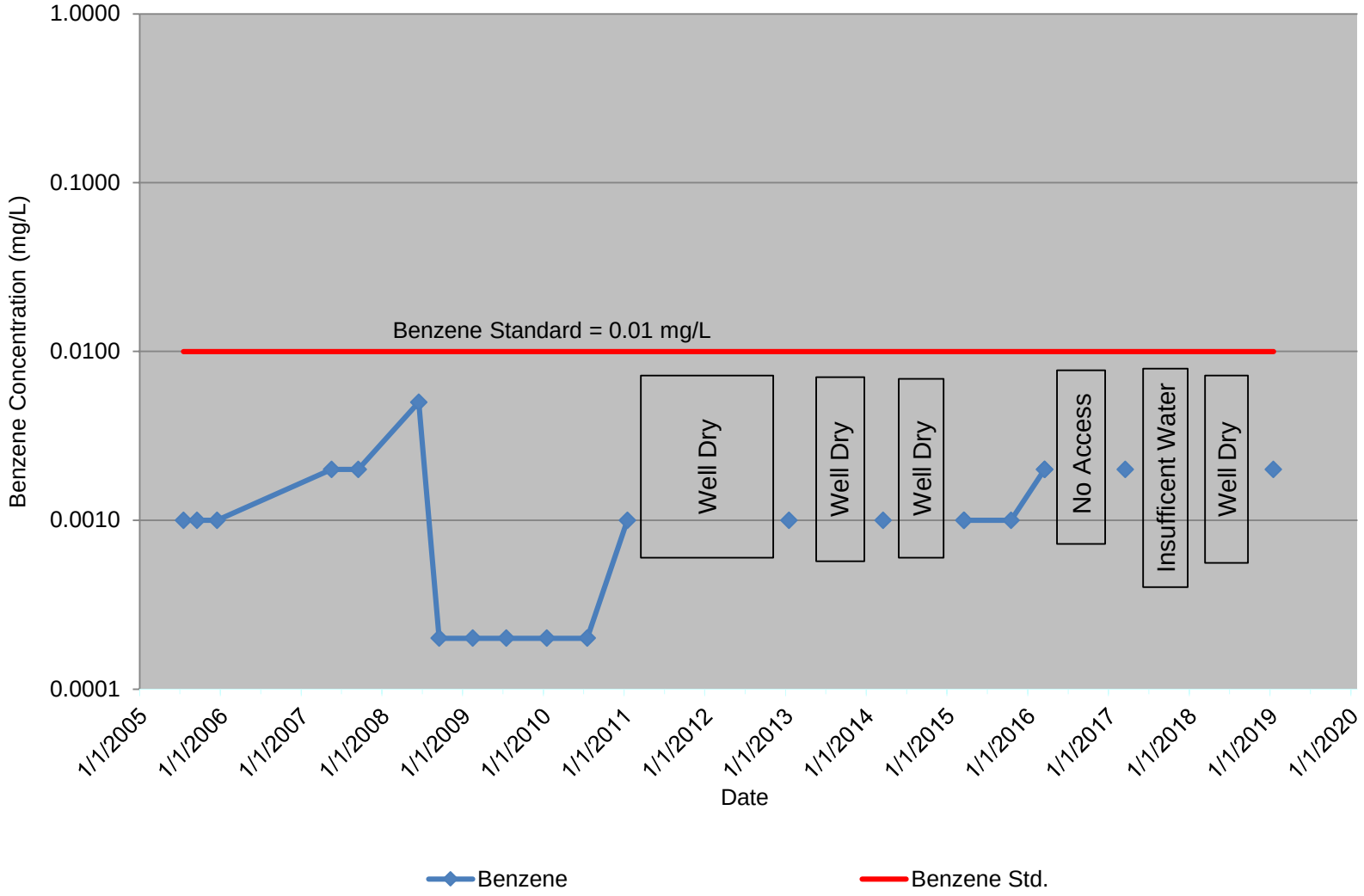
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-O and MW-O-R



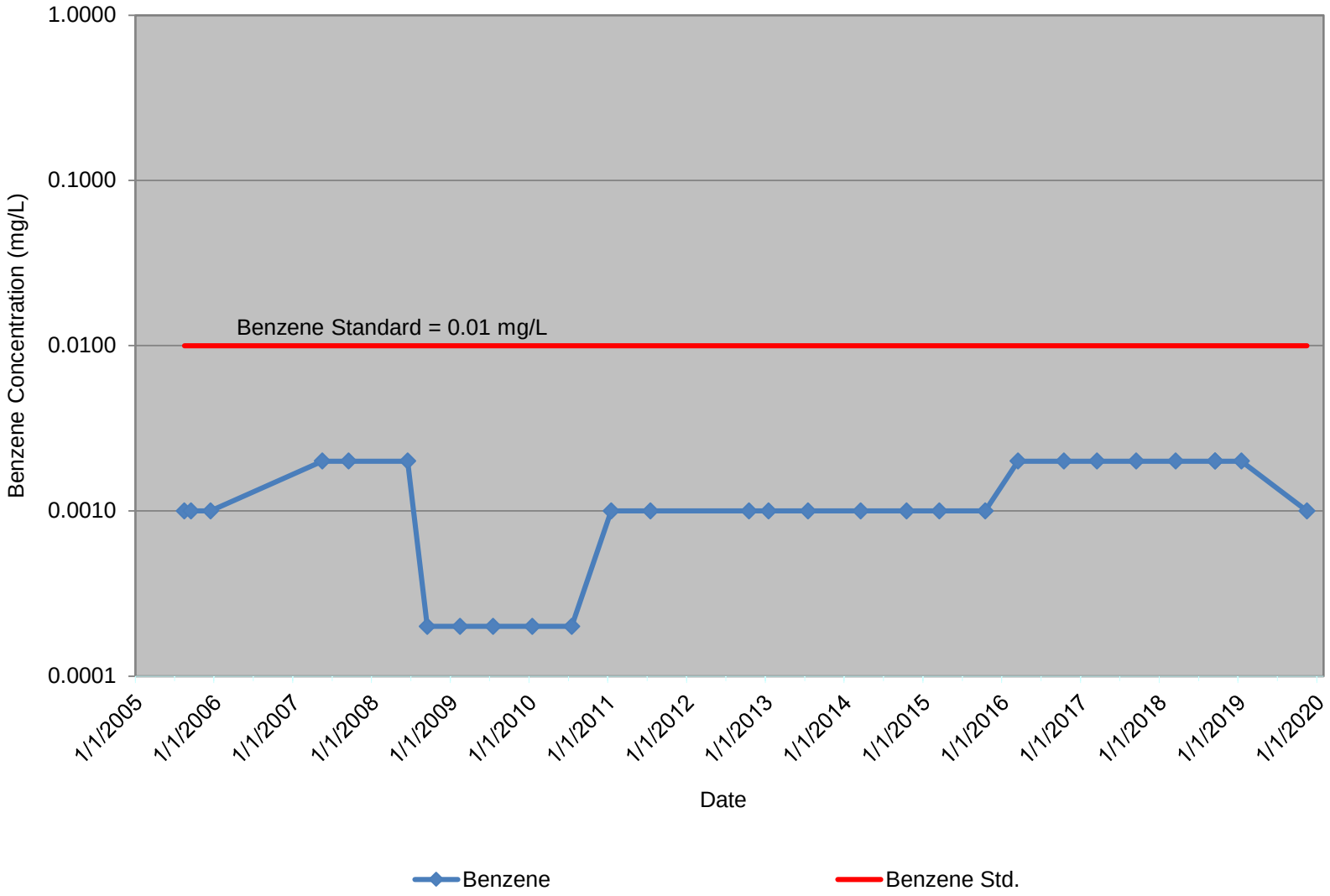
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-P



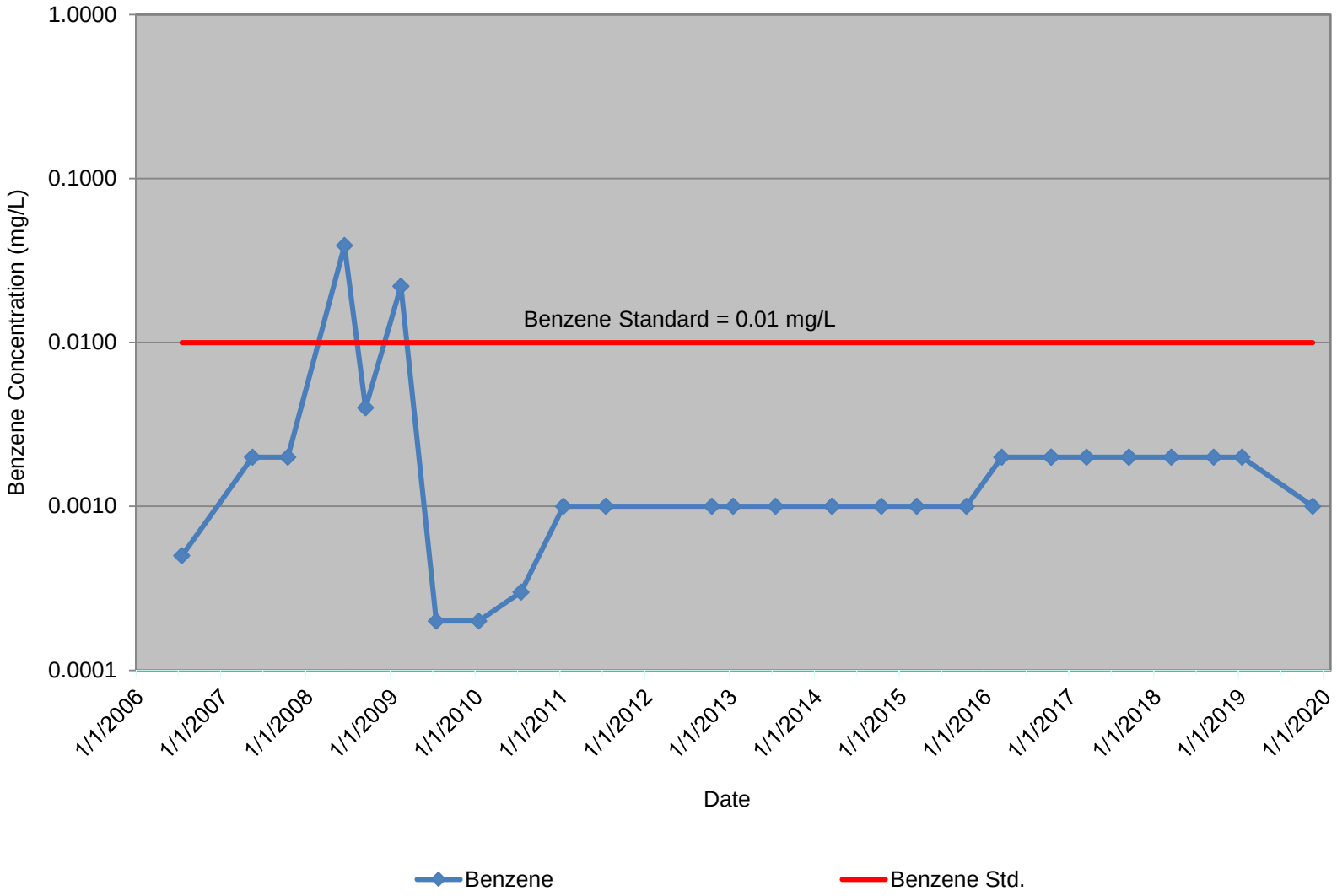
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-Q



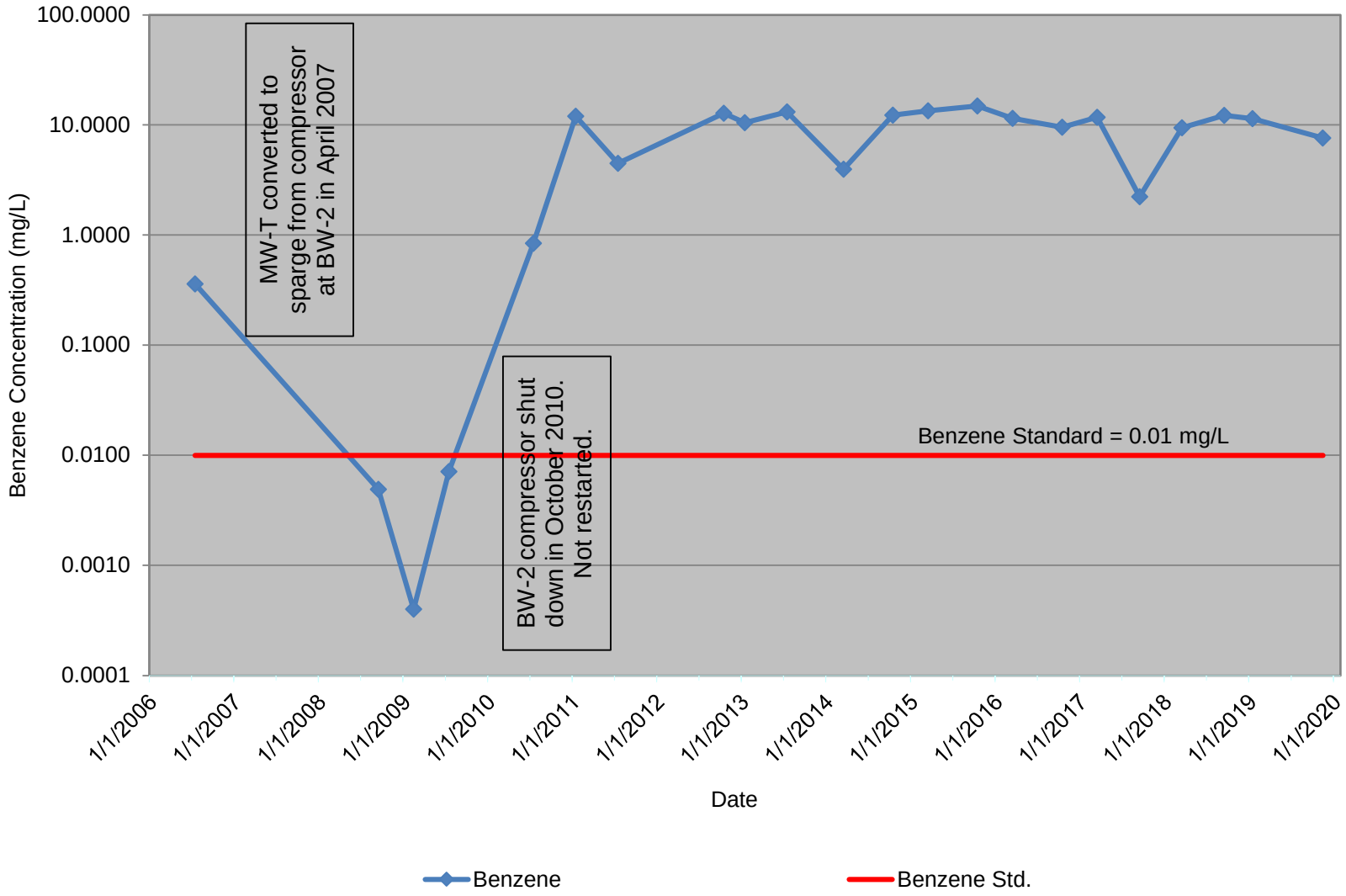
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
MW-R



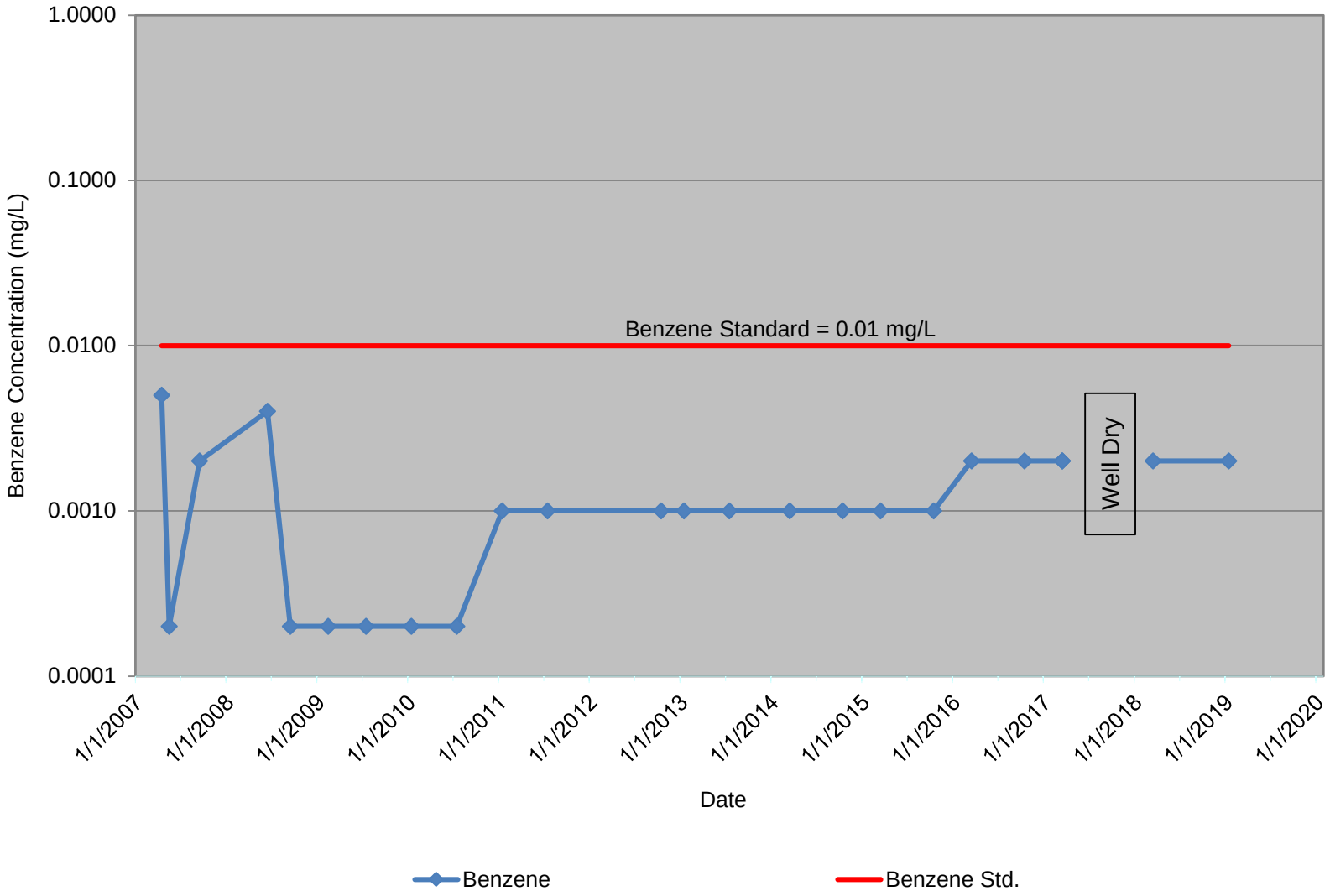
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
MW-S



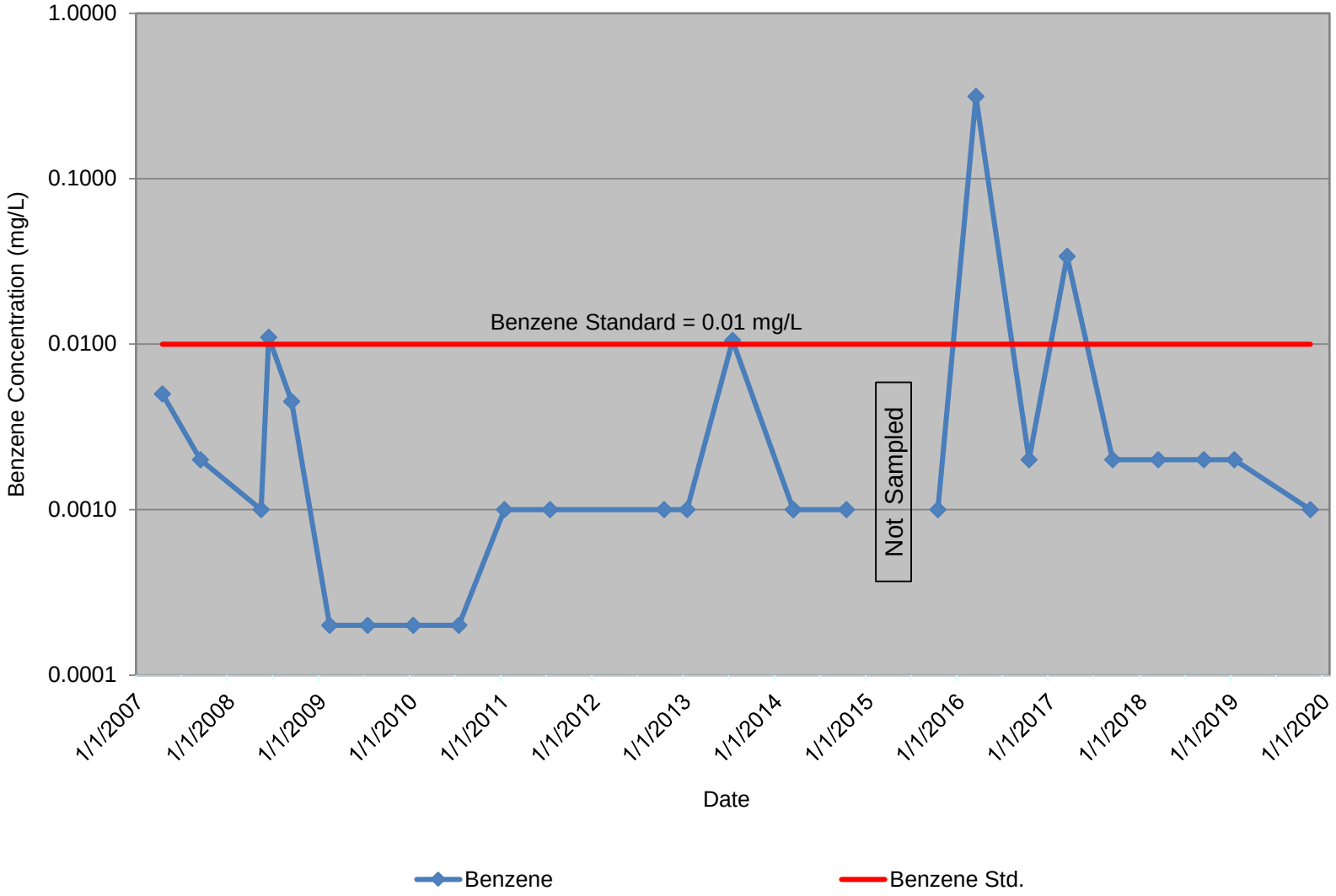
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
MW-T



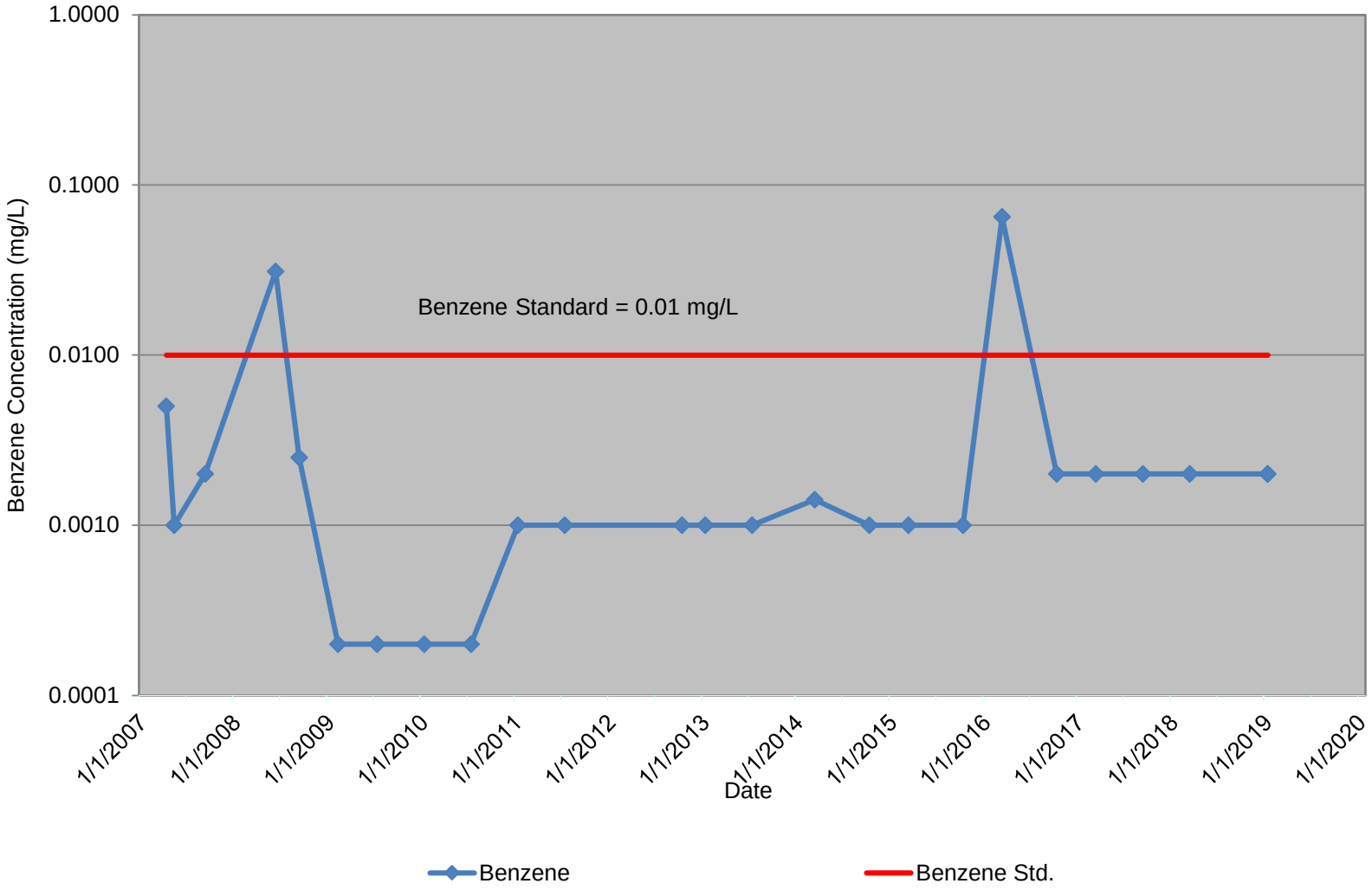
Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
MW-U



Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
MW-V



Chevron Environmental Management Company
Lovington Paddock Groundwater Remediation Site
Lea County, NM
Benzene in Groundwater
MW-W



APPENDIX F

Analytical Reports

January 16, 2019

Scott Foord
GHD Services, INC- Midland
2135 S Loop 250 W Midland, TX 79703

Please find the attached Confirmation of Sample Receipt for samples received by our laboratory on 01/16/2019. The samples have been logged in for a 5 Day TAT turnaround with results due 01/23/2019. The following is our understanding of your project requirements as described on the enclosed chain of custody form. To ensure that your needs are met, please take a moment to verify that:

1. The number and type of samples received are correct.

2. The analytical methods specified are correct.

3. Due dates for analytical results are correct.

4. Address, phone and fax information are correct.

Your samples will be retained for a period of 60 business days following receipt of the samples. After that time, they will be properly disposed of without further notice, unless there is an acknowledged written request. We reserve the right to return any unused samples, extracts or related solutions that have been identified as hazardous waste, are controlled substances under regulated protocols or have sample sizes exceeding standard analytical practices.

If there are any questions, please do not hesitate to contact your Project Manager and reference work order number **611419**

Confirmation of Sample Receipt # 611419

The following samples were received on Jan 16,2019 and will be analyzed as follows:

Client:	**GHD Services, INC- Midland**	**Turnaround:**	5 Day TAT
Lab PM:	Debbie Simmons	**Results Due:**	Jan-23-2019 17:00
Project ID:	073020-2019-001	**Report to**	Scott Foord
Project Name:	CEMC Lovington Paddock Remediation		
Location:	NM		
QC Package:	Texas Level II - Results and Summary		
EDD Type:			

Client Sample ID	Lab ID	Method Name (Analysis)	Matrix	Sampled
MW-D2-W-190115	611419-001	Inorganic Anions by EPA 300	Ground Water	01/15/19 11:15
MW-D2-W-190115	611419-001	Headspace Analysis by RSKSOP175	Ground Water	01/15/19 11:15
MW-D2-W-190115	611419-001	Alkalinity by SM2320B	Ground Water	01/15/19 11:15
MW-D2-W-190115	611419-001	TPH by SW8015 Mod	Ground Water	01/15/19 11:15
MW-D2-W-190115	611419-001	BTEX by EPA 8021B	Ground Water	01/15/19 11:15
MW-OR-W-190115	611419-002	Inorganic Anions by EPA 300	Ground Water	01/15/19 12:10
MW-OR-W-190115	611419-002	Headspace Analysis by RSKSOP175	Ground Water	01/15/19 12:10
MW-OR-W-190115	611419-002	Alkalinity by SM2320B	Ground Water	01/15/19 12:10
MW-OR-W-190115	611419-002	TPH by SW8015 Mod	Ground Water	01/15/19 12:10
MW-OR-W-190115	611419-002	BTEX by EPA 8021B	Ground Water	01/15/19 12:10
MW-R-W-190115	611419-003	Inorganic Anions by EPA 300	Ground Water	01/15/19 13:00
MW-R-W-190115	611419-003	Headspace Analysis by RSKSOP175	Ground Water	01/15/19 13:00
MW-R-W-190115	611419-003	Alkalinity by SM2320B	Ground Water	01/15/19 13:00
MW-R-W-190115	611419-003	TPH by SW8015 Mod	Ground Water	01/15/19 13:00
MW-R-W-190115	611419-003	BTEX by EPA 8021B	Ground Water	01/15/19 13:00
MW-V-W-190115	611419-004	Inorganic Anions by EPA 300	Ground Water	01/15/19 13:45
MW-V-W-190115	611419-004	Headspace Analysis by RSKSOP175	Ground Water	01/15/19 13:45
MW-V-W-190115	611419-004	Alkalinity by SM2320B	Ground Water	01/15/19 13:45
MW-V-W-190115	611419-004	TPH by SW8015 Mod	Ground Water	01/15/19 13:45
MW-V-W-190115	611419-004	BTEX by EPA 8021B	Ground Water	01/15/19 13:45
MW-S-W-190115	611419-005	Inorganic Anions by EPA 300	Ground Water	01/15/19 14:35
MW-S-W-190115	611419-005	Headspace Analysis by RSKSOP175	Ground Water	01/15/19 14:35
MW-S-W-190115	611419-005	Alkalinity by SM2320B	Ground Water	01/15/19 14:35
MW-S-W-190115	611419-005	TPH by SW8015 Mod	Ground Water	01/15/19 14:35
MW-S-W-190115	611419-005	BTEX by EPA 8021B	Ground Water	01/15/19 14:35
MW-CR-W-190115	611419-006	Inorganic Anions by EPA 300	Ground Water	01/15/19 15:25
MW-CR-W-190115	611419-006	Headspace Analysis by RSKSOP175	Ground Water	01/15/19 15:25
MW-CR-W-190115	611419-006	Alkalinity by SM2320B	Ground Water	01/15/19 15:25
MW-CR-W-190115	611419-006	TPH by SW8015 Mod	Ground Water	01/15/19 15:25
MW-CR-W-190115	611419-006	BTEX by EPA 8021B	Ground Water	01/15/19 15:25

Special Instructions:

Chain of Custody

Work Order No: 1911419

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 1 of 1

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S Loop 250 W	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	281-725-7477 Email:	william.foord@ghd.com & christopher.knight@ghd.com	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	CEMC Lovington Paddock Remediation	Turn Around	
Project Number:	73020	Routine	X
P.O. Number:	SSOW: 073020-2019-001	Rush:	
Sampler's Name:	Joshua Sharkey Joe Mireles	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	0.3 0.2	Thermometer ID	IR
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Methane (RSK 175) 7-14 days	Anions: Sulfate & Nitrate 48hrs	Alkalinity
MW-02-W-190115	GW	1-15	1115	—	10	X	X	X	X	X
MW-OR-W-190115	GW	1-15	1210	—						
MW-R-W-190115			1300	—						
MW-V-W-190115			1345	—						
MW-S-W-190115			1435	—						
MW-CR-W-190115	GW	1-15	1525	—	10	X	X	X	X	X

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Page 3 of 4

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Joe Mireles		1/16/19 0822	2		
3			4		
5			6		

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 01/16/2019 08:22:00 AM

Work Order #: 611419

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Alkalinity sent to Xenco Stafford & RSK 175 (Methane) sent to Dallas
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: BT

PH Device/Lot#: A032690

Checklist completed by: Brianna Teel Date: 01/16/2019

Brianna Teel

Checklist reviewed by: Debbie Simmons Date: 01/16/2019

Debbie Simmons

January 17, 2019

Scott Foord
GHD Services, INC- Midland
2135 S Loop 250 W Midland, TX 79703

Please find the attached Confirmation of Sample Receipt for samples received by our laboratory on 01/17/2019. The samples have been logged in for a 5 Day TAT turnaround with results due 01/24/2019. The following is our understanding of your project requirements as described on the enclosed chain of custody form. To ensure that your needs are met, please take a moment to verify that:

1. The number and type of samples received are correct.

2. The analytical methods specified are correct.

3. Due dates for analytical results are correct.

4. Address, phone and fax information are correct.

Your samples will be retained for a period of 60 business days following receipt of the samples. After that time, they will be properly disposed of without further notice, unless there is an acknowledged written request. We reserve the right to return any unused samples, extracts or related solutions that have been identified as hazardous waste, are controlled substances under regulated protocols or have sample sizes exceeding standard analytical practices.

If there are any questions, please do not hesitate to contact your Project Manager and reference work order number **611578**

Confirmation of Sample Receipt # 611578

The following samples were received on Jan 17,2019 and will be analyzed as follows:

Client:	**GHD Services, INC- Midland**	**Turnaround:**	5 Day TAT
Lab PM:	Debbie Simmons	**Results Due:**	Jan-24-2019 17:00
Project ID:	073020-2019-001	**Report to**	Scott Foord
Project Name:	CEMC Lovington Paddock Remediation		
Location:	NM		
QC Package:	Texas Level II - Results and Summary		
EDD Type:			

Client Sample ID	Lab ID	Method Name (Analysis)	Matrix	Sampled
BW-1-W-190116	611578-001	Inorganic Anions by EPA 300	Ground Water	01/16/19 13:45
BW-1-W-190116	611578-001	Headspace Analysis by RSKSOP175	Ground Water	01/16/19 13:45
BW-1-W-190116	611578-001	Alkalinity by SM2320B	Ground Water	01/16/19 13:45
BW-1-W-190116	611578-001	TPH by SW8015 Mod	Ground Water	01/16/19 13:45
BW-1-W-190116	611578-001	BTEX by EPA 8021B	Ground Water	01/16/19 13:45
BW-3-W-190116	611578-002	Inorganic Anions by EPA 300	Ground Water	01/16/19 14:50
BW-3-W-190116	611578-002	Headspace Analysis by RSKSOP175	Ground Water	01/16/19 14:50
BW-3-W-190116	611578-002	Alkalinity by SM2320B	Ground Water	01/16/19 14:50
BW-3-W-190116	611578-002	TPH by SW8015 Mod	Ground Water	01/16/19 14:50
BW-3-W-190116	611578-002	BTEX by EPA 8021B	Ground Water	01/16/19 14:50
MW-T-W-190116	611578-003	Inorganic Anions by EPA 300	Ground Water	01/16/19 17:10
MW-T-W-190116	611578-003	Headspace Analysis by RSKSOP175	Ground Water	01/16/19 17:10
MW-T-W-190116	611578-003	Alkalinity by SM2320B	Ground Water	01/16/19 17:10
MW-T-W-190116	611578-003	TPH by SW8015 Mod	Ground Water	01/16/19 17:10
MW-T-W-190116	611578-003	BTEX by EPA 8021B	Ground Water	01/16/19 17:10

Special Instructions:

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: 611578

www.xenco.com Page 1 of 1

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S Loop 250 W	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	281-725-7477	Email:	william.foord@ghd.com & christopher.knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	CEMC Lovington Paddock Remediation	Turn Around	
Project Number:	73020	Routine	☒
P.O. Number:	SSOW: 073020-2019-001	Rush:	
Sampler's Name:	Joe Mireles	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	0.3	Thermometer ID		
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Methane (RSK 175)	Anions: Sulfate & Nitrate	Alkalinity
BW-1-W-190116	GW	1-16	1345	—	10	X	X	X	X	X
BW-3-W-190116	GW	1-16	1450	—	10	X	X	X	X	X
MW-7-W-190116	GW	1-16	1710	—	10	X	X	X	X	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Page 3 of 4

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Joe Mireles		1/17/19 0831	2			
3				4			
5				6			

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 01/17/2019 08:31:00 AM

Work Order #: 611578

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Alkalinity sent to Xenco Stafford & RSK 175 (Methane) sent to Dallas
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: BT

PH Device/Lot#: A032690

Checklist completed by: Brianna Teel Date: 01/17/2019

Brianna Teel

Checklist reviewed by: Debbie Simmons Date: 01/17/2019

Debbie Simmons

January 18, 2019

Scott Foord
GHD Services, INC- Midland
2135 S Loop 250 W Midland, TX 79703

Please find the attached Confirmation of Sample Receipt for samples received by our laboratory on 01/18/2019. The samples have been logged in for a 5 Day TAT turnaround with results due 01/25/2019. The following is our understanding of your project requirements as described on the enclosed chain of custody form. To ensure that your needs are met, please take a moment to verify that:

1. The number and type of samples received are correct.

2. The analytical methods specified are correct.

3. Due dates for analytical results are correct.

4. Address, phone and fax information are correct.

Your samples will be retained for a period of 60 business days following receipt of the samples. After that time, they will be properly disposed of without further notice, unless there is an acknowledged written request. We reserve the right to return any unused samples, extracts or related solutions that have been identified as hazardous waste, are controlled substances under regulated protocols or have sample sizes exceeding standard analytical practices.

If there are any questions, please do not hesitate to contact your Project Manager and reference work order number **611759**

Confirmation of Sample Receipt # 611759

The following samples were received on Jan 18,2019 and will be analyzed as follows:

Client:	**GHD Services, INC- Midland**	**Turnaround:**	5 Day TAT
Lab PM:	Debbie Simmons	**Results Due:**	Jan-25-2019 17:00
Project ID:	073020-2019-001	**Report to**	Scott Foord
Project Name:	CEMC Lovington Paddock Remediation		
Location:	NM		
QC Package:	Texas Level II - Results and Summary		
EDD Type:			

Client Sample ID	Lab ID	Method Name (Analysis)	Matrix	Sampled
MW-W-WD-190117	611759-001	TPH by SW8015 Mod	Ground Water	01/17/19 00:00
MW-W-WD-190117	611759-001	BTEX by EPA 8021B	Ground Water	01/17/19 00:00
MW-U-W-190117	611759-002	TPH by SW8015 Mod	Ground Water	01/17/19 13:30
MW-U-W-190117	611759-002	BTEX by EPA 8021B	Ground Water	01/17/19 13:30
BW-2-W-190117	611759-003	TPH by SW8015 Mod	Ground Water	01/17/19 14:10
BW-2-W-190117	611759-003	BTEX by EPA 8021B	Ground Water	01/17/19 14:10
MW-J-W-190117	611759-004	TPH by SW8015 Mod	Ground Water	01/17/19 14:40
MW-J-W-190117	611759-004	BTEX by EPA 8021B	Ground Water	01/17/19 14:40
MW-L-W-190117	611759-005	TPH by SW8015 Mod	Ground Water	01/17/19 14:50
MW-L-W-190117	611759-005	BTEX by EPA 8021B	Ground Water	01/17/19 14:50
MW-M-W-190117	611759-006	TPH by SW8015 Mod	Ground Water	01/17/19 15:00
MW-M-W-190117	611759-006	BTEX by EPA 8021B	Ground Water	01/17/19 15:00
MW-N-W-190117	611759-007	TPH by SW8015 Mod	Ground Water	01/17/19 15:15
MW-N-W-190117	611759-007	BTEX by EPA 8021B	Ground Water	01/17/19 15:15
MW-P-W-190117	611759-008	TPH by SW8015 Mod	Ground Water	01/17/19 15:40
MW-P-W-190117	611759-008	BTEX by EPA 8021B	Ground Water	01/17/19 15:40
MW-W-W-190117	611759-009	TPH by SW8015 Mod	Ground Water	01/17/19 12:45
MW-W-W-190117	611759-009	BTEX by EPA 8021B	Ground Water	01/17/19 12:45
MW-P-WD-190117	611759-010	TPH by SW8015 Mod	Ground Water	01/17/19 00:00
MW-P-WD-190117	611759-010	BTEX by EPA 8021B	Ground Water	01/17/19 00:00
MW-Q-W-190117	611759-011	TPH by SW8015 Mod	Ground Water	01/17/19 16:10
MW-Q-W-190117	611759-011	BTEX by EPA 8021B	Ground Water	01/17/19 16:10

Special Instructions:

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com

Work Order No: 611759

Page 1 of 2

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S Loop 250 W	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	281-725-7477	Email:	william.foord@ghd.com & christopher.knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	CEMC Lovington Paddock Remediation	Turn Around	
Project Number:	73020	Routine ☐	
P.O. Number:	SSOW: 073020-2019-001	Rush:	
Sampler's Name:	Joshua Shackelford Jr Miller	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3.3/3.2	Thermometer ID	VE
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (Nd) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Methane (RSK 175)	Anions: Sulfate & Nitrate	Alkalinity
MW-W-WD-190117	GW	1-17		—	5	X	X			
~~MW-E-W-190117~~										
MW-U-W-190117			1330	—						
BW-2-W-190117			1410	—						
MW-J-W-190117			1440	—						
MW-L-W-190117			1450	—						
MW-M-W-190117			1500	—						
MW-N-W-190117			1515	—						
MW-P-W-190117	↓	↓	1540	—	↓	↓	↓			
MW-W-W-190117	GW	1-17	1245	—	5	X	X			

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Page 3 of 5

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Joshua Shackelford		01/18/19 0930	2		
3			4		
5			6		

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com

Work Order No: 611759

Page 2 of 2

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S Loop 250 W	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	281-725-7477	Email:	william.foord@ghd.com & christopher.knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	CEMC Lovington Paddock Remediation	Turn Around	
Project Number:	73020	Routine ☐	
P.O. Number:	SSOW: 073020-2019-001	Rush:	
Sampler's Name:	Joshua Sharkey Joe Mireles	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	3.3/3.0	Thermometer ID	TE
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Methane (RSK 175)	Anions: Sulfate & Nitrate	Alkalinity
MW-P-WD-190117	GW	1-17	—	—	5	X	X			
MW-9-W-190117	GW	1-17	1610	—	5	X	X			

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

sediment reaction with acid. Please run tests.

Page 4 of 5

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Joshua Sharkey		01/18/19 0930	2		
3				4		
5				6		

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 01/18/2019 09:30:00 AM

Work Order #: 611759

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 01/18/2019

Brianna Teel

Checklist reviewed by: Debbie Simmons Date: 01/18/2019

Debbie Simmons

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

Laboratory Job ID: 600-196556-1
Client Project/Site: Chevron Lovington Paddock

For:
ARCADIS U.S., Inc.
10205 Westheimer Rd
Suite 800
Houston, Texas 77042

Attn: Scott Foord

Authorized for release by:
12/17/2019 3:42:55 PM

Sachin Kudchadkar, Senior Project Manager
(713)690-4444
sachin.kudchadkar@testamericainc.com

Table of Contents

Job ID: 600-196556-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-196556-1

Comments
No additional comments.

Receipt
The samples were received on 11/26/2019 10:36 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

GC/MS VOA
Method 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-T-W-191122 (600-196556-1). Elevated reporting limits (RLs) are provided.

Method 8260B: %recovery of Dibromofluoromethane was below the QC limits. But there was not target compound associated with it.

MW-T-W-191122 (600-196556-1)

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

GC VOA
Method 8015B: The following samples were received with less than 2 days remaining on the holding time. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-T-W-191122 (600-196556-1), BW-1-W-191122 (600-196556-2), MW-V-W-191122 (600-196556-3), BW-2-W191122 (600-196556-4) and MW-OR-W-191122 (600-196556-5).

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

GC Semi VOA
Method 8015B: The continuing calibration verification (CCV) associated with batch 240-413589 recovered above the upper control limit for o-Terphenyl (Surr). The samples associated with this CCV were non-detects at the RL; therefore, the data have been reported. The following samples are impacted: MW-T-W-191122 (600-196556-1), BW-1-W-191122 (600-196556-2), MW-V-W-191122 (600-196556-3), BW-2-W191122 (600-196556-4) and MW-OR-W-191122 (600-196556-5).

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

Organic Prep
Method 3510C: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-T-W-191122 (600-196556-1), BW-1-W-191122 (600-196556-2), MW-V-W-191122 (600-196556-3), BW-2-W191122 (600-196556-4) and MW-OR-W-191122 (600-196556-5).

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-413417.

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

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

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 600-196556-1
Project/Site: Chevron Lovington Paddock

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
8015B	Gasoline Range Organics - (GC)	SW846	TAL CAN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL HOU

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-196556-1	MW-T-W-191122	Water	11/22/19 15:00	11/26/19 10:36	
600-196556-2	BW-1-W-191122	Water	11/22/19 13:45	11/26/19 10:36	
600-196556-3	MW-V-W-191122	Water	11/22/19 12:50	11/26/19 10:36	
600-196556-4	BW-2-W191122	Water	11/22/19 14:20	11/26/19 10:36	
600-196556-5	MW-OR-W-191122	Water	11/22/19 10:50	11/26/19 10:36	

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

Client Sample ID: MW-T-W-191122 — Lab Sample ID: 600-196556-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.13		0.050	0.011	mg/L	50		8260B	Total/NA
Toluene	0.077		0.050	0.0099	mg/L	50		8260B	Total/NA
Benzene - DL	7.6		0.50	0.088	mg/L	500		8260B	Total/NA
Gasoline Range Organics [C6 - C10]	11	H	1.0	0.49	mg/L	10		8015B	Total/NA

Client Sample ID: BW-1-W-191122 — Lab Sample ID: 600-196556-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.00065	J	0.0010	0.00018	mg/L	1		8260B	Total/NA
Xylenes, Total	0.00096	J	0.0020	0.00037	mg/L	1		8260B	Total/NA

Client Sample ID: MW-V-W-191122 — Lab Sample ID: 600-196556-3

No Detections.

Client Sample ID: BW-2-W191122 — Lab Sample ID: 600-196556-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.013		0.0010	0.00018	mg/L	1		8260B	Total/NA
Toluene	0.0015		0.0010	0.00020	mg/L	1		8260B	Total/NA
Xylenes, Total	0.0016	J	0.0020	0.00037	mg/L	1		8260B	Total/NA
Gasoline Range Organics [C6 - C10]	0.062	J H	0.10	0.049	mg/L	1		8015B	Total/NA

Client Sample ID: MW-OR-W-191122 — Lab Sample ID: 600-196556-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics [C6 - C10]	0.050	J H	0.10	0.049	mg/L	1		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-T-W-191122

Lab Sample ID: 600-196556-1

Date Collected: 11/22/19 15:00

Matrix: Water

Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.13**		0.050	0.011	mg/L			12/03/19 00:18	50
Toluene	**0.077**		0.050	0.0099	mg/L			12/03/19 00:18	50
Xylenes, Total	0.018	U	0.10	0.018	mg/L			12/03/19 00:18	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*54*		*50 - 134*		*12/03/19 00:18*	*50*
Dibromofluoromethane	*57*	*X*	*62 - 130*		*12/03/19 00:18*	*50*
Toluene-d8 (Surr)	*107*		*70 - 130*		*12/03/19 00:18*	*50*
4-Bromofluorobenzene	*114*		*67 - 139*		*12/03/19 00:18*	*50*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**7.6**		0.50	0.088	mg/L			12/02/19 23:52	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*52*		*50 - 134*		*12/02/19 23:52*	*500*
Dibromofluoromethane	*58*	*X*	*62 - 130*		*12/02/19 23:52*	*500*
Toluene-d8 (Surr)	*109*		*70 - 130*		*12/02/19 23:52*	*500*
4-Bromofluorobenzene	*118*		*67 - 139*		*12/02/19 23:52*	*500*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	**11**	**H**	1.0	0.49	mg/L			12/09/19 12:50	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*88*		*63 - 125*		*12/09/19 12:50*	*10*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 17:15	1
Oil Range Organics (C28-C36)	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*80*		*37 - 130*	*12/02/19 16:09*	*12/03/19 17:15*	*1*

Client Sample ID: BW-1-W-191122

Lab Sample ID: 600-196556-2

Date Collected: 11/22/19 13:45

Matrix: Water

Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00065**	**J**	0.0010	0.00018	mg/L			11/30/19 16:20	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 16:20	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 16:20	1
Xylenes, Total	**0.00096**	**J**	0.0020	0.00037	mg/L			11/30/19 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*67*		*50 - 134*		*11/30/19 16:20*	*1*
Dibromofluoromethane	*84*		*62 - 130*		*11/30/19 16:20*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*11/30/19 16:20*	*1*
4-Bromofluorobenzene	*110*		*67 - 139*		*11/30/19 16:20*	*1*

Client Sample ID: BW-1-W-191122
Lab Sample ID: 600-196556-2
Date Collected: 11/22/19 13:45
Matrix: Water
Date Received: 11/26/19 10:36

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U H	0.10	0.049	mg/L			12/09/19 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*89*		*63 - 125*		*12/09/19 14:51*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 17:42	1
Oil Range Organics (C28-C36)	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 17:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*104*		*37 - 130*	*12/02/19 16:09*	*12/03/19 17:42*	*1*

Client Sample ID: MW-V-W-191122
Lab Sample ID: 600-196556-3
Date Collected: 11/22/19 12:50
Matrix: Water
Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 16:48	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 16:48	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 16:48	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*71*		*50 - 134*		*11/30/19 16:48*	*1*
Dibromofluoromethane	*82*		*62 - 130*		*11/30/19 16:48*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*11/30/19 16:48*	*1*
4-Bromofluorobenzene	*106*		*67 - 139*		*11/30/19 16:48*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U H	0.10	0.049	mg/L			12/09/19 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*91*		*63 - 125*		*12/09/19 15:31*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.16	U H	0.49	0.16	mg/L		12/02/19 16:09	12/03/19 18:09	1
Oil Range Organics (C28-C36)	0.16	U H	0.49	0.16	mg/L		12/02/19 16:09	12/03/19 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*101*		*37 - 130*	*12/02/19 16:09*	*12/03/19 18:09*	*1*

Client Sample ID: BW-2-W191122
Lab Sample ID: 600-196556-4
Date Collected: 11/22/19 14:20
Matrix: Water
Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.013**		0.0010	0.00018	mg/L			11/30/19 17:16	1

Client Sample ID: BW-2-W191122

Date Collected: 11/22/19 14:20
Date Received: 11/26/19 10:36

Lab Sample ID: 600-196556-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 17:16	1
Toluene	**0.0015**		0.0010	0.00020	mg/L			11/30/19 17:16	1
Xylenes, Total	**0.0016**	**J**	0.0020	0.00037	mg/L			11/30/19 17:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*70*		*50 - 134*		*11/30/19 17:16*	*1*
Dibromofluoromethane	*80*		*62 - 130*		*11/30/19 17:16*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*11/30/19 17:16*	*1*
4-Bromofluorobenzene	*109*		*67 - 139*		*11/30/19 17:16*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	**0.062**	**J H**	0.10	0.049	mg/L			12/09/19 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*89*		*63 - 125*		*12/09/19 16:11*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.16	U H	0.48	0.16	mg/L		12/02/19 16:09	12/03/19 18:36	1
Oil Range Organics (C28-C36)	0.16	U H	0.48	0.16	mg/L		12/02/19 16:09	12/03/19 18:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*102*		*37 - 130*	*12/02/19 16:09*	*12/03/19 18:36*	*1*

Client Sample ID: MW-OR-W-191122

Date Collected: 11/22/19 10:50
Date Received: 11/26/19 10:36

Lab Sample ID: 600-196556-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 17:44	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 17:44	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 17:44	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*68*		*50 - 134*		*11/30/19 17:44*	*1*
Dibromofluoromethane	*77*		*62 - 130*		*11/30/19 17:44*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/30/19 17:44*	*1*
4-Bromofluorobenzene	*103*		*67 - 139*		*11/30/19 17:44*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	**0.050**	**J H**	0.10	0.049	mg/L			12/09/19 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*86*		*63 - 125*		*12/09/19 16:51*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

Client Sample ID: MW-OR-W-191122
Date Collected: 11/22/19 10:50
Date Received: 11/26/19 10:36

Lab Sample ID: 600-196556-5
Matrix: Water

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 19:03	1
Oil Range Organics (C28-C36)	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*95*		*37 - 130*	*12/02/19 16:09*	*12/03/19 19:03*	*1*

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Job ID: 600-196556-1
Project/Site: Chevron Lovington Paddock

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(50-134)	(62-130)	(70-130)	(67-139)
600-196556-1 - DL	MW-T-W-191122	52	58 X	109	118
600-196556-1	MW-T-W-191122	54	57 X	107	114
600-196556-2	BW-1-W-191122	67	84	101	110
600-196556-3	MW-V-W-191122	71	82	102	106
600-196556-4	BW-2-W191122	70	80	101	109
600-196556-5	MW-OR-W-191122	68	77	100	103
LCS 600-281714/3	Lab Control Sample	62	80	83	108
LCS 600-281782/3	Lab Control Sample	64	68	94	112
LCSD 600-281714/4	Lab Control Sample Dup	61	83	79	113
LCSD 600-281782/4	Lab Control Sample Dup	65	67	97	110
MB 600-281714/6	Method Blank	69	83	101	108
MB 600-281782/6	Method Blank	56	69	106	109

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		TFT2
Lab Sample ID	Client Sample ID	(63-125)
600-196556-1	MW-T-W-191122	88
600-196556-1 MS	MW-T-W-191122	90
600-196556-1 MSD	MW-T-W-191122	92
600-196556-2	BW-1-W-191122	89
600-196556-3	MW-V-W-191122	91
600-196556-4	BW-2-W191122	89
600-196556-5	MW-OR-W-191122	86
LCS 240-414419/5	Lab Control Sample	93
MB 240-414419/4	Method Blank	85

Surrogate Legend

TFT = Trifluorotoluene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH1
Lab Sample ID	Client Sample ID	(37-130)
600-196556-1	MW-T-W-191122	80
600-196556-2	BW-1-W-191122	104
600-196556-3	MW-V-W-191122	101
600-196556-4	BW-2-W191122	102
600-196556-5	MW-OR-W-191122	95
LCS 240-413417/13-A	Lab Control Sample	118
MB 240-413417/12-A	Method Blank	108

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

Surrogate Legend

OTPH = o-Terphenyl (Surr)

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

Lab Sample ID: MB 600-281714/6
Matrix: Water
Analysis Batch: 281714

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 15:51	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 15:51	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 15:51	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 15:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*69*		*50 - 134*		*11/30/19 15:51*	*1*
Dibromofluoromethane	*83*		*62 - 130*		*11/30/19 15:51*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*11/30/19 15:51*	*1*
4-Bromofluorobenzene	*108*		*67 - 139*		*11/30/19 15:51*	*1*

Lab Sample ID: LCS 600-281714/3
Matrix: Water
Analysis Batch: 281714

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0100	0.0110		mg/L		110	70 - 130
Ethylbenzene	0.0100	0.0115		mg/L		115	70 - 130
Toluene	0.0100	0.0102		mg/L		102	70 - 130
Xylenes, Total	0.0200	0.0217		mg/L		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*62*		*50 - 134*
Dibromofluoromethane	*80*		*62 - 130*
Toluene-d8 (Surr)	*83*		*70 - 130*
4-Bromofluorobenzene	*108*		*67 - 139*

Lab Sample ID: LCSD 600-281714/4
Matrix: Water
Analysis Batch: 281714

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0100	0.0110		mg/L		110	70 - 130	0	20
Ethylbenzene	0.0100	0.0107		mg/L		107	70 - 130	7	20
Toluene	0.0100	0.00957		mg/L		96	70 - 130	6	20
Xylenes, Total	0.0200	0.0204		mg/L		102	70 - 130	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*61*		*50 - 134*
Dibromofluoromethane	*83*		*62 - 130*
Toluene-d8 (Surr)	*79*		*70 - 130*
4-Bromofluorobenzene	*113*		*67 - 139*

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

Lab Sample ID: MB 600-281782/6
Matrix: Water
Analysis Batch: 281782

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			12/02/19 16:28	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			12/02/19 16:28	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			12/02/19 16:28	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			12/02/19 16:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*56*		*50 - 134*		*12/02/19 16:28*	*1*
Dibromofluoromethane	*69*		*62 - 130*		*12/02/19 16:28*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*		*12/02/19 16:28*	*1*
4-Bromofluorobenzene	*109*		*67 - 139*		*12/02/19 16:28*	*1*

Lab Sample ID: LCS 600-281782/3
Matrix: Water
Analysis Batch: 281782

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0100	0.00860		mg/L		86	70 - 130
Ethylbenzene	0.0100	0.0115		mg/L		115	70 - 130
Toluene	0.0100	0.0101		mg/L		101	70 - 130
Xylenes, Total	0.0200	0.0216		mg/L		108	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*64*		*50 - 134*
Dibromofluoromethane	*68*		*62 - 130*
Toluene-d8 (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene	*112*		*67 - 139*

Lab Sample ID: LCSD 600-281782/4
Matrix: Water
Analysis Batch: 281782

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0100	0.00845		mg/L		85	70 - 130	2	20
Ethylbenzene	0.0100	0.0109		mg/L		109	70 - 130	5	20
Toluene	0.0100	0.0101		mg/L		101	70 - 130	0	20
Xylenes, Total	0.0200	0.0209		mg/L		105	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*65*		*50 - 134*
Dibromofluoromethane	*67*		*62 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene	*110*		*67 - 139*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 240-414419/4
Matrix: Water
Analysis Batch: 414419

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U	0.10	0.049	mg/L			12/09/19 11:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*85*		*63 - 125*		*12/09/19 11:29*	*1*

Lab Sample ID: LCS 240-414419/5
Matrix: Water
Analysis Batch: 414419

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics [C6 - C10]	0.800	0.790		mg/L		99	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Trifluorotoluene (Surr)	*93*		*63 - 125*

Lab Sample ID: 600-196556-1 MS
Matrix: Water
Analysis Batch: 414419

Client Sample ID: MW-T-W-191122
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics [C6 - C10]	11	H	8.00	16.9		mg/L		77	60 - 138

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Trifluorotoluene (Surr)	*90*		*63 - 125*

Lab Sample ID: 600-196556-1 MSD
Matrix: Water
Analysis Batch: 414419

Client Sample ID: MW-T-W-191122
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	11	H	8.00	17.0		mg/L		78	60 - 138	0	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Trifluorotoluene (Surr)	*92*		*63 - 125*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 240-413417/12-A
Matrix: Water
Analysis Batch: 413589

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413417

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 16:22	1
Oil Range Organics (C28-C36)	0.17	U	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 16:22	1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 240-413417/12-A
Matrix: Water
Analysis Batch: 413589

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413417

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	108		37 - 130	12/02/19 16:09	12/03/19 16:22	1

Lab Sample ID: LCS 240-413417/13-A
Matrix: Water
Analysis Batch: 413589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413417

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10 - C28]			2.50	2.50		mg/L		100	56 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	118		37 - 130

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

GC/MS VOA

Analysis Batch: 281714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196556-2	BW-1-W-191122	Total/NA	Water	8260B	
600-196556-3	MW-V-W-191122	Total/NA	Water	8260B	
600-196556-4	BW-2-W191122	Total/NA	Water	8260B	
600-196556-5	MW-OR-W-191122	Total/NA	Water	8260B	
MB 600-281714/6	Method Blank	Total/NA	Water	8260B	
LCS 600-281714/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 600-281714/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 281782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196556-1 - DL	MW-T-W-191122	Total/NA	Water	8260B	
600-196556-1	MW-T-W-191122	Total/NA	Water	8260B	
MB 600-281782/6	Method Blank	Total/NA	Water	8260B	
LCS 600-281782/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 600-281782/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 414419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196556-1	MW-T-W-191122	Total/NA	Water	8015B	
600-196556-2	BW-1-W-191122	Total/NA	Water	8015B	
600-196556-3	MW-V-W-191122	Total/NA	Water	8015B	
600-196556-4	BW-2-W191122	Total/NA	Water	8015B	
600-196556-5	MW-OR-W-191122	Total/NA	Water	8015B	
MB 240-414419/4	Method Blank	Total/NA	Water	8015B	
LCS 240-414419/5	Lab Control Sample	Total/NA	Water	8015B	
600-196556-1 MS	MW-T-W-191122	Total/NA	Water	8015B	
600-196556-1 MSD	MW-T-W-191122	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 413417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196556-1	MW-T-W-191122	Total/NA	Water	3510C	
600-196556-2	BW-1-W-191122	Total/NA	Water	3510C	
600-196556-3	MW-V-W-191122	Total/NA	Water	3510C	
600-196556-4	BW-2-W191122	Total/NA	Water	3510C	
600-196556-5	MW-OR-W-191122	Total/NA	Water	3510C	
MB 240-413417/12-A	Method Blank	Total/NA	Water	3510C	
LCS 240-413417/13-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 413589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196556-1	MW-T-W-191122	Total/NA	Water	8015B	413417
600-196556-2	BW-1-W-191122	Total/NA	Water	8015B	413417
600-196556-3	MW-V-W-191122	Total/NA	Water	8015B	413417
600-196556-4	BW-2-W191122	Total/NA	Water	8015B	413417
600-196556-5	MW-OR-W-191122	Total/NA	Water	8015B	413417
MB 240-413417/12-A	Method Blank	Total/NA	Water	8015B	413417
LCS 240-413417/13-A	Lab Control Sample	Total/NA	Water	8015B	413417

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-196556-1
Project/Site: Chevron Lovington Paddock

Client Sample ID: MW-T-W-191122
Lab Sample ID: 600-196556-1
Date Collected: 11/22/19 15:00
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	500	20 mL	20 mL	281782	12/02/19 23:52	YX1	TAL HOU
Total/NA	Analysis	8260B		50	20 mL	20 mL	281782	12/03/19 00:18	YX1	TAL HOU
Total/NA	Analysis	8015B		10	5 mL	5 mL	414419	12/09/19 12:50	LKG	TAL CAN
Total/NA	Prep	3510C			1000 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 17:15	DEB	TAL CAN

Client Sample ID: BW-1-W-191122
Lab Sample ID: 600-196556-2
Date Collected: 11/22/19 13:45
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 16:20	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 14:51	LKG	TAL CAN
Total/NA	Prep	3510C			1000 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 17:42	DEB	TAL CAN

Client Sample ID: MW-V-W-191122
Lab Sample ID: 600-196556-3
Date Collected: 11/22/19 12:50
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 16:48	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 15:31	LKG	TAL CAN
Total/NA	Prep	3510C			1030 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 18:09	DEB	TAL CAN

Client Sample ID: BW-2-W191122
Lab Sample ID: 600-196556-4
Date Collected: 11/22/19 14:20
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 17:16	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 16:11	LKG	TAL CAN
Total/NA	Prep	3510C			1050 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 18:36	DEB	TAL CAN

Client Sample ID: MW-OR-W-191122
Lab Sample ID: 600-196556-5
Date Collected: 11/22/19 10:50
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 17:44	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 16:51	LKG	TAL CAN
Total/NA	Prep	3510C			1010 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 19:03	DEB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196556-1

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 600-196556-1
Project/Site: Chevron Lovington Paddock

Laboratory: Eurofins TestAmerica, Houston

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0759	08-04-20
Louisiana	NELAP	01967	06-30-20
Texas	NELAP	T104704223-19-25	10-31-19 *
Texas	NELAP	T104704223-19-25	10-31-20
USDA	US Federal Programs	P330-18-00130	04-30-21
Utah	NELAP	TX000832019-5	07-31-20

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Chas Holder	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-72232-19831.1
Client Contact: Scott Foord	Phone: 806-831-9801	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page
Company: ARCADIS U.S., Inc.				Job #:
Address: 10205 Westheimer Rd Suite 800	Due Date Requested:			
City: Houston	TAT Requested (days): Standard			
State, Zip: TX, 77042				
Phone:	PO #: Purchase Order not required			
Email: william.foord@arcadis.com	WO #:			
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_GRO - Gasoline Range Organics [C6-C10]	8015B_DRO - (MOD) Diesel Range Organics [C10-C28]	RSK_175 - methane	8260B_LL - BTEX Only	2320B Alkalinity	9056- SO4; NO3	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	A	A	N	N		
MW-T-W-191122	11-22	15:00	G	Water			2	1		3				
BW-1-W-191122	11-22	13:45	G	Water			2	1		3				
MW-V-W-191122	11-22	12:50	G	Water			2	1		3				
BW-2-W-191122	11-22	14:20	G	Water			2	1		3				
MW-OK-W-191122	11-22	10:50	G	Water			2	1		3				
				Water										
				Water										
				Water										
				Water										
				Water										
				Water										

600-196556 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Chas Holder	11-25-19/0830	Arcadis			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				11/26/19 1030	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Loc: 600
196556

eurofins | Environment Testing TestAmerica

Eurofins TestAmerica Houston

Sample Receipt Checklist

'19 NOV 26 10:36

Date/Time Received: _____

JOB NUMBER: _____ CLIENT: Arcadis

UNPACKED BY: YP CARRIER/DRIVER: FedEX

Custody Seal Present: ☑YES ☐NO Number of Coolers Received: 2

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
4 C110	(Y) / N	(Y) / N	1.7	107G	+0.1	1.8
C128	Y / N	Y / N		107G	+0.1	
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

YP 11/26/19

CF = correction factor

Samples received on ice? ☑YES ☐NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☑NO ☐YES

Base samples are>pH 12: ☐YES ☐NO Acid preserved are<pH 2: ☐YES ☐NO

TX1005 samples frozen upon receipt: ☐ YES DATE & TIME PUT IN FREEZER: _____

pH paper Lot #_____ VOA headspace acceptable (5-6mm): ☑YES ☐NO ☐NA

Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	☑YES	☐ NO

COMMENTS:

YP 11/26/19

HS-SA-WI-013 Rev. 4A: 08/26/2019

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone: 713-690-4444 Fax: 713-690-5646

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-42842.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 600-196556-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 12/10/2019			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720	PO #:			
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	WO #:			
Email:				
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO/3510C (MOD) Diesel Range Organics [C10-C28]	8015B_GRO/5030B Gasoline Range Organics [C6-C10]	C233	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-T-W-191122 (600-196556-1)	11/22/19	15:00 Central		Water			X	X		1	
MW-V-W-191122 (600-196556-3)	11/22/19	12:50 Central		Water			X	X		1	
BW-2-W191122 (600-196556-4)	11/22/19	14:20 Central		Water			X	X		1	
MW-OR-W-191122 (600-196556-5)	11/22/19	10:50 Central		Water			X	X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11/29/19 1500	TAH	[signature]	11/30/19 930	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone: 713-690-4444 Fax: 713-690-5646

0,3 / C1.0

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-42843.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 600-196556-1
Address: 4101 Shuffel Street NW, ,	Due Date Requested: 12/10/2019			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO/3510C (MOD) Diesel Range Organics [C10-C28]	8015B_GRO/5030B Gasoline Range Organics [C6-C10]	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BW-1-W-191122 (600-196556-2)	11/22/19	13:45 Central		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11/29/19 1500	TAH	[signature]	11/30/19 930	TA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____

Canton Facility

Client TA Huston Site Name _____ Cooler unpacked by: [signature]

Cooler Received on 11/30/19 Opened on 11/30/19

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 0.3 °C Corrected Cooler Temp. 1.0 °C

IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 12-16 have been checked at the originating laboratory.		
12. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC995364
13. Were VOAs on the COC?	Yes	No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
16. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

Only rec'd DROs, did not receive Gro volume

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone: 713-690-4444 Fax: 713-690-5646

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-42884.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 600-196556-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 12/10/2019			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

GC

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO/3510C (MOD) Diesel Range Organics [C10-C28]	8015B_GRO/5030B Gasoline Range Organics [C6-C10]	Total Number of containers	Special Instructions/Note:
				Preservation Code:						
MW-T-W-191122 (600-196556-1)	11/22/19	15:00 Central		Water			X	X	2	2X40 (HCL)
BW-1-W-191122 (600-196556-2)	11/22/19	13:45 Central		Water			X	X	2	
MW-V-W-191122 (600-196556-3)	11/22/19	12:50 Central		Water			X	X	2	
BW-2-W191122 (600-196556-4)	11/22/19	14:20 Central		Water			X	X	2	
MW-OR-W-191122 (600-196556-5)	11/22/19	10:50 Central		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Sandra Torres	12/3/19 1700	TAH		12/4/19 10:00	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client ETA Houston Site Name _____ Cooler unpacked by: Bill Brown

Cooler Received on 12/11/19 Opened on 12/11/19

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # CT4 Foam Box Client Cooler Box Other _____

Packing material used: (Bubble Wrap) Foam (Plastic Bag) None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 0.7 °C Corrected Cooler Temp. 1.4 °C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3. Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels be reconciled with the COC?	(Yes)	No
9. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
10. Sufficient quantity received to perform indicated analyses?	(Yes)	No
11. Are these work share samples?	Yes	(No)
If yes, Questions 12-16 have been checked at the originating laboratory.		
12. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# HC995364
13. Were VOAs on the COC?	Yes	(No)
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	(No) NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	(No)
16. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 600-196556-1

Login Number: 196556
List Number: 1
Creator: Rubio, Yuri

List Source: Eurofins TestAmerica, Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

Laboratory Job ID: 600-196571-1
Client Project/Site: Chevron Lovington Paddock

For:
ARCADIS U.S., Inc.
10205 Westheimer Rd
Suite 800
Houston, Texas 77042

Attn: Scott Foord

Authorized for release by:
12/16/2019 9:58:06 AM

Sachin Kudchadkar, Senior Project Manager
(713)690-4444
sachin.kudchadkar@testamericainc.com

Table of Contents

Case Narrative

Client: ARCADIS U.S., Inc.
Job ID: 600-196571-1
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-196571-1

Comments
No additional comments.

Receipt
The samples were received on 11/26/2019 10:36 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

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

GC VOA
Method 8015B: The following samples were received with less than 2 days remaining on the holding time. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-CW-W-191122 (600-196571-1), MW-D2-W-191122 (600-196571-2), MW-S-W-191122 (600-196571-3) and MW-R-W-191121 (600-196571-4).

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

GC Semi VOA
Method 8015B: The continuing calibration verification (CCV) associated with batch 240-413589 recovered above the upper control limit for o-Terphenyl (Surr). The samples associated with this CCV were non-detects at the RL; therefore, the data have been reported. The following samples are impacted: MW-CW-W-191122 (600-196571-1), MW-D2-W-191122 (600-196571-2), MW-S-W-191122 (600-196571-3) and MW-R-W-191121 (600-196571-4).

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

Organic Prep
Method 3510C: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-CW-W-191122 (600-196571-1), MW-D2-W-191122 (600-196571-2), MW-S-W-191122 (600-196571-3) and MW-R-W-191121 (600-196571-4).

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-413417.

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

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

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 600-196571-1
Project/Site: Chevron Lovington Paddock

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
8015B	Gasoline Range Organics - (GC)	SW846	TAL CAN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL HOU

Protocol References:

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

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-196571-1	MW-CW-W-191122	Water	11/22/19 10:00	11/26/19 10:36	
600-196571-2	MW-D2-W-191122	Water	11/22/19 09:05	11/26/19 10:36	
600-196571-3	MW-S-W-191122	Water	11/22/19 08:20	11/26/19 10:36	
600-196571-4	MW-R-W-191121	Water	11/21/19 16:50	11/26/19 10:36	

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

Client Sample ID: MW-CW-W-191122 — Lab Sample ID: 600-196571-1

No Detections.

Client Sample ID: MW-D2-W-191122 — Lab Sample ID: 600-196571-2

No Detections.

Client Sample ID: MW-S-W-191122 — Lab Sample ID: 600-196571-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics [C6 - C10]	0.050	J H	0.10	0.049	mg/L	1		8015B	Total/NA

Client Sample ID: MW-R-W-191121 — Lab Sample ID: 600-196571-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10 - C28]	0.47	J H	0.48	0.16	mg/L	1		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-CW-W-191122
Lab Sample ID: 600-196571-1

Date Collected: 11/22/19 10:00
Matrix: Water
Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 18:12	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 18:12	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 18:12	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*62*		*50 - 134*		*11/30/19 18:12*	*1*
Dibromofluoromethane	*75*		*62 - 130*		*11/30/19 18:12*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*		*11/30/19 18:12*	*1*
4-Bromofluorobenzene	*109*		*67 - 139*		*11/30/19 18:12*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U H	0.10	0.049	mg/L			12/09/19 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*91*		*63 - 125*		*12/09/19 17:31*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.16	U H	0.49	0.16	mg/L		12/02/19 16:09	12/03/19 19:30	1
Oil Range Organics (C28-C36)	0.16	U H	0.49	0.16	mg/L		12/02/19 16:09	12/03/19 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*124*		*37 - 130*	*12/02/19 16:09*	*12/03/19 19:30*	*1*

Client Sample ID: MW-D2-W-191122
Lab Sample ID: 600-196571-2

Date Collected: 11/22/19 09:05
Matrix: Water
Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 18:40	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 18:40	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 18:40	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*66*		*50 - 134*		*11/30/19 18:40*	*1*
Dibromofluoromethane	*79*		*62 - 130*		*11/30/19 18:40*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*11/30/19 18:40*	*1*
4-Bromofluorobenzene	*106*		*67 - 139*		*11/30/19 18:40*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U H	0.10	0.049	mg/L			12/09/19 18:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*90*		*63 - 125*		*12/09/19 18:11*	*1*

Client Sample ID: MW-D2-W-191122

Lab Sample ID: 600-196571-2

Date Collected: 11/22/19 09:05
Matrix: Water
Date Received: 11/26/19 10:36

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U H	0.49	0.17	mg/L		12/02/19 16:09	12/03/19 19:57	1
Oil Range Organics (C28-C36)	0.17	U H	0.49	0.17	mg/L		12/02/19 16:09	12/03/19 19:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*116*		*37 - 130*	*12/02/19 16:09*	*12/03/19 19:57*	*1*

Client Sample ID: MW-S-W-191122

Lab Sample ID: 600-196571-3

Date Collected: 11/22/19 08:20
Matrix: Water
Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 19:08	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 19:08	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 19:08	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*57*		*50 - 134*		*11/30/19 19:08*	*1*
Dibromofluoromethane	*73*		*62 - 130*		*11/30/19 19:08*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*		*11/30/19 19:08*	*1*
4-Bromofluorobenzene	*108*		*67 - 139*		*11/30/19 19:08*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	**0.050**	**J H**	0.10	0.049	mg/L			12/09/19 18:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*95*		*63 - 125*		*12/09/19 18:50*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 20:24	1
Oil Range Organics (C28-C36)	0.17	U H	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*115*		*37 - 130*	*12/02/19 16:09*	*12/03/19 20:24*	*1*

Client Sample ID: MW-R-W-191121

Lab Sample ID: 600-196571-4

Date Collected: 11/21/19 16:50
Matrix: Water
Date Received: 11/26/19 10:36

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 19:35	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 19:35	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 19:35	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 19:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*59*		*50 - 134*		*11/30/19 19:35*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

Client Sample ID: MW-R-W-191121
Date Collected: 11/21/19 16:50
Date Received: 11/26/19 10:36

Lab Sample ID: 600-196571-4
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*72*		*62 - 130*		*11/30/19 19:35*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*		*11/30/19 19:35*	*1*
4-Bromofluorobenzene	*102*		*67 - 139*		*11/30/19 19:35*	*1*

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U H	0.10	0.049	mg/L			12/09/19 19:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	*92*		*63 - 125*		*12/09/19 19:31*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	**0.47**	**J H**	0.48	0.16	mg/L		12/02/19 16:09	12/03/19 21:18	1
Oil Range Organics (C28-C36)	0.16	U H	0.48	0.16	mg/L		12/02/19 16:09	12/03/19 21:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	*99*		*37 - 130*	*12/02/19 16:09*	*12/03/19 21:18*	*1*

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Job ID: 600-196571-1
Project/Site: Chevron Lovington Paddock

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (50-134)	DBFM (62-130)	TOL (70-130)	BFB (67-139)
600-196571-1	MW-CW-W-191122	62	75	106	109
600-196571-2	MW-D2-W-191122	66	79	103	106
600-196571-3	MW-S-W-191122	57	73	108	108
600-196571-4	MW-R-W-191121	59	72	106	102
LCS 600-281714/3	Lab Control Sample	62	80	83	108
LCSD 600-281714/4	Lab Control Sample Dup	61	83	79	113
MB 600-281714/6	Method Blank	69	83	101	108

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene

Method: 8015B - Gasoline Range Organics - (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TFT2 (63-125)
600-196571-1	MW-CW-W-191122	91
600-196571-2	MW-D2-W-191122	90
600-196571-3	MW-S-W-191122	95
600-196571-4	MW-R-W-191121	92
LCS 240-414419/5	Lab Control Sample	93
MB 240-414419/4	Method Blank	85

Surrogate Legend

TFT = Trifluorotoluene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTPH1 (37-130)
600-196571-1	MW-CW-W-191122	124
600-196571-2	MW-D2-W-191122	116
600-196571-3	MW-S-W-191122	115
600-196571-4	MW-R-W-191121	99
LCS 240-413417/13-A	Lab Control Sample	118
MB 240-413417/12-A	Method Blank	108

Surrogate Legend

OTPH = o-Terphenyl (Surr)

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

Lab Sample ID: MB 600-281714/6
Matrix: Water
Analysis Batch: 281714

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00018	U	0.0010	0.00018	mg/L			11/30/19 15:51	1
Ethylbenzene	0.00021	U	0.0010	0.00021	mg/L			11/30/19 15:51	1
Toluene	0.00020	U	0.0010	0.00020	mg/L			11/30/19 15:51	1
Xylenes, Total	0.00037	U	0.0020	0.00037	mg/L			11/30/19 15:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*69*		*50 - 134*		*11/30/19 15:51*	*1*
Dibromofluoromethane	*83*		*62 - 130*		*11/30/19 15:51*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*11/30/19 15:51*	*1*
4-Bromofluorobenzene	*108*		*67 - 139*		*11/30/19 15:51*	*1*

Lab Sample ID: LCS 600-281714/3
Matrix: Water
Analysis Batch: 281714

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0100	0.0110		mg/L		110	70 - 130
Ethylbenzene	0.0100	0.0115		mg/L		115	70 - 130
Toluene	0.0100	0.0102		mg/L		102	70 - 130
Xylenes, Total	0.0200	0.0217		mg/L		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*62*		*50 - 134*
Dibromofluoromethane	*80*		*62 - 130*
Toluene-d8 (Surr)	*83*		*70 - 130*
4-Bromofluorobenzene	*108*		*67 - 139*

Lab Sample ID: LCSD 600-281714/4
Matrix: Water
Analysis Batch: 281714

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0100	0.0110		mg/L		110	70 - 130	0	20
Ethylbenzene	0.0100	0.0107		mg/L		107	70 - 130	7	20
Toluene	0.0100	0.00957		mg/L		96	70 - 130	6	20
Xylenes, Total	0.0200	0.0204		mg/L		102	70 - 130	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*61*		*50 - 134*
Dibromofluoromethane	*83*		*62 - 130*
Toluene-d8 (Surr)	*79*		*70 - 130*
4-Bromofluorobenzene	*113*		*67 - 139*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 240-414419/4
Matrix: Water
Analysis Batch: 414419

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	0.049	U	0.10	0.049	mg/L			12/09/19 11:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*85*		*63 - 125*		*12/09/19 11:29*	*1*

Lab Sample ID: LCS 240-414419/5
Matrix: Water
Analysis Batch: 414419

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics [C6 - C10]	0.800	0.790		mg/L		99	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Trifluorotoluene (Surr)	*93*		*63 - 125*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 240-413417/12-A
Matrix: Water
Analysis Batch: 413589

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413417

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	0.17	U	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 16:22	1
Oil Range Organics (C28-C36)	0.17	U	0.50	0.17	mg/L		12/02/19 16:09	12/03/19 16:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*108*		*37 - 130*	*12/02/19 16:09*	*12/03/19 16:22*	*1*

Lab Sample ID: LCS 240-413417/13-A
Matrix: Water
Analysis Batch: 413589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413417

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10 - C28]	2.50	2.50		mg/L		100	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*118*		*37 - 130*

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

GC/MS VOA

Analysis Batch: 281714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196571-1	MW-CW-W-191122	Total/NA	Water	8260B	
600-196571-2	MW-D2-W-191122	Total/NA	Water	8260B	
600-196571-3	MW-S-W-191122	Total/NA	Water	8260B	
600-196571-4	MW-R-W-191121	Total/NA	Water	8260B	
MB 600-281714/6	Method Blank	Total/NA	Water	8260B	
LCS 600-281714/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 600-281714/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 414419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196571-1	MW-CW-W-191122	Total/NA	Water	8015B	
600-196571-2	MW-D2-W-191122	Total/NA	Water	8015B	
600-196571-3	MW-S-W-191122	Total/NA	Water	8015B	
600-196571-4	MW-R-W-191121	Total/NA	Water	8015B	
MB 240-414419/4	Method Blank	Total/NA	Water	8015B	
LCS 240-414419/5	Lab Control Sample	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 413417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196571-1	MW-CW-W-191122	Total/NA	Water	3510C	
600-196571-2	MW-D2-W-191122	Total/NA	Water	3510C	
600-196571-3	MW-S-W-191122	Total/NA	Water	3510C	
600-196571-4	MW-R-W-191121	Total/NA	Water	3510C	
MB 240-413417/12-A	Method Blank	Total/NA	Water	3510C	
LCS 240-413417/13-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 413589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196571-1	MW-CW-W-191122	Total/NA	Water	8015B	413417
600-196571-2	MW-D2-W-191122	Total/NA	Water	8015B	413417
600-196571-3	MW-S-W-191122	Total/NA	Water	8015B	413417
600-196571-4	MW-R-W-191121	Total/NA	Water	8015B	413417
MB 240-413417/12-A	Method Blank	Total/NA	Water	8015B	413417
LCS 240-413417/13-A	Lab Control Sample	Total/NA	Water	8015B	413417

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Lovington Paddock

Job ID: 600-196571-1

Client Sample ID: MW-CW-W-191122

Lab Sample ID: 600-196571-1

Date Collected: 11/22/19 10:00
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 18:12	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 17:31	LKG	TAL CAN
Total/NA	Prep	3510C			1030 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 19:30	DEB	TAL CAN

Client Sample ID: MW-D2-W-191122

Lab Sample ID: 600-196571-2

Date Collected: 11/22/19 09:05
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 18:40	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 18:11	LKG	TAL CAN
Total/NA	Prep	3510C			1020 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 19:57	DEB	TAL CAN

Client Sample ID: MW-S-W-191122

Lab Sample ID: 600-196571-3

Date Collected: 11/22/19 08:20
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 19:08	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 18:50	LKG	TAL CAN
Total/NA	Prep	3510C			1000 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 20:24	DEB	TAL CAN

Client Sample ID: MW-R-W-191121

Lab Sample ID: 600-196571-4

Date Collected: 11/21/19 16:50
Matrix: Water
Date Received: 11/26/19 10:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	281714	11/30/19 19:35	KLV	TAL HOU
Total/NA	Analysis	8015B		1	5 mL	5 mL	414419	12/09/19 19:31	LKG	TAL CAN
Total/NA	Prep	3510C			1040 mL	5 mL	413417	12/02/19 16:09	MDH	TAL CAN
Total/NA	Analysis	8015B		1			413589	12/03/19 21:18	DEB	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 600-196571-1
Project/Site: Chevron Lovington Paddock

Laboratory: Eurofins TestAmerica, Houston

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0759	08-04-20
Louisiana	NELAP	01967	06-30-20
Texas	NELAP	T104704223-19-25	10-31-20
USDA	US Federal Programs	P330-18-00130	04-30-21
Utah	NELAP	TX000832019-5	07-31-20

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Chris Holder	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-72232-19831.1
Client Contact: Scott Foord	Phone: 806-831-9801	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page
Company: ARCADIS U.S., Inc.				Job #:
Address: 10205 Westheimer Rd Suite 800	Due Date Requested:			
City: Houston	TAT Requested (days): Standard			
State, Zip: TX, 77042				
Phone:	PO #: Purchase Order not required			
Email: william.foord@arcadis.com	WO #:			
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - Di Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_GRO - Gasoline Range Organics [C6-C10]	8015B_DRO - (MOD) Diesel Range Organics [C10-C28]	RSK_175 - methane	8260B_LL - BTEX Only	2320B Alkalinity	9056- SO4; NO3	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	A	A	N	N		
MW-CR-W-191122	11-22	1000	G	Water			2	1		3				
MW-D2-W-191122	11-22	0905	G	Water			2	1		3				
MW-S-W-191122	11-22	0820	G	Water			2	1		3				
MW-R-W-191121	11-21	1650	G	Water			2	1		3				
				Water										
				Water										
				Water										
				Water										
				Water										
				Water										
				Water										
				Water										

600-196571 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Chris Holder	11-25-19 1030				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 11/26/19 1030	Company: TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Loc: 600
196571

eurofins | Environment Testing TestAmerica

Eurofins TestAmerica Houston

Sample Receipt Checklist

'19 NOV 26 10:36

JOB NUMBER: 571 — Date/Time Received: _____

UNPACKED BY: _____ — CLIENT: Arcadis

CARRIER/DRIVER: FedEX

Custody Seal Present: ☑YES ☐NO — Number of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
0120	(Y) / N	Y / (N)	2.1	0076	+0.1	2.2
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☑YES ☐NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☑NO ☐YES

Base samples are>pH 12: ☐YES ☐NO — Acid preserved are<pH 2: ☐YES ☐NO

TX1005 samples frozen upon receipt: ☐ YES — DATE & TIME PUT IN FREEZER: _____

pH paper Lot #_____ — VOA headspace acceptable (5-6mm): ☑YES ☐NO ☐NA

Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	☑YES	☐NO

COMMENTS:

HS-SA-WI-013 — Rev. 4A; 08/26/2019

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone: 713-690-4444 Fax: 713-690-5646

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-42842.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 600-196571-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 12/10/2019			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO/3510C (MOD) Diesel Range Organics [C10-C28]	8015B_GRO/5030B Gasoline Range Organics [C6-C10]	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-CW-W-191122 (600-196571-1)	11/22/19	10:00 Central		Water			X	X	1	
MW-D2-W-191122 (600-196571-2)	11/22/19	09:05 Central		Water			X	X	1	
MW-S-W-191122 (600-196571-3)	11/22/19	08:20 Central		Water			X	X	1	
MW-R-W-191121 (600-196571-4)	11/21/19	16:50 Central		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11/29/19 1500	TAH	[signature]	11/30/19 930	[signature]
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client TA Huston Site Name _____ Cooler unpacked by:

Cooler Received on 11/30/19 Opened on 11/30/19

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # 10 Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 0.3 °C Corrected Cooler Temp. 1.0 °C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels be reconciled with the COC?	Yes	No
9. Were correct bottle(s) used for the test(s) indicated?	Yes	No
10. Sufficient quantity received to perform indicated analyses?	Yes	No
11. Are these work share samples?	Yes	No
If yes, Questions 12-16 have been checked at the originating laboratory.		
12. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC995364
13. Were VOAs on the COC?	Yes	No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	No
16. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

Only received DRCs, did not receive 5gr volume

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone: 713-690-4444 Fax: 713-690-5646

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-42884.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 600-196571-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 12/10/2019			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: Chevron Lovington Paddock	Project #: 60011652			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

GC

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_DRO/3510C_(MOD)_Diesel_Range_Organics_[C10-C28]	8015B_GRO/5030B_Gasoline_Range_Organics_[C6-C10]	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-CW-W-191122 (600-196571-1)	11/22/19	10:00 Central		Water			X	X	2	2X40 (HCL)
MW-D2-W-191122 (600-196571-2)	11/22/19	09:05 Central		Water			X	X	2	
MW-S-W-191122 (600-196571-3)	11/22/19	08:20 Central		Water			X	X	2	
MW-R-W-191121 (600-196571-4)	11/21/19	16:50 Central		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Sandra Jones	12/3/19 1700	TAH		12/4/19 10:00	2 Pkg
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client ETA Houston Site Name _____ Cooler unpacked by: Bill Brown

Cooler Received on 12/11/19 Opened on 12/12/19

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # CT4 Foam Box Client Cooler Box Other _____

Packing material used: (Bubble Wrap) Foam (Plastic Bag) None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF **+0.7** °C) Observed Cooler Temp. 0.7 °C Corrected Cooler Temp. 1.4 °C
   IR GUN #IR-11 (CF **+0.9**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3. Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels be reconciled with the COC?	(Yes)	No
9. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
10. Sufficient quantity received to perform indicated analyses?	(Yes)	No
11. Are these work share samples?	(Yes)	No
If yes, Questions 12-16 have been checked at the originating laboratory.		
12. Were all preserved sample(s) at the correct pH upon receipt?	Yes	(No) NA pH Strip Lot# **HC995364**
13. Were VOAs on the COC?	Yes	(No)
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	(No) NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	(No)
16. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 600-196571-1

Login Number: 196571
List Number: 1
Creator: Taylor, Jacquelyn R

List Source: Eurofins TestAmerica, Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Arcadis U.S., Inc.

1004 North Big Spring Street

Suite 121

Midland, Texas 79701

Tel 432 687 5400

Fax 432 687 5401

www.arcadis.com